TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

Job Number: 280-111468-2

Job Description: Ravenna, OH

For:
Cardno GS, Inc
2496 Old Ivy Road
Suite 300
Charlottesville, VA 22903

Attention: Mr. Peter Chapman

Approved for release.
Patrick J McEntee
Manager of Project Management
10/4/2018 3:24 PM

Patrick J McEntee, Manager of Project Management
4955 Yarrow Street, Arvada, CO, 80002
(303)736-0107
patrick.mcentee@testamericainc.com
10/04/2018

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.

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Qualifiers

General Chemistry

Qualifier	Qualifier Description
H	Sample was prepped or analyzed beyond the specified holding time
J	Estimated: The analyte was positively identified; the quantitation is an estimation
U	Undetected at the Limit of Detection.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	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: Cardno GS, Inc

Project: Ravenna, OH

Report Number: 280-111468-2

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 6/28/2018 9:20 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 10 coolers at receipt time were 2.0º C, 2.3º C, 2.9º C, 3.1º C, 3.5º C, 4.4º C, 4.6º C, 5.1º C, 5.3º C and 5.6º C.

Receipt Exceptions

One of three HCl preserved VOA vials for the requested 8260B VOCs analysis for FWGmw-022-062618-GW (280-111468-19) was received with a headspace bubble greater than 6mm in diameter. Sufficient sample volume without headspace was received to perform the requested analysis. The client was notified on 6/28/2018.

The container count listed on the chain of custody for FWGmw-023-062618-GW (280-111468-1) did not match the number of containers received by the laboratory. The chain of custody lists 11 containers while the laboratory only received 10 containers. It can be noted that the missing container was for the requested 7196A Hexavalent Chromium analysis. However, sample volume for this client sample ID and collection date/time was logged under a separate job number 240-97687 as sample FWGmw-023-062618-GW (240-97687-4) and the requested 7196A Hexavalent Chromium analysis was performed by TestAmerica's Canton laboratory within hold time. Sufficient and properly preserved sample volume where applicable was received for all other requested analyses for this sample. The client was notified on 6/28/2018.

The requested 8330 Nitroguanidine and 353.2 Nitrocellulose analyses were subcontracted to TestAmerica's Sacramento laboratory.

The following samples requiring Nitroguanidine and Nitrocellulose analyses were received at the TestAmerica Sacramento laboratory outside the required temperature criteria at 18.5c due to a FedEx delay: FWGmw-023-062618-GW (280-111468-1), WBGmw-009-062618-GW (280-111468-2), TB-062618-02 (280-111468-3), LL1mw-089-D-062718-GW (280-111468-4), LL1mw-089-062718-GW (280-111468-5), LL1mw-089-062718-GW (280-111468-5[MS]), LL1mw-089-062718-GW (280-111468-5[MSD]), LL2mw-059-062618-GW (280-111468-6), LL3mw-244-062618-GW (280-111468-7), LL3mw-237-062618-GW (280-111468-8), LL3mw-234-062618-GW (280-111468-9), FWGmw-013-062618-GW (280-111468-10), LL12mw-245-062718-GW (280-111468-11), LL12mw-187-062718-GW (280-111468-12), LL12mw-185-062718-GW (280-111468-13), WBGmw-006-062618-GW (280-111468-14), WBGmw-021-062618-GW (280-111468-15), WBGmw-020-062618-GW (280-111468-16), FWGmw-019-062618-GW (280-111468-17), TB-062618-03 (280-111468-18), FWGmw-022-062618-GW (280-111468-19), CBLmw-002-062618-GW (280-111468-20), CBLmw-001-062618-GW (280-111468-21), CBLmw-001-D-062618-GW (280-111468-22), TB-062618-04 (280-111468-23), LL1mw-084-062718-GW (280-111468-24), LL1mw-081-062718-GW (280-111468-25) and LL1mw-080-062718-GW (280-111468-26). The samples were shipped from TA Denver Lab on June 28 and scheduled to arrive at TA Sacramento on June 29. The samples did not arrive at TA Sacramento until July 2.

The Chain-of-Custody (COC) was received by TA Sacramento without a relinquished signature/date by TA Denver Sample Control.

SDG 280-111468-2 was created to report nitrate and nitrite in accordance with method 9056A for sample LL1mw-084-062718-GW (280-111468-24) as requested by the client on September 26, 2018.

ANIONS (48 HOURS)

Sample LL1mw-084-062718-GW (280-111468-24) was analyzed for anions (48 hours) in accordance with 9056A. The samples were analyzed on 07/21/2018.

The request to report nitrate and nitrite results for sample LL1mw-084-062718-GW (280-111468-24) was made after the holding times had expired .

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

Detection Summary

Client: Cardno GS, Inc
Project/Site: Ravenna, OH

TestAmerica Job ID: 280-111468-2

Client Sample ID: LL1mw-084-062718-GW — Lab Sample ID: 280-111468-24

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	310	J H	500	100	42	ug/L	1		9056A	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: LL1mw-084-062718-GW

Lab Sample ID: 280-111468-24

Date Collected: 06/27/18 11:38

Matrix: Water

Date Received: 06/28/18 09:20

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrate as N	**310**	**J H**	500	100	42	ug/L		07/21/18 04:19	1
Nitrite as N	100	U H	500	100	49	ug/L		07/21/18 04:19	1

Default Detection Limits

Client: Cardno GS, Inc
Project/Site: Ravenna, OH

TestAmerica Job ID: 280-111468-2

General Chemistry

Analyte	LOQ	DL	Units	Method
Nitrate as N	500	42	ug/L	9056A
Nitrite as N	500	49	ug/L	9056A

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 280-423024/6
Matrix: Water
Analysis Batch: 423024

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

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrate as N	100	U	500	100	42	ug/L		07/20/18 14:54	1
Nitrite as N	100	U	500	100	49	ug/L		07/20/18 14:54	1

Lab Sample ID: LCS 280-423024/4
Matrix: Water
Analysis Batch: 423024

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	5000	4850		ug/L		97	88 - 111
Nitrite as N	5000	4760		ug/L		95	87 - 111

Lab Sample ID: LCSD 280-423024/5
Matrix: Water
Analysis Batch: 423024

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrate as N	5000	4850		ug/L		97	88 - 111	0	10
Nitrite as N	5000	4760		ug/L		95	87 - 111	0	10

Lab Sample ID: MRL 280-423024/3
Matrix: Water
Analysis Batch: 423024

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	0.200	0.234	J	mg/L		117	50 - 150
Nitrite as N	0.200	0.231	J	mg/L		115	50 - 150

QC Association Summary

Client: Cardno GS, Inc
Project/Site: Ravenna, OH

TestAmerica Job ID: 280-111468-2

General Chemistry

Analysis Batch: 423024

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-111468-24	LL1mw-084-062718-GW	Total/NA	Water	9056A	
MB 280-423024/6	Method Blank	Total/NA	Water	9056A	
LCS 280-423024/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 280-423024/5	Lab Control Sample Dup	Total/NA	Water	9056A	
MRL 280-423024/3	Lab Control Sample	Total/NA	Water	9056A	

Client Sample ID: LL1mw-084-062718-GW

Date Collected: 06/27/18 11:38
Date Received: 06/28/18 09:20

Lab Sample ID: 280-111468-24

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1	5 mL	5 mL	423024	07/21/18 04:19	CCJ	TAL DEN

Laboratory References:

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

Accreditation/Certification Summary

Client: Cardno GS, Inc
Project/Site: Ravenna, OH

TestAmerica Job ID: 280-111468-2

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

Method Summary

Client: Cardno GS, Inc
Project/Site: Ravenna, OH

TestAmerica Job ID: 280-111468-2

Method	Method Description	Protocol	Laboratory
9056A	Anions, Ion Chromatography	SW846	TAL DEN

Protocol References:

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

Laboratory References:

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

Sample Summary

Client: Cardno GS, Inc
Project/Site: Ravenna, OH

TestAmerica Job ID: 280-111468-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-111468-24	LL1mw-084-062718-GW	Water	06/27/18 11:38	06/28/18 09:20

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-111468-2

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
IC Cal low_00383	07/18/18	07/11/18	Di Water, Lot NA	100 mL	IC N02 CAL_00042	5 mL	Nitrite as N	50 mg/L
					IC N03 cal_00018	5 mL	Nitrate as N	50 mg/L
					IC P04 cal_00018	5 mL	Orthophosphate as P	50 mg/L
.IC N02 CAL_00042	08/31/18		RICCA, Lot 1802e42		(Purchased Reagent)		Nitrite as N	1000 ppm
.IC N03 cal_00018	11/30/18		Ricca, Lot 2705D50		(Purchased Reagent)		Nitrate as N	1000 mg/L
.IC P04 cal_00018	11/30/19		RICCA, Lot 4711L59		(Purchased Reagent)		Orthophosphate as P	1000 mg/L
IC Cal low_00386	07/25/18	07/18/18	Di Water, Lot NA	100 mL	IC N02 CAL_00042	5 mL	Nitrite as N	50 mg/L
					IC N03 cal_00018	5 mL	Nitrate as N	50 mg/L
.IC N02 CAL_00042	08/31/18		RICCA, Lot 1802e42		(Purchased Reagent)		Nitrite as N	1000 ppm
.IC N03 cal_00018	11/30/18		Ricca, Lot 2705D50		(Purchased Reagent)		Nitrate as N	1000 mg/L
IC ICV 5_00204	07/17/18	07/10/18	Di Water, Lot na	10 mL	IC NO2 ICV_00016	0.5 mL	Nitrite as N	50 mg/L
					IC NO3 ICV_00012	0.5 mL	Nitrate as N	50 mg/L
.IC NO2 ICV_00016	05/31/20		ERA, Lot 020518		(Purchased Reagent)		Nitrite as N	1000 mg/L
.IC NO3 ICV_00012	12/31/18		ERA, Lot 140616		(Purchased Reagent)		Nitrate as N	1000 mg/L
IC LCS_01288	07/21/18	07/20/18	Di Water, Lot 27	200 mL	IC Cal low_00386	20 mL	Nitrite as N	5 mg/L
							Nitrate as N	5 mg/L
.IC Cal low_00386	07/25/18	07/18/18	Di Water, Lot NA	100 mL	IC N02 CAL_00042	5 mL	Nitrite as N	50 mg/L
					IC N03 cal_00018	5 mL	Nitrate as N	50 mg/L
..IC N02 CAL_00042	08/31/18		RICCA, Lot 1802e42		(Purchased Reagent)		Nitrite as N	1000 ppm
..IC N03 cal_00018	11/30/18		Ricca, Lot 2705D50		(Purchased Reagent)		Nitrate as N	1000 mg/L

Reagent

IC N02 CAL_00042

RICCA CHEMICAL COMPANY®

448 West Fork Dr
Arlington, TX 76012
http://www.riccachemical.com
1-888-GO-RICCA
customerservice@riccachemical.com

Certificate of Analysis

Nitrite Nitrogen Standard, 1000 ppm N (3285 ppm NO_2^-)

Lot Number: 1802E42 **Product Number:** R5444900

Manufacture Date: FEB 14, 2018
Expiration Date: AUG 2018

Name	CAS#	Grade
Water	7732-18-5	ACS/ASTM/USP/EP
Potassium Nitrite	7758-09-0	ACS

Test	Specification	Result	NIST SRM#
Appearance	Colorless liquid	Passed	
Assay (vs. Potassium Permanganate)	995-1005 ppm N	1001 ppm N	40

Volumetric glassware complies with Class A tolerance requirements of ASTM E 288 and NIST Circular 434; it is calibrated before first use and recalibrated regularly in accordance with ASTM E 542 and NIST Procedure NBSIR 74-461. Balances are calibrated regularly with weights certified traceable to the NIST national mass standard. Thermometers and temperature probes are calibrated before first use and recalibrated regularly with a thermometer traceable to NIST standards. All products are prepared according to master documents that assure manufacture according to validated methods. Batch records document raw material traceability and production and testing history for each lot manufactured.

Part Number	Size / Package Type	Shelf Life (Unopened Container)
R5444900-120C	120 mL amber glass	6 months
R5444900-500C	500 mL amber glass	6 months

Recommended Storage: 2°C - 8°C (36°F - 46°F)

Israel Alamudun (02/14/2018)
Quality Control Supervisor
This Certificate of Analysis is designed to comply with ISO Guide 31 "Reference Materials -- Contents of Certificates and Labels."

Reagent

IC N03 cal_00018

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Pocomoke City, MD 21851
Batesville, IN 47006
http://www.riccachemical.com
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Certificate of Analysis

Nitrate Nitrogen Standard, 1000 ppm N (4427 ppm NO_3^-)

Lot Number: 2705D50 **Product Number:** 5459

Manufacture Date: MAY 24, 2017
Expiration Date: NOV 2018

The certified value reported is the prepared value based upon the method of preparation of the material. The uncertainty in the prepared value is based upon the volumetric method of preparation.

Name	CAS#	Grade
Water	7732-18-5	ACS/ASTM/USP/EP
Potassium Nitrate	7757-79-1	High Purity
Chloroform	67-66-3	

Test	Specification	Result
Appearance	Colorless liquid	Passed
Nitrogen (N)	995-1005 ppm	1000 ppm

Specification	Reference
Nitrate Solution, Stock (1.0 mL = 1.0 mg NO3-N)	ASTM (D 3867 A)
Nitrate Solution, Stock (1.0 mL = 1.0 mg NO3-N)	ASTM (D 3867 B)
Stock Nitrate Solution: 1 mL = 1.0 mg NO3-N	EPA (353.2)
Stock Nitrate Solution: 1.0 mL = 1.00 mg NO3-N	EPA (353.3)

Volumetric glassware complies with Class A tolerance requirements of ASTM E 288 and NIST Circular 434; it is calibrated before first use and recalibrated regularly in accordance with ASTM E 542 and NIST Procedure NBSIR 74-461. Balances are calibrated regularly with weights certified traceable to the NIST national mass standard. Thermometers and temperature probes are calibrated before first use and recalibrated regularly with a thermometer traceable to NIST standards. All products are prepared according to master documents that assure manufacture according to validated methods. Batch records document raw material traceability and production and testing history for each lot manufactured.

Part Number	Size / Package Type	Shelf Life (Unopened Container)
5459-16	500 mL natural poly	18 months

Recommended Storage: 15°C - 30°C (59°F - 86°F)

Andy Baumgartner (05/24/2017)
Quality Control Supervisor
This Certificate of Analysis is designed to comply with ISO Guide 31 "Reference Materials -- Contents of Certificates and Labels."

Reagent

IC NO2 ICV_00016

ERA

A Waters Company

Certificate of Analysis

PRODUCT:	1000 mg/L Nitrite as N (NO_2-N)
CATALOG NUMBER:	053 -125 mL; 990 - 500 mL
LOT NUMBER:	020518
ISSUE DATE:	May 16, 2018
REVISION DATE:	Original
STARTING MATERIAL:	Sodium Nitrite ($NaNO_2$)
CERTIFIED CONCENTRATION[1]:	1000 mg/L
UNCERTAINTY[2]:	4.7%
MATRIX:	18 megohm deionized water
DENSITY:	1.0004 ± 0.0008 g/mL at 19.2°C and 752 mm Hg
TRACEABILITY[3]:	See Footnote 3
NIST/SRM:	-
VERIFICATION METHOD:	Ion Chromatography
STORAGE:	Store at 20-25°C

1. The **Certified Concentration** is the actual made-to concentration confirmed by ERA analytical verification.

2. The stated **Uncertainty** is the total propagated uncertainty at the 95% confidence interval. The uncertainty is based on the preparation of the product and includes uncertainty related to the starting material used and the volumetric and gravimetric measurements made. The method of calculating uncertainty is taken from the ISO Guide to the Expression of Uncertainty in Measurement (current version). The uncertainty applies to the product as supplied and does not take into account any required or optional dilutions and/or preparations the laboratory may perform while using this product.

3. Traceability ((% Recovery Certified Standard)/(% Recovery NIST SRM))* 100.

   The traceability data shown were compiled by analyzing the ERA standards or their associated stock solutions against the applicable NIST SRMs. Where a NIST SRM is not available, the product is metrologically traceable through an unbroken chain of calibrations to NIST weights, each having stated uncertainties and utilizing measurement standards that are appropriate for the physical and/or chemical property being measured.

This standard **expires 5/2020**. The certified values are monitored and purchasers will be notified of any significant changes resulting in recertification or withdrawal of this certified reference material during the period of validity of this certificate.

This product is intended to be used as either a calibration standard or a quality control check of the entire analytical process for the analytes/matrix included in the standard.

If you have any questions or need technical assistance, please call ERA technical assistance at 1-800-372-0122 or email to info@eraqc.com

Certifying Officer: Brian Miller - Product Line Manager

ISO/IEC GUIDE 34:2009

ACCREDITED

REFERENCE MATERIAL PRODUCER
CERTIFICATE NO. 1539.03

ISO/IEC 17025:2005

ACCREDITED

CHEMICAL TESTING LABORATORY
CERTIFICATE NO. 1539.02

16341 Table Mtn Pkwy, Golden, CO 80403 800-372-0122 fax: 303-421-0159 www.eraqc.com

Reagent

IC NO3 ICV_00012

Certificate of Analysis

PRODUCT:	1000 mg/L Nitrate as N (NO_3-N)
CATALOG NUMBER:	052 -125 mL; 991 - 500 mL
LOT NUMBER:	140616
ISSUE DATE:	June 30, 2016
REVISION DATE:	June 26, 2017
STARTING MATERIAL:	Potassium Nitrate (KNO_3)
CERTIFIED CONCENTRATION[1]:	1000 mg/L
UNCERTAINTY[2]:	0.6%
MATRIX:	18 megohm deionized water
DENSITY:	1.0020 ± 0.0008 g/mL at 21.5°C and 762 mm Hg
TRACEABILITY[3]:	102%
NIST/SRM:	3185 Nitrate
VERIFICATION METHOD:	Ion Chromatography
STORAGE:	Store at 20-25°C

1. The **Certified Concentration** is the actual made-to concentration confirmed by ERA analytical verification.

2. The stated **Uncertainty** is the total propagated uncertainty at the 95% confidence interval. The uncertainty is based on the preparation and internal analytical verification of the product by ERA, multiplied by a coverage factor which is equal to the student t factor at a 95% confidence interval at n-1 degrees of freedom. The uncertainty applies to the product as supplied and does not take into account any required or optional dilutions and/or preparations the laboratory may perform while using this product.

3. Traceability Recovery = ((% Recovery certified standard)/(% Recovery NIST SRM))*100.

   The traceability data shown were compiled by analyzing the ERA standards or their associated stock solutions against the applicable NIST SRMs.

This standard **expires 12/2018**. The certified values are monitored and purchasers will be notified of any significant changes resulting in recertification or withdrawal of this certified reference material during the period of validity of this certificate.

This product is intended to be used as either a calibration standard or a quality control check of the entire analytical process for the analytes/matrix included in the standard.

If you have any questions or need technical assistance, please call ERA technical assistance at 1-800-372-0122 or email to info@eraqc.com

Certifying Officer: Brian Miller

ISO/IEC GUIDE 34:2009 ACCREDITED
REFERENCE MATERIAL PRODUCER
CERTIFICATE NO. 1539.03

ISO/IEC 17025:2005 ACCREDITED
CHEMICAL TESTING LABORATORY
CERTIFICATE NO. 1539.02

Reagent

IC P04 cal_00018

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Batesville, IN 47006
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customerservice@riccachemical.com

Certificate of Analysis

Phosphorus AA Standard, 1000 ppm P in H_2O

Lot Number: 4711L59 **Product Number:** AP1KW

Manufacture Date: NOV 30, 2017
Expiration Date: NOV 2019

This is a single element solution that was prepared volumetrically to contain the certified value reported. The uncertainty associated with the certifiec value is the sum of the estimated errors due to the purity of the raw material, the volumetric preparation of the solution, and transpiration of the solution through the container wall.
The final solution concentration is confirmed by AA, ICP, or ICP-MS, and is traceable to NIST Standard Reference Material 3139.

Name	CAS#	Grade
Water	7732-18-5	ACS/ASTM/USP/EP
Ammonium Dihydrogen Phosphate	7722-76-1	High Purity

Test	Specification	Result	NIST SRM#
Appearance	Colorless liquid	Passed	
Phosphorus (P)	995-1005 ppm	1000 ppm	3139

Volumetric glassware complies with Class A tolerance requirements of ASTM E 288 and NIST Circular 434; it is calibrated before first use and recalibrated regularly in accordance with ASTM E 542 and NIST Procedure NBSIR 74-461. Balances are calibrated regularly with weights certified traceable to the NIST national mass standard. Thermometers and temperature probes are calibrated before first use and recalibrated regularly with a thermometer traceable to NIST standards. All products are prepared according to master documents that assure manufacture according to validated methods. Batch records document raw material traceability and production and testing history for each lot manufactured.

Part Number	Size / Package Type	Shelf Life (Unopened Container)
AP1KW-500	500 mL natural poly	24 months

Recommended Storage: 15°C - 30°C (59°F - 86°F)

Jim Gibbs (11/30/2017)
Quality Control Supervisor
This Certificate of Analysis is designed to comply with ISO Guide 31 "Reference Materials -- Contents of Certificates and Labels."

GENERAL CHEMISTRY

COVER PAGE
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job Number: 280-111468-2

SDG No.:

Project: Ravenna, OH

Client Sample ID	Lab Sample ID
LL1mw-084-062718-GW	280-111468-24

Comments:

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: LL1mw-084-062718-GW
Lab Sample ID: 280-111468-24
Lab Name: TestAmerica Denver
Job No.: 280-111468-2
SDG ID.:
Matrix: Water
Date Sampled: 06/27/2018 11:38
Reporting Basis: WET
Date Received: 06/28/2018 09:20

Analyte	Result	LOQ	LOD	DL	Units	C	Q	DIL	Method
Nitrate as N	310	500	100	42	ug/L	J	H	1	9056A
Nitrite as N	100	500	100	49	ug/L	U	H	1	9056A

2-IN
CALIBRATION QUALITY CONTROL
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job No.: 280-111468-2

SDG No.:

Analyst: CCJ Batch Start Date: 07/11/2018

Reporting Units: mg/L Analytical Batch No.: 421777

Sample Number	QC Type	Time	Analyte	Result	Spike Amount	(%) Recovery	Limits	Qual	Reagent
10	ICV	15:50	Nitrate as N	3.83	4.00	96	90-110		IC ICV 5_00204
			Nitrite as N	3.78	4.00	95	90-110		IC ICV 5_00204
11	ICB	16:07	Nitrate as N	0.10				U	
			Nitrite as N	0.10				U	

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

FORM II-IN

2-IN
CALIBRATION QUALITY CONTROL
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job No.: 280-111468-2

SDG No.:

Analyst: CCJ Batch Start Date: 07/20/2018

Reporting Units: mg/L Analytical Batch No.: 423024

Sample Number	QC Type	Time	Analyte	Result	Spike Amount	(%) Recovery	Limits	Qual	Reagent
1	CCV	13:27	Nitrate as N	4.87	5.00	97	90-110		IC LCS_01288
			Nitrite as N	4.74	5.00	95	90-110		IC LCS_01288
2	CCB	13:44	Nitrate as N	0.10				U	
			Nitrite as N	0.10				U	
17	CCV	22:47	Nitrate as N	4.89	5.00	98	90-110		IC LCS_01288
			Nitrite as N	4.73	5.00	95	90-110		IC LCS_01288
18	CCB	23:04	Nitrate as N	0.10				U	
			Nitrite as N	0.10				U	
29	CCV	02:17	Nitrate as N	4.88	5.00	98	90-110		IC LCS_01288
			Nitrite as N	4.74	5.00	95	90-110		IC LCS_01288
30	CCB	02:34	Nitrate as N	0.10				U	
			Nitrite as N	0.10				U	
37	CCV	04:37	Nitrate as N	4.93	5.00	99	90-110		IC LCS_01288
			Nitrite as N	4.73	5.00	95	90-110		IC LCS_01288
38	CCB	04:54	Nitrate as N	0.10				U	
			Nitrite as N	0.10				U	

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

FORM II-IN

3-IN
METHOD BLANK
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job No.: 280-111468-2

SDG No.:

Method	Lab Sample ID	Analyte	Result	Qual	Units	LOQ	Dil
Batch ID: 423024 Date: 07/20/2018 14:54							
9056A	MB 280-423024/6	Nitrate as N	100	U	ug/L	500	1
9056A	MB 280-423024/6	Nitrite as N	100	U	ug/L	500	1

7A-IN
LAB CONTROL SAMPLE
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job No.: 280-111468-2

SDG No.:

Matrix: Water

Method	Lab Sample ID	Analyte	Result	C	Unit	Spike Amount	Pct. Rec.	Limits	RPD	RPD Limit	Q
Batch ID: 423024	Date: 07/20/2018 14:19										
						LCS Source: IC LCS_01288					
9056A	LCS 280-423024/4	Nitrate as N	4850		ug/L	5000	97	88-111	0	10	
9056A	LCS 280-423024/4	Nitrite as N	4760		ug/L	5000	95	87-111	0	10	

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

FORM VIIA-IN

7A-IN
LAB CONTROL SAMPLE DUPLICATE
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job No.: 280-111468-2

SDG No.:

Matrix: Water

Method	Lab Sample ID	Analyte	Result	C	Unit	Spike Amount	Pct. Rec.	Limits	RPD	RPD Limit	Q
Batch ID: 423024	Date: 07/20/2018 14:37										
						LCSD Source: IC LCS_01288					
9056A	LCSD 280-423024/5	Nitrate as N	4850		ug/L	5000	97	88-111	0	10	
9056A	LCSD 280-423024/5	Nitrite as N	4760		ug/L	5000	95	87-111	0	10	

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

FORM VIIA-IN

7A-IN
METHOD REPORTING LIMIT CHECK
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job No.: 280-111468-2

SDG No.:

Matrix: Water

Method	Lab Sample ID	Analyte	Result	C	Unit	Spike Amount	Pct. Rec.	Limits	RPD	RPD Limit	Q
Batch ID: 423024	Date: 07/20/2018 14:02										
						LCS Source: IC Cal low_00386					
9056A	MRL 280-423024/3	Nitrate as N	0.234	J	mg/L	0.200	117	50-150			
9056A	MRL 280-423024/3	Nitrite as N	0.231	J	mg/L	0.200	115	50-150			

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

FORM VIIA-IN

9-IN
DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job Number: 280-111468-2

SDG Number:

Matrix: Water Instrument ID: WC_IonChrom10

Method: 9056A DL Date: 02/16/2014 00:00

Analyte	Wavelength/ Mass	LOQ (mg/L)	DL (mg/L)
Nitrate as N		0.5	0.042
Nitrite as N		0.5	0.049

9-IN
CALIBRATION BLANK DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job Number: 280-111468-2

SDG Number:

Matrix: Water Instrument ID: WC_IonChrom10

Method: 9056A XMDL Date: 02/16/2014 00:00

Analyte	Wavelength/ Mass	XRL (mg/L)	XMDL (mg/L)
Nitrate as N		0.5	0.042
Nitrite as N		0.5	0.049

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job No.: 280-111468-2

SDG No.:

Instrument ID: WC_IonChrom10 Analysis Method: 9056A

Start Date: 07/11/2018 13:08 End Date: 07/12/2018 05:11

Lab Sample Id	D/F	Type	Time	Analytes																										
				NO2-N	NO3																									
ZZZZZZ			13:08																											
STD1 280-421777/2 IC	1		13:26	X	X																									
STD2 280-421777/3 IC	1		13:43	X	X																									
STD3 280-421777/4 IC	1		14:01	X	X																									
STD4 280-421777/5 IC	1		14:18	X	X																									
STD5 280-421777/6 IC	1		14:35	X	X																									
STD6 280-421777/7 IC	1		14:53	X	X																									
ICV 280-421777/10	1		15:50	X	X																									
ICB 280-421777/11	1		16:07	X	X																									
ZZZZZZ			16:24																											
ZZZZZZ			16:42																											
ZZZZZZ			16:59																											
ZZZZZZ			17:17																											
ZZZZZZ			18:07																											
ZZZZZZ			18:25																											
ZZZZZZ			18:42																											
ZZZZZZ			19:00																											
ZZZZZZ			19:17																											
ZZZZZZ			19:35																											
ZZZZZZ			19:52																											
ZZZZZZ			20:10																											
ZZZZZZ			20:27																											
ZZZZZZ			20:45																											
CCV 280-421777/26			21:02																											
CCB 280-421777/27			21:20																											
ZZZZZZ			21:37																											
ZZZZZZ			21:55																											
ZZZZZZ			22:12																											
ZZZZZZ			22:30																											
ZZZZZZ			22:47																											
ZZZZZZ			23:05																											
ZZZZZZ			23:22																											
ZZZZZZ			23:40																											
ZZZZZZ			23:57																											
ZZZZZZ			00:15																											
CCV 280-421777/38			00:32																											
CCB 280-421777/39			00:50																											
ZZZZZZ			01:07																											
ZZZZZZ			01:24																											

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job No.: 280-111468-2

SDG No.:

Instrument ID: WC_IonChrom10 Analysis Method: 9056A

Start Date: 07/11/2018 13:08 End Date: 07/12/2018 05:11

Lab Sample Id	D/F	Type	Time	Analytes																								
				NO2-N	NO3																							
CCV 280-421777/49			03:44																									
CCB 280-421777/50			04:01																									
CCV 280-421777/53			04:53																									
CCB 280-421777/54			05:11																									

Prep Types:
=

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job No.: 280-111468-2

SDG No.:

Instrument ID: WC_IonChrom10 Analysis Method: 9056A

Start Date: 07/20/2018 13:27 End Date: 07/21/2018 04:54

Lab Sample Id	D/F	Type	Time	Analytes																										
				NO2-N	NO3																									
CCV 280-423024/1	1		13:27	X	X																									
CCB 280-423024/2	1		13:44	X	X																									
MRL 280-423024/3	1	T	14:02	X	X																									
LCS 280-423024/4	1	T	14:19	X	X																									
LCSD 280-423024/5	1	T	14:37	X	X																									
MB 280-423024/6	1	T	14:54	X	X																									
ZZZZZZ			19:53																											
ZZZZZZ			20:10																											
ZZZZZZ			20:27																											
ZZZZZZ			20:45																											
ZZZZZZ			21:02																											
ZZZZZZ			21:20																											
ZZZZZZ			21:37																											
ZZZZZZ			21:55																											
ZZZZZZ			22:12																											
ZZZZZZ			22:29																											
CCV 280-423024/17	1		22:47	X	X																									
CCB 280-423024/18	1		23:04	X	X																									
ZZZZZZ			23:22																											
ZZZZZZ			23:39																											
ZZZZZZ			23:57																											
ZZZZZZ			00:14																											
ZZZZZZ			00:32																											
ZZZZZZ			00:49																											
ZZZZZZ			01:07																											
ZZZZZZ			01:24																											
ZZZZZZ			01:42																											
ZZZZZZ			01:59																											
CCV 280-423024/29	1		02:17	X	X																									
CCB 280-423024/30	1		02:34	X	X																									
ZZZZZZ			02:52																											
ZZZZZZ			03:09																											
ZZZZZZ			03:27																											
280-111468-24	1	T	04:19	X	X																									
CCV 280-423024/37	1		04:37	X	X																									
CCB 280-423024/38	1		04:54	X	X																									

Prep Types:
T = Total/NA

FORM XIII-IN

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: TestAmerica Denver Job No.: 280-111468-2

SDG No.:

Batch Number: 421777 Batch Start Date: 07/11/18 13:08 Batch Analyst: Jewell, Connie C

Batch Method: 9056A Batch End Date:

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	IC CAL cl/so4 00207	IC Cal low 00383	IC CL ICV 00014	IC ICV 5 00204
STD1 280-421777/2 IC		9056A		5 mL	5 mL	0.04 mL	0.04 mL		
STD2 280-421777/3 IC		9056A		5 mL	5 mL	0.1 mL	0.1 mL		
STD3 280-421777/4 IC		9056A		5 mL	5 mL	0.2 mL	0.2 mL		
STD4 280-421777/5 IC		9056A		5 mL	5 mL	2.4 mL	0.8 mL		
STD5 280-421777/6 IC		9056A		5 mL	5 mL	4.8 mL	1.6 mL		
STD6 280-421777/7 IC		9056A		5 mL	5 mL	8 mL	2 mL		
ICV 280-421777/10		9056A		5 mL	5 mL			0.8 mL	0.8 mL
ICB 280-421777/11		9056A		5 mL	5 mL				

Lab Sample ID	Client Sample ID	Method Chain	Basis	IC SO4 ICV 00017					
STD1 280-421777/2 IC		9056A							
STD2 280-421777/3 IC		9056A							
STD3 280-421777/4 IC		9056A							
STD4 280-421777/5 IC		9056A							
STD5 280-421777/6 IC		9056A							
STD6 280-421777/7 IC		9056A							
ICV 280-421777/10		9056A		0.8 mL					
ICB 280-421777/11		9056A							

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 Denver Job No.: 280-111468-2

SDG No.:

Batch Number: 421777 Batch Start Date: 07/11/18 13:08 Batch Analyst: Jewell, Connie C

Batch Method: 9056A Batch End Date:

Batch Notes	
Eluent 1 ID	M18021202
Pipette/Syringe/Dispenser ID	wc5000ccj, wc1000cj, wc200cj
Regeneration Solution ID	C800067
Sufficient Volume for Batch QC	yes

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 Denver Job No.: 280-111468-2

SDG No.:

Batch Number: 423024 Batch Start Date: 07/20/18 13:27 Batch Analyst: Jewell, Connie C

Batch Method: 9056A Batch End Date:

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	IC CAL cl/so4 00208	IC Cal low 00386	IC LCS 01288	
CCV 280-423024/1		9056A		5 mL	5 mL			10 mL	
CCB 280-423024/2		9056A		5 mL	5 mL				
MRL 280-423024/3		9056A		5 mL	5 mL	0.1 mL	0.04 mL		
LCS 280-423024/4		9056A		5 mL	5 mL			10 mL	
LCSD 280-423024/5		9056A		5 mL	5 mL			10 mL	
MB 280-423024/6		9056A		5 mL	5 mL				
CCV 280-423024/17		9056A		5 mL	5 mL			10 mL	
CCB 280-423024/18		9056A		5 mL	5 mL				
CCV 280-423024/29		9056A		5 mL	5 mL			10 mL	
CCB 280-423024/30		9056A		5 mL	5 mL				
280-111468-K-24	LL1mw-084-062718-GW	9056A	T	5 mL	5 mL				
CCV 280-423024/37		9056A		5 mL	5 mL			10 mL	
CCB 280-423024/38		9056A		5 mL	5 mL				

Batch Notes	
Eluent 1 ID	M18021202
Pipette/Syringe/Dispenser ID	wc5000ccj, wc1000cj, wc200cj
Regeneration Solution ID	M17060701
Sufficient Volume for Batch QC	yes

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.

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom10\20180711-71867.b\Info 2_DENPC179_Anions_20180711-13
Lims ID: STD1
Client ID:
Sample Type: IC Calib Level: 1
Inject. Date: 11-Jul-2018 13:26:00 ALS Bottle#: 0 Worklist Smp#: 2
Injection Vol: 5.0 ul Dil. Factor: 1.0000
Sample Info: 280-0071867-002
Misc. Info.: 280-0071867-002
Operator ID: wetchemd Instrument ID: WC_IonChrom10
Sublist: chrom-Anions_IC10*sub2

Method: \\ChromNA\Denver\ChromData\WC_IonChrom10\20180711-71867.b\Anions_IC10.m
Limit Group: Wet - Anions
Last Update: 26-Sep-2018 15:45:22 Calib Date: 11-Jul-2018 14:53:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom10\20180711-71867.b\Info 2_DENPC179_Anions_20180711-15

Column 1 : Det: Info 2_091554_1
Process Host: CTX0310

First Level Reviewer: jewellc Date: 11-Jul-2018 15:33:11

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride	3.142	3.140	0.002	1061943	0.2000	0.2091	
2 Chloride	4.343	4.332	0.011	3133840	1.00	1.17	
3 Nitrite as N	5.072	5.057	0.015	1177727	0.2000	0.2395	
4 Bromide	6.168	6.150	0.018	250580	0.2000	0.2272	
5 Nitrate as N	7.023	6.977	0.046	1493696	0.2000	0.2383	
6 Orthophosphate as P	9.368	9.340	0.028	988232	0.2000	0.1964	
7 Sulfate	11.038	11.022	0.016	2260424	1.00	1.21	

Reagents:

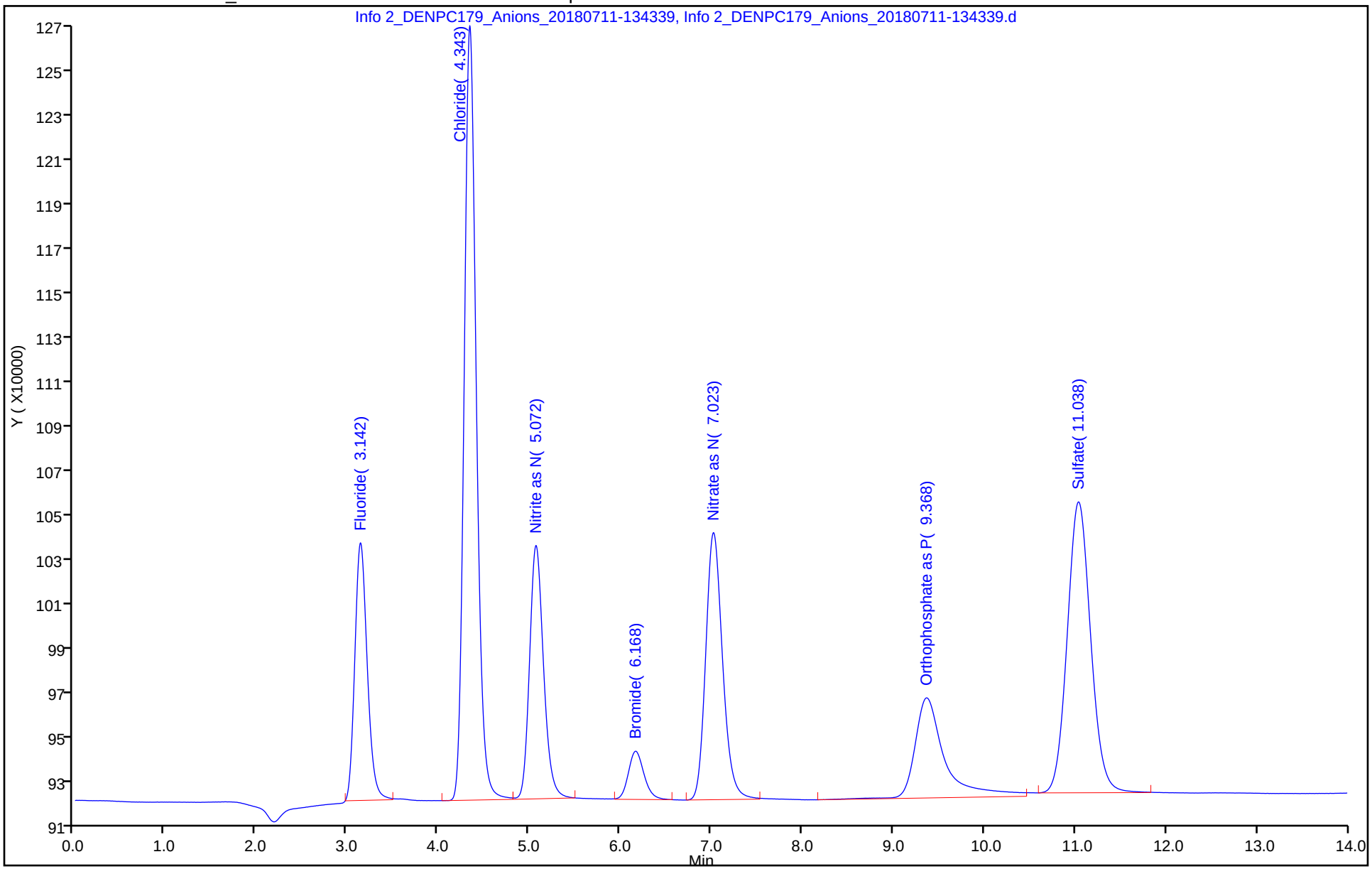
IC CAL cl/so4_00207 Amount Added: 0.04 Units: mL
IC Cal low_00383 Amount Added: 0.04 Units: mL

Report Date: 26-Sep-2018 15:45:23 Chrom Revision: 2.3 19-Jul-2018 15:14:50

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom10\20180711-71867.b\Info 2_DENPC179_Anions_20180711-134339.d

Injection Date:	11-Jul-2018 13:26:00	Instrument ID:	WC_IonChrom10	Operator ID:	wetchemd
Lims ID:	STD1			Worklist Smp#:	2
Client ID:					
Injection Vol:	5.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC10	Limit Group:	Wet - Anions		



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom10\20180711-71867.b\Info 2_DENPC179_Anions_20180711-14
Lims ID: STD2
Client ID:
Sample Type: IC Calib Level: 2
Inject. Date: 11-Jul-2018 13:43:00 ALS Bottle#: 0 Worklist Smp#: 3
Injection Vol: 5.0 ul Dil. Factor: 1.0000
Sample Info: 280-0071867-003
Misc. Info.: 280-0071867-003
Operator ID: wetchemd Instrument ID: WC_IonChrom10
Sublist: chrom-Anions_IC10*sub2

Method: \\ChromNA\Denver\ChromData\WC_IonChrom10\20180711-71867.b\Anions_IC10.m
Limit Group: Wet - Anions
Last Update: 26-Sep-2018 15:45:23 Calib Date: 11-Jul-2018 14:53:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom10\20180711-71867.b\Info 2_DENPC179_Anions_20180711-15

Column 1 : Det: Info 2_091554_1
Process Host: CTX0310

First Level Reviewer: jewellc Date: 11-Jul-2018 15:33:20

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride	3.143	3.140	0.003	3163927	0.5000	0.4945	
2 Chloride	4.343	4.332	0.011	8127283	2.50	2.31	
3 Nitrite as N	5.070	5.057	0.013	3252285	0.5000	0.4600	
4 Bromide	6.163	6.150	0.013	629625	0.5000	0.4813	
5 Nitrate as N	7.013	6.977	0.036	3884950	0.5000	0.4684	
6 Orthophosphate as P	9.360	9.340	0.020	2233170	0.5000	0.5262	
7 Sulfate	11.037	11.022	0.015	5881303	2.50	2.33	

Reagents:

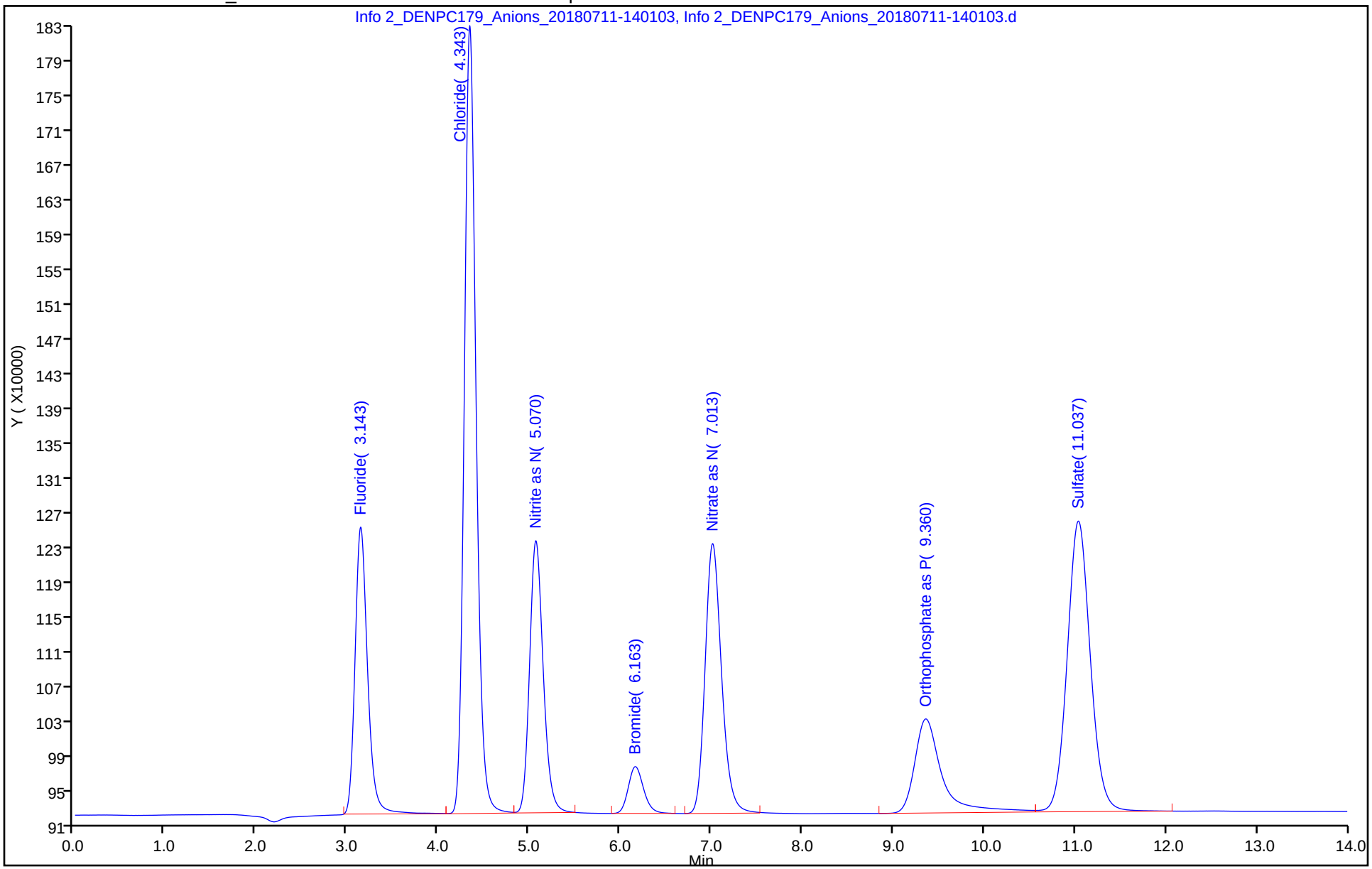
IC CAL cl/so4_00207 Amount Added: 0.10 Units: mL
IC Cal low_00383 Amount Added: 0.10 Units: mL

Report Date: 26-Sep-2018 15:45:23 Chrom Revision: 2.3 19-Jul-2018 15:14:50

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom10\20180711-71867.b\Info 2_DENPC179_Anions_20180711-140103.d

Injection Date:	11-Jul-2018 13:43:00	Instrument ID:	WC_IonChrom10	Operator ID:	wetchemd
Lims ID:	STD2			Worklist Smp#:	3
Client ID:					
Injection Vol:	5.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC10	Limit Group:	Wet - Anions		



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom10\20180711-71867.b\Info 2_DENPC179_Anions_20180711-14
Lims ID: STD3
Client ID:
Sample Type: IC Calib Level: 3
Inject. Date: 11-Jul-2018 14:01:00 ALS Bottle#: 0 Worklist Smp#: 4
Injection Vol: 5.0 ul Dil. Factor: 1.0000
Sample Info: 280-0071867-004
Misc. Info.: 280-0071867-004
Operator ID: wetchemd Instrument ID: WC_IonChrom10
Sublist: chrom-Anions_IC10*sub2

Method: \\ChromNA\Denver\ChromData\WC_IonChrom10\20180711-71867.b\Anions_IC10.m
Limit Group: Wet - Anions
Last Update: 26-Sep-2018 15:45:24 Calib Date: 11-Jul-2018 14:53:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom10\20180711-71867.b\Info 2_DENPC179_Anions_20180711-15

Column 1 : Det: Info 2_091554_1
Process Host: CTX0310

First Level Reviewer: jewellc Date: 11-Jul-2018 15:33:31

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride	3.142	3.140	0.002	6649890	1.00	0.9678	
2 Chloride	4.340	4.332	0.008	17698953	5.00	4.51	
3 Nitrite as N	5.067	5.057	0.010	7318812	1.00	0.8923	
4 Bromide	6.160	6.150	0.010	1296702	1.00	0.9286	
5 Nitrate as N	7.003	6.977	0.026	8251881	1.00	0.8888	
6 Orthophosphate as P	9.350	9.340	0.010	4003921	1.00	1.00	
7 Sulfate	11.033	11.022	0.011	12413305	5.00	4.34	

Reagents:

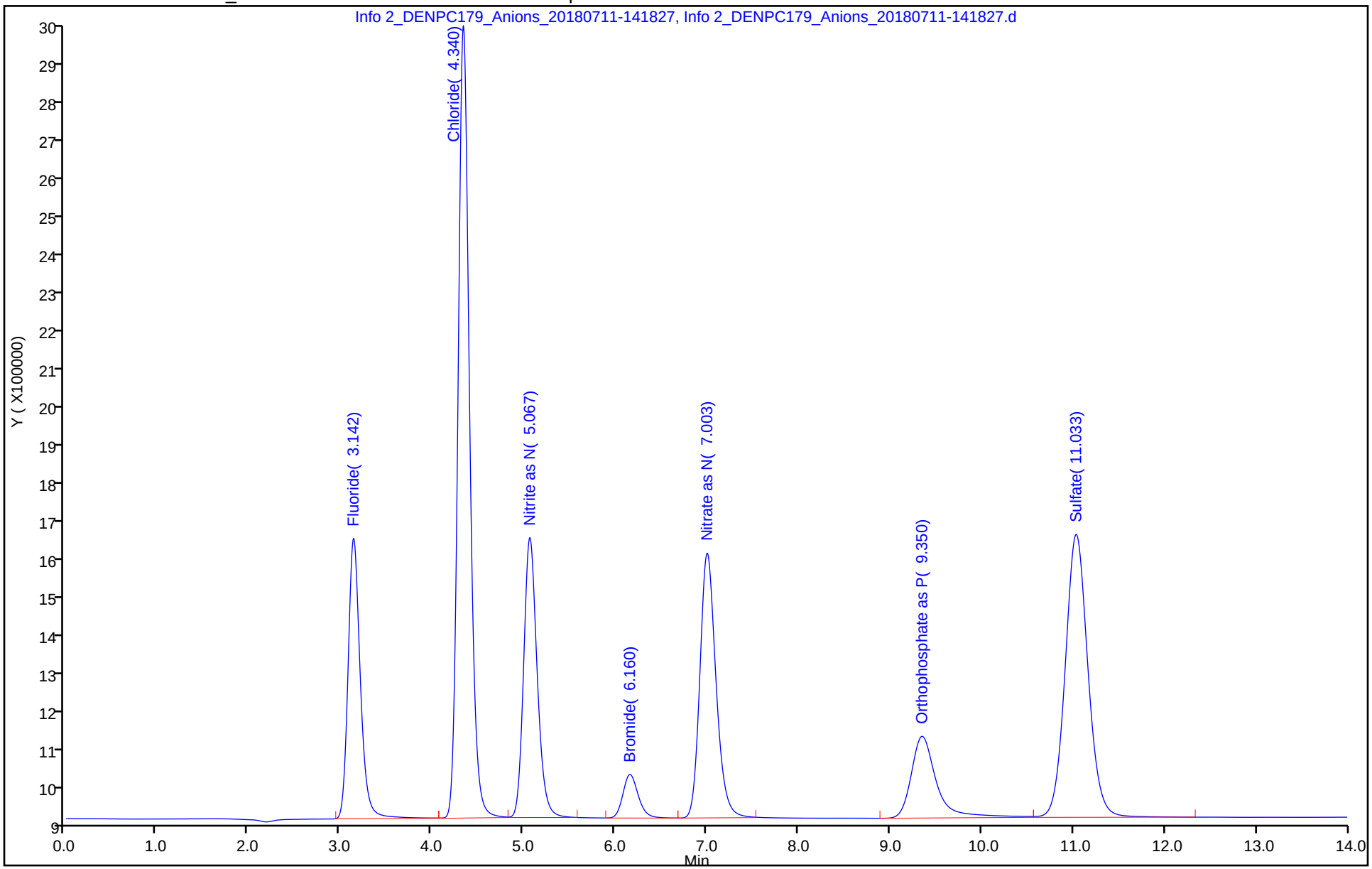
IC CAL cl/so4_00207 Amount Added: 0.20 Units: mL
IC Cal low_00383 Amount Added: 0.20 Units: mL

Report Date: 26-Sep-2018 15:45:25 Chrom Revision: 2.3 19-Jul-2018 15:14:50

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom10\20180711-71867.b\Info 2_DENPC179_Anions_20180711-141827.d

Injection Date:	11-Jul-2018 14:01:00	Instrument ID:	WC_IonChrom10	Operator ID:	wetchemd
Lims ID:	STD3			Worklist Smp#:	4
Client ID:					
Injection Vol:	5.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC10	Limit Group:	Wet - Anions		



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom10\20180711-71867.b\Info 2_DENPC179_Anions_20180711-14
Lims ID: STD4
Client ID:
Sample Type: IC Calib Level: 4
Inject. Date: 11-Jul-2018 14:18:00 ALS Bottle#: 0 Worklist Smp#: 5
Injection Vol: 5.0 ul Dil. Factor: 1.0000
Sample Info: 280-0071867-005
Misc. Info.: 280-0071867-005
Operator ID: wetchemd Instrument ID: WC_IonChrom10
Sublist: chrom-Anions_IC10*sub2

Method: \\ChromNA\Denver\ChromData\WC_IonChrom10\20180711-71867.b\Anions_IC10.m
Limit Group: Wet - Anions
Last Update: 26-Sep-2018 15:45:25 Calib Date: 11-Jul-2018 14:53:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom10\20180711-71867.b\Info 2_DENPC179_Anions_20180711-15

Column 1 : Det: Info 2_091554_1
Process Host: CTX0310

First Level Reviewer: jewellc Date: 11-Jul-2018 15:33:46

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride	3.140	3.140	0.000	28753002	4.00	3.97	
2 Chloride	4.332	4.332	0.000	260487924	60.0	60.1	
3 Nitrite as N	5.057	5.057	0.000	35250266	4.00	3.86	
4 Bromide	6.150	6.150	0.000	5549791	4.00	3.78	
5 Nitrate as N	6.977	6.977	0.000	38620745	4.00	3.81	
6 Orthophosphate as P	9.340	9.340	0.000	14687161	4.00	3.83	
7 Sulfate	11.022	11.022	0.000	190048684	60.0	59.2	

Reagents:

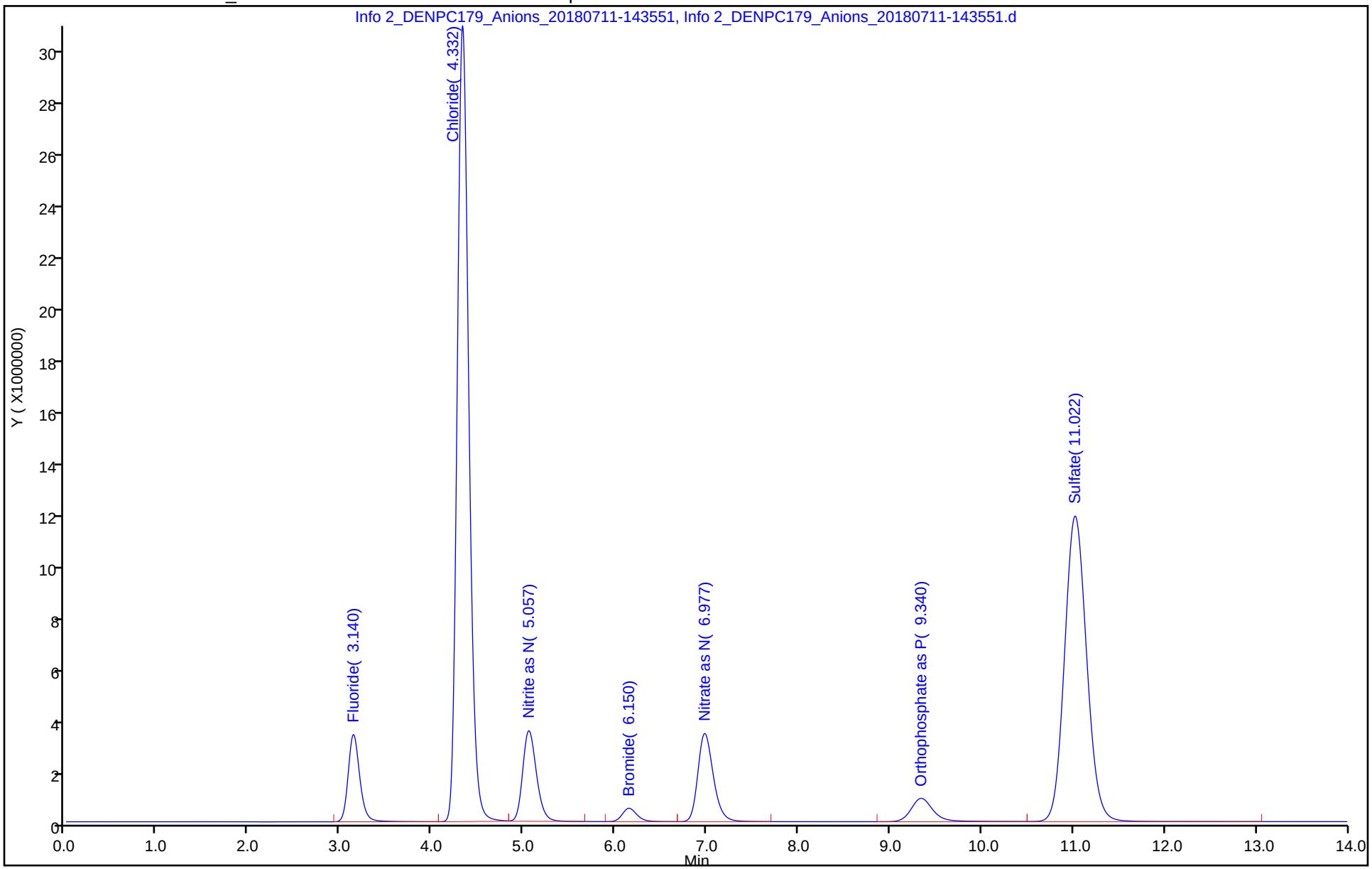
IC CAL cl/so4_00207 Amount Added: 2.40 Units: mL
IC Cal low_00383 Amount Added: 0.80 Units: mL

Report Date: 26-Sep-2018 15:45:26 Chrom Revision: 2.3 19-Jul-2018 15:14:50

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom10\20180711-71867.b\Info 2_DENPC179_Anions_20180711-143551.d

Injection Date:	11-Jul-2018 14:18:00	Instrument ID:	WC_IonChrom10	Operator ID:	wetchemd
Lims ID:	STD4			Worklist Smp#:	5
Client ID:					
Injection Vol:	5.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC10	Limit Group:	Wet - Anions		



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom10\20180711-71867.b\Info 2_DENPC179_Anions_20180711-14
Lims ID: STD5
Client ID:
Sample Type: IC Calib Level: 5
Inject. Date: 11-Jul-2018 14:35:00 ALS Bottle#: 0 Worklist Smp#: 6
Injection Vol: 5.0 ul Dil. Factor: 1.0000
Sample Info: 280-0071867-006
Misc. Info.: 280-0071867-006
Operator ID: wetchemd Instrument ID: WC_IonChrom10
Sublist: chrom-Anions_IC10*sub2

Method: \\ChromNA\Denver\ChromData\WC_IonChrom10\20180711-71867.b\Anions_IC10.m
Limit Group: Wet - Anions
Last Update: 26-Sep-2018 15:45:26 Calib Date: 11-Jul-2018 14:53:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom10\20180711-71867.b\Info 2_DENPC179_Anions_20180711-15

Column 1 : Det: Info 2_091554_1
Process Host: CTX0310

First Level Reviewer: jewellc Date: 11-Jul-2018 15:33:54

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride	3.143	3.140	0.003	58398471	8.00	7.99	
2 Chloride	4.332	4.332	0.000	521412653	120.0	119.9	
3 Nitrite as N	5.048	5.057	-0.009	74213950	8.00	8.00	
4 Bromide	6.145	6.150	-0.005	11817357	8.00	7.98	
5 Nitrate as N	6.962	6.977	-0.015	82459808	8.00	8.03	
6 Orthophosphate as P	9.340	9.340	0.000	30170312	8.00	7.93	
7 Sulfate	11.015	11.022	-0.007	385728970	120.0	119.7	

Reagents:

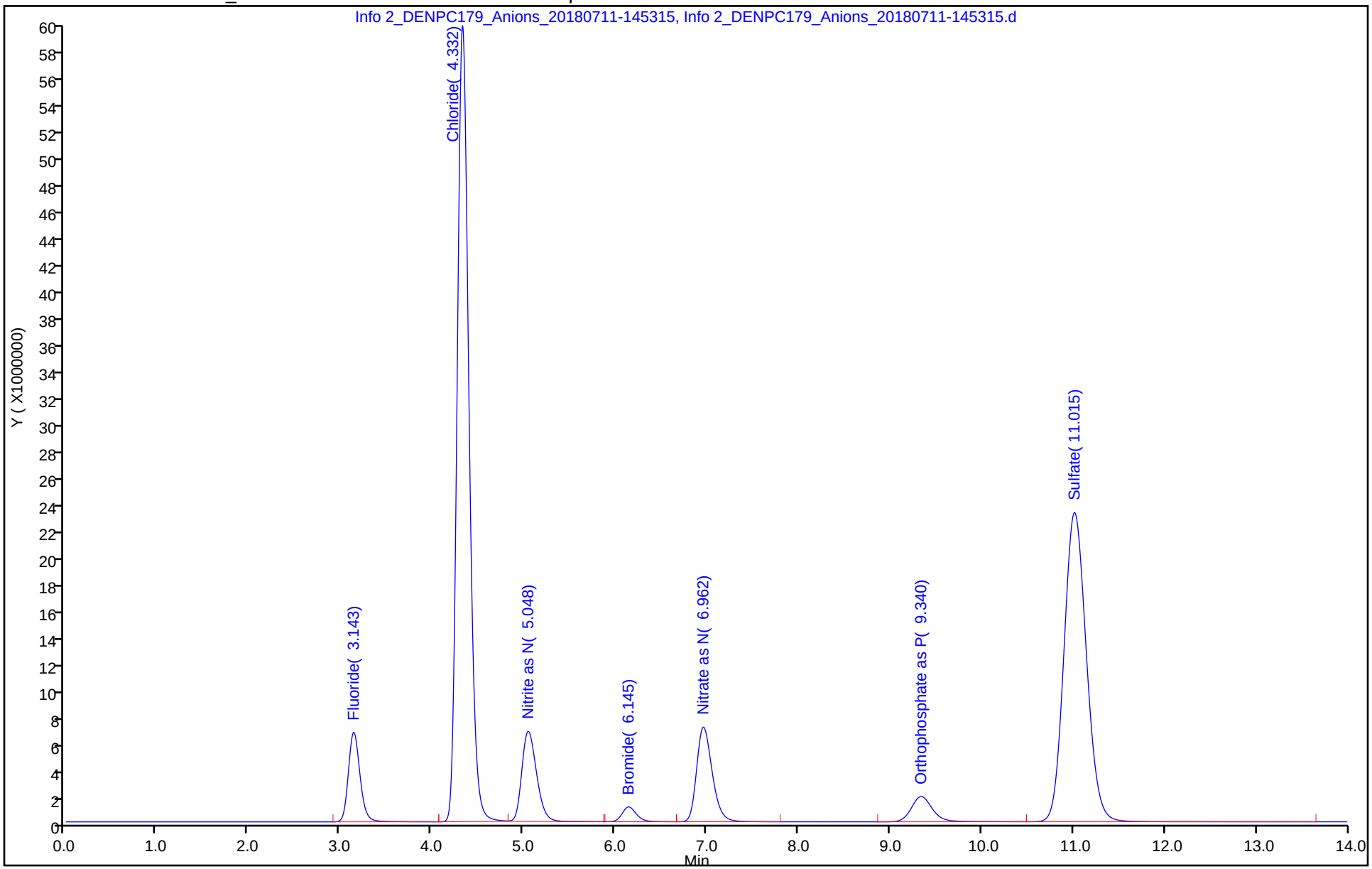
IC CAL cl/so4_00207 Amount Added: 4.80 Units: mL
IC Cal low_00383 Amount Added: 1.60 Units: mL

Report Date: 26-Sep-2018 15:45:27 Chrom Revision: 2.3 19-Jul-2018 15:14:50

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom10\20180711-71867.b\Info 2_DENPC179_Anions_20180711-145315.d

Injection Date:	11-Jul-2018 14:35:00	Instrument ID:	WC_IonChrom10	Operator ID:	wetchemd
Lims ID:	STD5			Worklist Smp#:	6
Client ID:					
Injection Vol:	5.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC10	Limit Group:	Wet - Anions		



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom10\20180711-71867.b\Info 2_DENPC179_Anions_20180711-15
Lims ID: STD6
Client ID:
Sample Type: IC Calib Level: 6
Inject. Date: 11-Jul-2018 14:53:00 ALS Bottle#: 0 Worklist Smp#: 7
Injection Vol: 5.0 ul Dil. Factor: 1.0000
Sample Info: 280-0071867-007
Misc. Info.: 280-0071867-007
Operator ID: wetchemd Instrument ID: WC_IonChrom10
Sublist: chrom-Anions_IC10*sub2

Method: \\ChromNA\Denver\ChromData\WC_IonChrom10\20180711-71867.b\Anions_IC10.m
Limit Group: Wet - Anions
Last Update: 26-Sep-2018 15:45:27 Calib Date: 11-Jul-2018 14:53:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom10\20180711-71867.b\Info 2_DENPC179_Anions_20180711-15

Column 1 : Det: Info 2_091554_1
Process Host: CTX0310

First Level Reviewer: jewellc Date: 11-Jul-2018 15:34:03

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride	3.142	3.140	0.002	73657289	10.0	10.1	
2 Chloride	4.330	4.332	-0.002	873623479	200.0	200.5	
3 Nitrite as N	5.045	5.057	-0.012	95277743	10.0	10.2	
4 Bromide	6.143	6.150	-0.007	15275242	10.0	10.3	
5 Nitrate as N	6.957	6.977	-0.020	105629956	10.0	10.3	
6 Orthophosphate as P	9.338	9.340	-0.002	38846009	10.0	10.2	
7 Sulfate	11.002	11.022	-0.020	651010795	200.0	201.7	

Reagents:

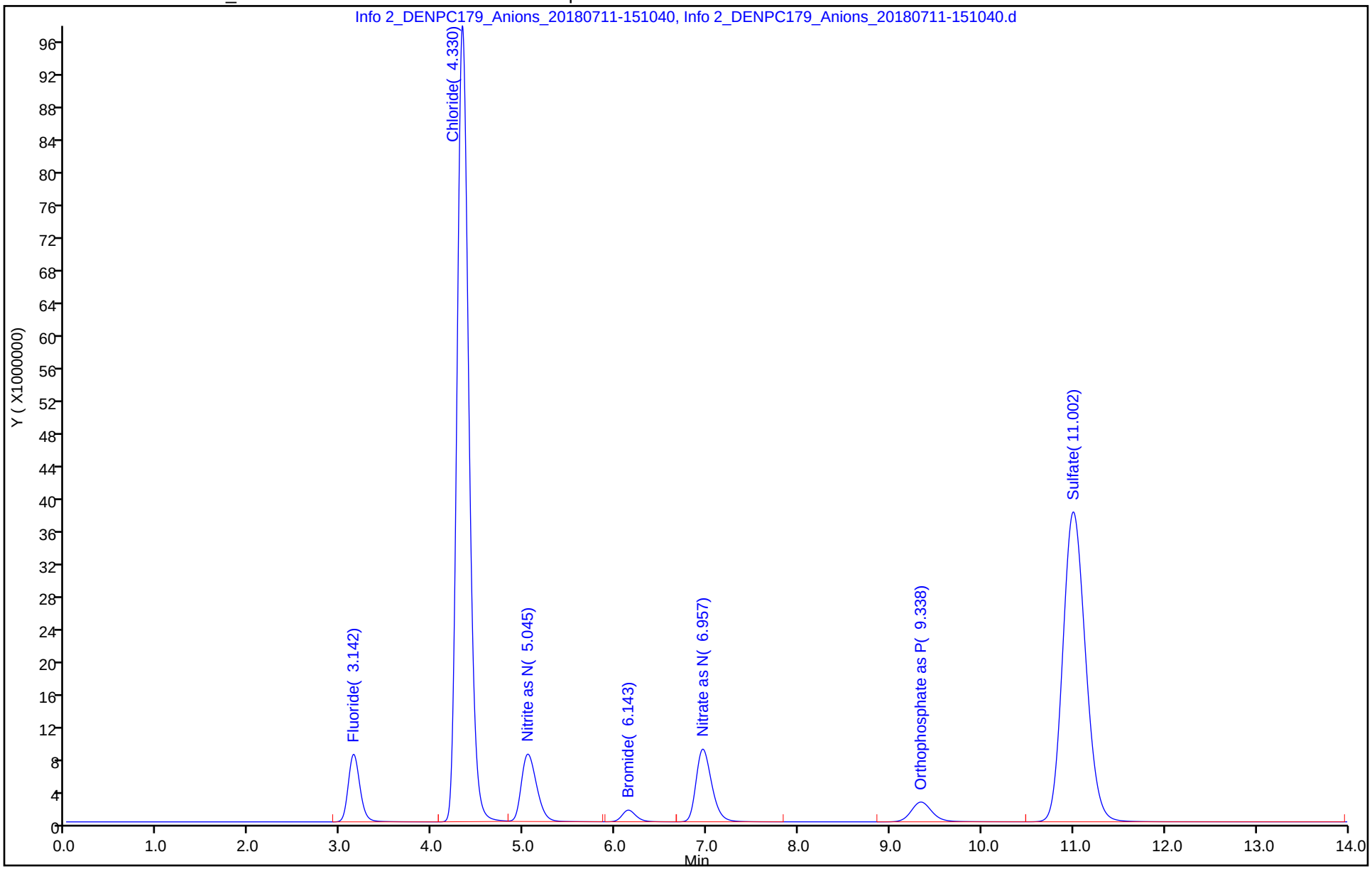
IC CAL cl/so4_00207 Amount Added: 8.00 Units: mL
IC Cal low_00383 Amount Added: 2.00 Units: mL

Report Date: 26-Sep-2018 15:45:27 Chrom Revision: 2.3 19-Jul-2018 15:14:50

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom10\20180711-71867.b\Info 2_DENPC179_Anions_20180711-151040.d

Injection Date:	11-Jul-2018 14:53:00	Instrument ID:	WC_IonChrom10	Operator ID:	wetchemd
Lims ID:	STD6			Worklist Smp#:	7
Client ID:					
Injection Vol:	5.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC10	Limit Group:	Wet - Anions		



TestAmerica Denver · New cal. TestAmerica

421777/ 421778

IC Instrument Information

WL: 711867 **Inst ID:** 10 **Analysis Date:** 07/11/18 **Analyst:** H

Rush	Job No.	Samples	Anions	QC Req	HT Exp
☐	111798	5	F Cl NO2 Br NO3 PO4 SO4	MS/D 2	
☐	111793	4	F Cl NO2 Br NO3 PO4 SO4	MS/D	
☐	111840	2	F Cl NO2 Br NO3 PO4 SO4	MS/D 1	
FB ⇨	111806	1	F Cl NO2 Br NO3 PO4 SO4	MS/D	
☐	111005	7	F Cl NO2 Br NO3 PO4 SO4	MS/D	
☐	111271	1	F Cl NO2 Br NO3 PO4 SO4	MS/D	
☐			F Cl NO2 Br NO3 PO4 SO4	MS/D	
☐			F Cl NO2 Br NO3 PO4 SO4	MS/D	
☐			F Cl NO2 Br NO3 PO4 SO4	MS/D	
☐			F Cl NO2 Br NO3 PO4 SO4	MS/D	
☐			F Cl NO2 Br NO3 PO4 SO4	MS/D	
☐			F Cl NO2 Br NO3 PO4 SO4	MS/D	
☐			F Cl NO2 Br NO3 PO4 SO4	MS/D	
☐			F Cl NO2 Br NO3 PO4 SO4	MS/D	

Dilutions

Job No.	Samples	Anions	Dilution	Reason
111005	1, 2	F Cl NO2 Br NO3 PO4 SO4	50x	deep purple color
111005	7	F Cl NO2 Br NO3 PO4 SO4	10x	purple "
111005	6	F Cl NO2 Br NO3 PO4 SO4	5x	brown color
		F Cl NO2 Br NO3 PO4 SO4		
		F Cl NO2 Br NO3 PO4 SO4		
		F Cl NO2 Br NO3 PO4 SO4		
		F Cl NO2 Br NO3 PO4 SO4		
		F Cl NO2 Br NO3 PO4 SO4		
		F Cl NO2 Br NO3 PO4 SO4		

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Rev. 1, 8/11/2014

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Paniya R. 7/13/18

IC Instrument Information

WL: 71867 **Inst ID:** 10 **Analysis Date:** 07/11/18 **Analyst:** JJ

Rush	Job No.	Samples	Anions	QC Req	HT Exp
□	111798	5	F Cl (NO2) Br (NO3) PO4 SO4	(MS/D) 2	
□	111793	4	F (Cl) NO2 Br (NO3) PO4 (SO4)	MS/D	
□	111840	2	F Cl NO2 Br (NO3) PO4 (SO4)	(MS/D) 1	
FB ⇨	111806	1	F (Cl) NO2 Br NO3 PO4 (SO4)	MS/D	
□	111005	7	F (Cl) NO2 Br NO3 PO4 SO4	MS/D	
□	111271	1	F (Cl) NO2 (Br) NO3 PO4 (SO4)	MS/D	
□			F Cl NO2 Br NO3 PO4 SO4	MS/D	
□			F Cl NO2 Br NO3 PO4 SO4	MS/D	
□			F Cl NO2 Br NO3 PO4 SO4	MS/D	
□			F Cl NO2 Br NO3 PO4 SO4	MS/D	
□			F Cl NO2 Br NO3 PO4 SO4	MS/D	
□			F Cl NO2 Br NO3 PO4 SO4	MS/D	
□			F Cl NO2 Br NO3 PO4 SO4	MS/D	
□			F Cl NO2 Br NO3 PO4 SO4	MS/D	

Dilutions

Job No.	Samples	Anions	Dilution	Reason
111005	1, 2	F (Cl) NO2 Br NO3 PO4 SO4	50x	deep purple color
111005	7	F (Cl) NO2 Br NO3 PO4 SO4	10x	purple "
111005	6	F (Cl) NO2 Br NO3 PO4 SO4	5x	brown color
		F Cl NO2 Br NO3 PO4 SO4		
		F Cl NO2 Br NO3 PO4 SO4		
		F Cl NO2 Br NO3 PO4 SO4		
		F Cl NO2 Br NO3 PO4 SO4		
		F Cl NO2 Br NO3 PO4 SO4		
		F Cl NO2 Br NO3 PO4 SO4		

TestAmerica Laboratories
Initial Calibration Summary Report

Method: \\ChromNA\Denver\ChromData\WC_IonChrom10\20180711-71867.b\Anions_IC10.m

Instrument:	WC_IonChrom10	Lims Location:	280
Lock State:	Unlocked	Cpnd Order:	Retention Time
Integrator:	Falcon	Last Modified:	11-Jul-2018 15:28:42

No.Compounds:7

Initial Calibration Batches

Ical Batch: \\ChromNA\Denver\ChromData\WC_IonChrom10\20180711-71867.b
Inj Date : 11-Jul-2018 13:26:00, Sublist: chrom-Anions_IC10*sub2

Detector 1: Info 2_091554_1

	Wet - Anions 28D				Wet - Anions			
Compound	b	M1	M2	Err	b	M1	M2	Err
1 Fluoride	-477743	736502C		1.000	-477743	736502C		1.000
2 Chloride	-197482	436636E		1.000	-197482	436636E		1.000
3 Nitrite as N	-107514	940682C		0.998	-107514	940682C		0.998
4 Bromide	-88272	149151E		0.998	-88272	149151E		0.998
5 Nitrate as N	-981872	1038954		0.998	-981872	1038954		0.998
6 Orthophosphate as P	247146	377409C		0.999	247146	377409C		0.999
7 Sulfate	-164664	323609E		1.000	-164664	323609E		1.000

Panida R.
7/13/18

TestAmerica Laboratories
Initial Calibration Summary Report

Method: \\ChromNA\Denver\ChromData\WC_IonChrom10\20180711-71867.b\Anions_IC10.m

Instrument:	WC_IonChrom10	Lims Location:	280
Lock State:	Unlocked	Cpnd Order:	Retention Time
Integrator:	Falcon	Last Modified:	11-Jul-2018 15:28:42

No.Compounds:7

Initial Calibration Batches

Ical Batch: \\ChromNA\Denver\ChromData\WC_IonChrom10\20180711-71867.b
Inj Date : 11-Jul-2018 13:26:00, Sublist: chrom-Anions_IC10*sub2

Detector 1: Info 2_091554_1

	Wet - Anions 28D				Wet - Anions			
Compound	b	M1	M2	Err	b	M1	M2	Err
1 Fluoride	-477743	736502C		1.000	-477743	736502C		1.000
2 Chloride	-197482	436636€		1.000	-197482	436636€		1.000
3 Nitrite as N	-107514	940682C		0.998	-107514	940682C		0.998
4 Bromide	-88272	1491516		0.998	-88272	1491516		0.998
5 Nitrate as N	-981872	1038954		0.998	-981872	1038954		0.998
6 Orthophosphate as P	247146	377409C		0.999	247146	377409C		0.999
7 Sulfate	-164664	323609€		1.000	-164664	323609€		1.000

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom10\20180711-71867.b\Info 2_DENPC179_Anions_20180711-16
Lims ID: ICV
Client ID:
Sample Type: ICV
Inject. Date: 11-Jul-2018 15:50:00 ALS Bottle#: 0 Worklist Smp#: 10
Injection Vol: 5.0 ul Dil. Factor: 1.0000
Sample Info: 280-0071867-010
Misc. Info.: 280-0071867-010
Operator ID: wetchemd Instrument ID: WC_IonChrom10
Sublist:

Method: \\ChromNA\Denver\ChromData\WC_IonChrom10\20180711-71867.b\Anions_IC10.m
Limit Group: Wet - Anions
Last Update: 12-Jul-2018 07:08:11 Calib Date: 11-Jul-2018 14:53:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom10\20180711-71867.b\Info 2_DENPC179_Anions_20180711-15

Column 1 : Det: Info 2_091554_1
Process Host: CTX0302

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride	3.142	3.142	0.000	29598667	4.00	4.08	
2 Chloride	4.333	4.333	0.000	344389251	80.0	79.3	
3 Nitrite as N	5.058	5.058	0.000	34506740	4.00	3.78	
4 Bromide	6.152	6.152	0.000	5714691	4.00	3.89	
5 Nitrate as N	6.980	6.980	0.000	38807687	4.00	3.83	
6 Orthophosphate as P	9.345	9.345	0.000	15209494	4.00	3.96	
7 Sulfate	11.023	11.023	0.000	251832060	80.0	78.3	

Reagents:

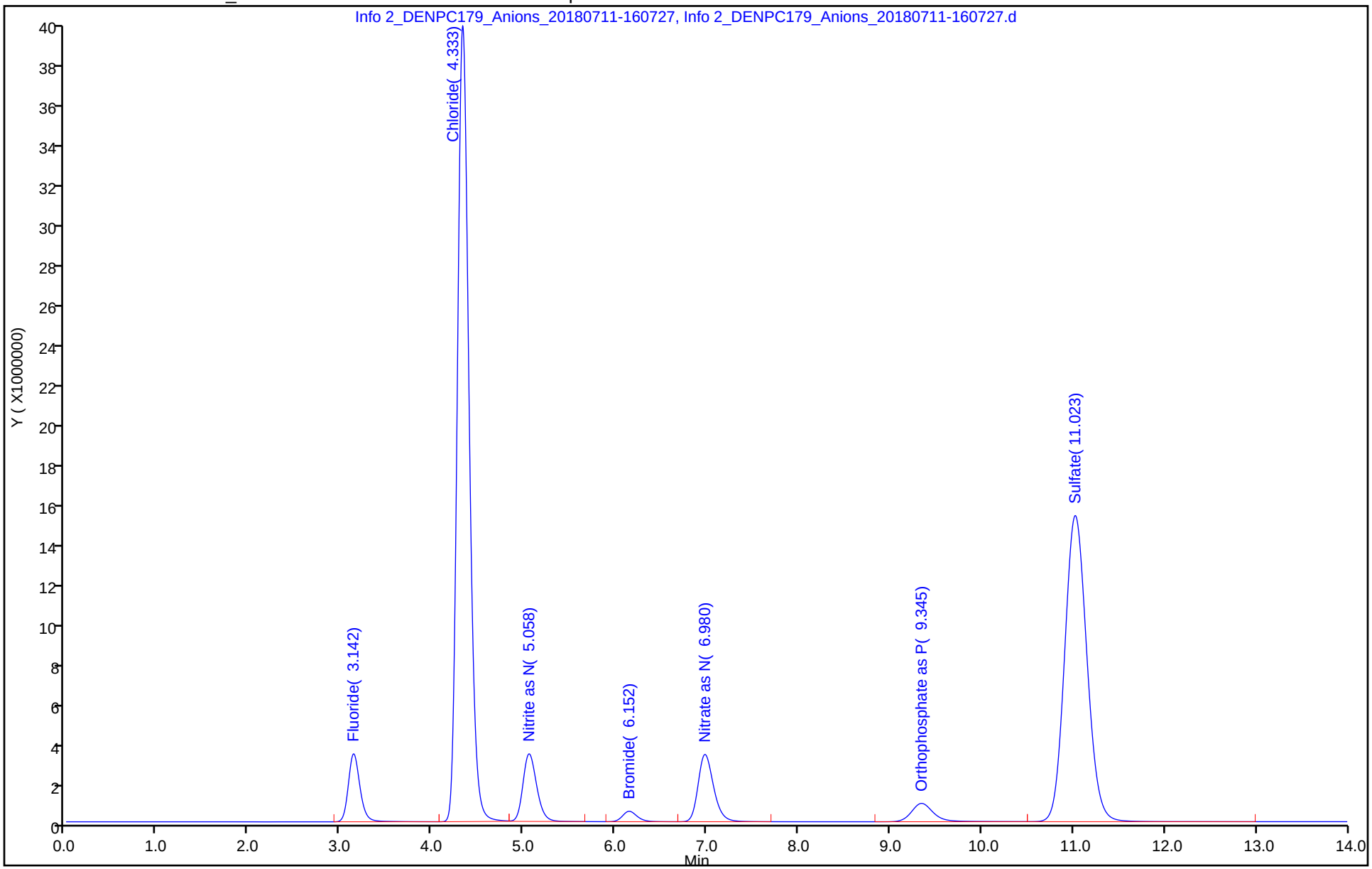
IC ICV 5_00204	Amount Added:	0.80	Units: mL
IC CL ICV_00014	Amount Added:	0.80	Units: mL
IC SO4 ICV_00017	Amount Added:	0.80	Units: mL

Report Date: 12-Jul-2018 07:08:12 Chrom Revision: 2.2 07-Jun-2018 07:41:54

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom10\20180711-71867.b\Info 2_DENPC179_Anions_20180711-160727.d

Injection Date:	11-Jul-2018 15:50:00	Instrument ID:	WC_IonChrom10	Operator ID:	wetchemd
Lims ID:	ICV			Worklist Smp#:	10
Client ID:					
Injection Vol:	5.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC10	Limit Group:	Wet - Anions		



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom10\20180711-71867.b\Info 2_DENPC179_Anions_20180711-16
Lims ID: ICB
Client ID:
Sample Type: ICB
Inject. Date: 11-Jul-2018 16:07:00 ALS Bottle#: 0 Worklist Smp#: 11
Injection Vol: 5.0 ul Dil. Factor: 1.0000
Sample Info: 280-0071867-011
Misc. Info.: 280-0071867-011
Operator ID: wetchemd Instrument ID: WC_IonChrom10

Method: \\ChromNA\Denver\ChromData\WC_IonChrom10\20180711-71867.b\Anions_IC10.m
Limit Group: Wet - Anions
Last Update: 12-Jul-2018 07:08:11 Calib Date: 11-Jul-2018 14:53:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom10\20180711-71867.b\Info 2_DENPC179_Anions_20180711-15

Column 1 : Det: Info 2_091554_1
Process Host: CTX0302

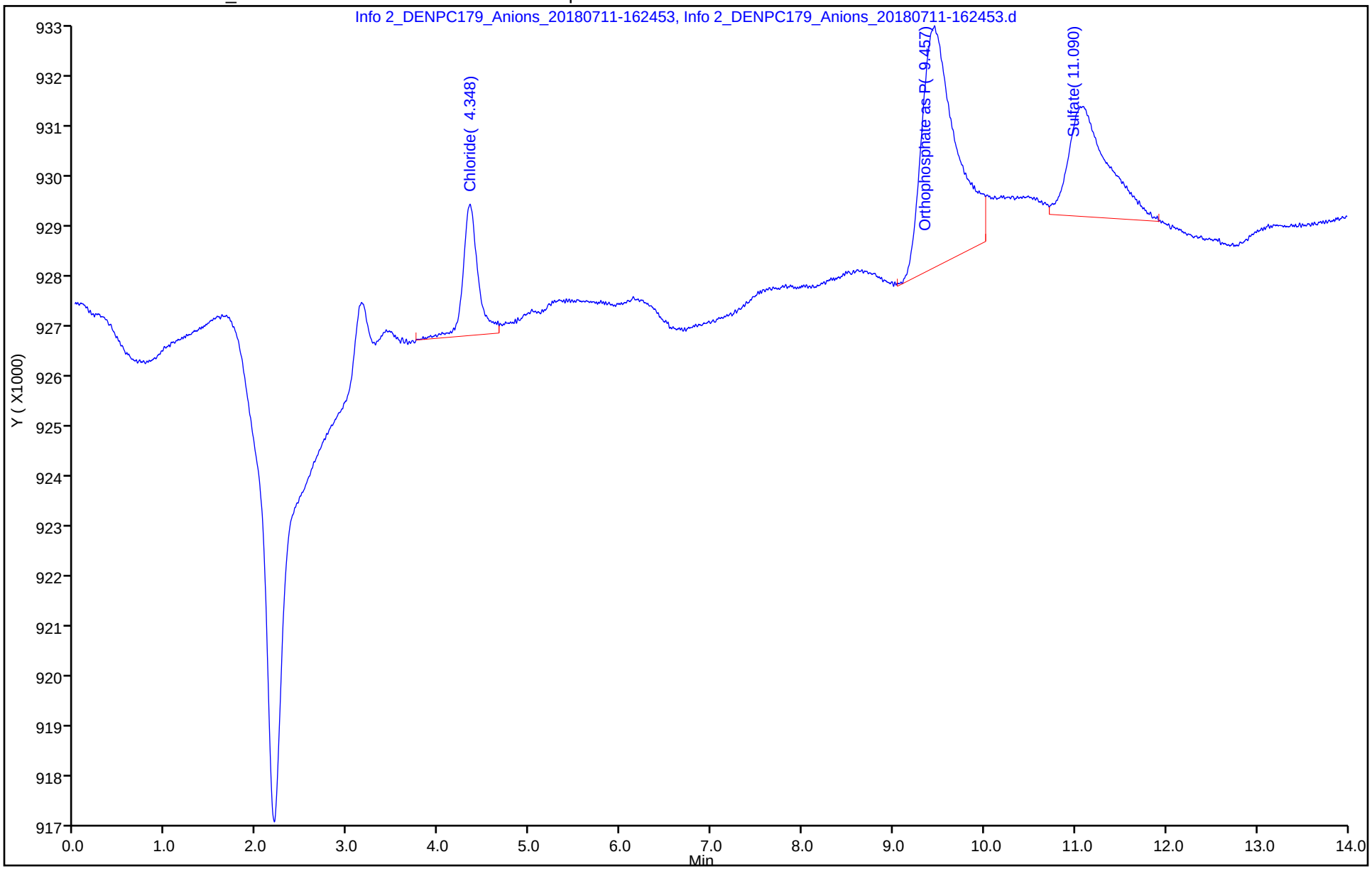
Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride		3.142				ND	
2 Chloride	4.348	4.333	0.015	27772		0.4586	
3 Nitrite as N		5.058				ND	
4 Bromide		6.152				ND	
5 Nitrate as N		6.980				ND	
6 Orthophosphate as P	9.457	9.345	0.112	113510		-0.0354	
7 Sulfate	11.090	11.023	0.067	60715		0.5276	

Report Date: 12-Jul-2018 07:08:12 Chrom Revision: 2.2 07-Jun-2018 07:41:54

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom10\20180711-71867.b\Info 2_DENPC179_Anions_20180711-162453.d

Injection Date:	11-Jul-2018 16:07:00	Instrument ID:	WC_IonChrom10	Operator ID:	wetchemd
Lims ID:	ICB			Worklist Smp#:	11
Client ID:					
Injection Vol:	5.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC10	Limit Group:	Wet - Anions		



IC Instrument Information

WL: 72172 **Inst ID:** 10 **Analysis Date:** 07/20/18 **Analyst:** TI

Rush	Job No.	Samples	Anions	QC Req	HT Exp
☐	112234*	7	F Cl (NO2) Br (NO3) PO4 SO4	(MS/D) 7	
☐	112259	2	F (Cl) NO2 Br (NO3) PO4 (SO4)	(MS/D) 2	Client
☐	112262*	3	F Cl NO2 Br (NO3) PO4 (SO4)	MS/D	
☐	111604	1	F (Cl) NO2 Br NO3 PO4 (SO4)	MS/D	
☐	111462*	1	(F) (Cl) NO2 Br NO3 PO4 (SO4)	MS/D	
☐	111468	1	F (Cl) NO2 Br NO3 PO4 (SO4)	MS/D	
☐			F Cl NO2 Br NO3 PO4 SO4	MS/D	
☐			F Cl NO2 Br NO3 PO4 SO4	MS/D	
☐			F Cl NO2 Br NO3 PO4 SO4	MS/D	
☐			F Cl NO2 Br NO3 PO4 SO4	MS/D	
☐			F Cl NO2 Br NO3 PO4 SO4	MS/D	
☐			F Cl NO2 Br NO3 PO4 SO4	MS/D	
☐			F Cl NO2 Br NO3 PO4 SO4	MS/D	
☐			F Cl NO2 Br NO3 PO4 SO4	MS/D	

Dilutions

Job No.	Samples	Anions	Dilution	Reason
✓ 112259	3	F (Cl) NO2 Br (NO3) PO4 (SO4)	10x	Oily orange sample
111642	1	(F) (Cl) NO2 Br NO3 PO4 (SO4)	50x	black sample
		F Cl NO2 Br NO3 PO4 SO4		
		F Cl NO2 Br NO3 PO4 SO4		
		F Cl NO2 Br NO3 PO4 SO4		
		F Cl NO2 Br NO3 PO4 SO4		
		F Cl NO2 Br NO3 PO4 SO4		
		F Cl NO2 Br NO3 PO4 SO4		
		F Cl NO2 Br NO3 PO4 SO4		

423024 / 423025

IC Instrument Information

WL: 72172 **Inst ID:** 10 **Analysis Date:** 07/20/18 **Analyst:** TR

Rush	Job No.	Samples	Anions	QC Req	HT Exp
☐	112234	7	F Cl (NO2) Br (NO3) PO4 SO4	(MS/D) 7	
☐	112259	2	F (Cl) NO2 Br (NO3) PO4 (SO4)	(MS/D) 2	client
☐	112262	3	F Cl NO2 Br (NO3) PO4 (SO4)	MS/D	
☐	111604	1	F (Cl) NO2 Br NO3 PO4 (SO4)	MS/D	
☐	111462	1	(F) (Cl) NO2 Br NO3 PO4 (SO4)	MS/D	
☐	111468	1	F (Cl) NO2 Br NO3 PO4 (SO4)	MS/D	
☐			F Cl NO2 Br NO3 PO4 SO4	MS/D	
☐			F Cl NO2 Br NO3 PO4 SO4	MS/D	
☐			F Cl NO2 Br NO3 PO4 SO4	MS/D	
☐			F Cl NO2 Br NO3 PO4 SO4	MS/D	
☐			F Cl NO2 Br NO3 PO4 SO4	MS/D	
☐			F Cl NO2 Br NO3 PO4 SO4	MS/D	
☐			F Cl NO2 Br NO3 PO4 SO4	MS/D	
☐			F Cl NO2 Br NO3 PO4 SO4	MS/D	

Dilutions

Job No.	Samples	Anions	Dilution	Reason
✓ 112259	3	F (Cl) NO2 Br (NO3) PO4 (SO4)	10x	oily orange sample
111642	1	(F) (Cl) NO2 Br NO3 PO4 (SO4)	50x	black sample
		F Cl NO2 Br NO3 PO4 SO4		
		F Cl NO2 Br NO3 PO4 SO4		
		F Cl NO2 Br NO3 PO4 SO4		
		F Cl NO2 Br NO3 PO4 SO4		
		F Cl NO2 Br NO3 PO4 SO4		
		F Cl NO2 Br NO3 PO4 SO4		
		F Cl NO2 Br NO3 PO4 SO4		

21
9

Panida R
7/24/18

TestAmerica Laboratories
Initial Calibration Summary Report

Method: \\ChromNA\Denver\ChromData\WC_IonChrom10\20180716-72003.b\Anions_IC10.m
Instrument: WC_IonChrom10 Lims Location: 280
Lock State: Initial Calib Locked Cpnd Order: Retention Time
Integrator: Falcon Last Modified: 17-Jul-2018 16:49:45
No.Compounds:7

Initial Calibration Batches

Ical Batch: \\ChromNA\Denver\ChromData\WC_IonChrom10\20180711-71867.b
Inj Date : 11-Jul-2018 13:26:00, Sublist: chrom-Anions_IC10*sub2

Detector 1: Info 2_091554_1

	Wet - Anions 28D				Wet - Anions			
Compound	b	M1	M2	Err	b	M1	M2	Err
1 Fluoride	-477743	736502C		1.000	-477743	736502C		1.000
2 Chloride	-197482	436636E		1.000	-197482	436636E		1.000
3 Nitrite as N	-107514	940682C		0.998	-107514	940682C		0.998
4 Bromide	-88272	1491516		0.998	-88272	1491516		0.998
5 Nitrate as N	-981872	1038954		0.998	-981872	1038954		0.998
6 Orthophosphate as P	247146	377409C		0.999	247146	377409C		0.999
7 Sulfate	-164664	323609E		1.000	-164664	323609E		1.000

Panida R.
7/24/18

TestAmerica Laboratories
Initial Calibration Summary Report

Method: \\ChromNA\Denver\ChromData\WC_IonChrom10\20180716-72003.b\Anions_IC10.m
Instrument: WC_IonChrom10 Lims Location: 280
Lock State: Initial Calib Locked Cpnd Order: Retention Time
Integrator: Falcon Last Modified: 17-Jul-2018 16:49:45
No.Compounds:7

Initial Calibration Batches

Ical Batch: \\ChromNA\Denver\ChromData\WC_IonChrom10\20180711-71867.b
Inj Date : 11-Jul-2018 13:26:00, Sublist: chrom-Anions_IC10*sub2

Detector 1: Info 2_091554_1

	Wet - Anions 28D				Wet - Anions			
Compound	b	M1	M2	Err	b	M1	M2	Err
1 Fluoride	-477743	736502C		1.000	-477743	736502C		1.000
2 Chloride	-197482	436636E		1.000	-197482	436636E		1.000
3 Nitrite as N	-107514	940682C		0.998	-107514	940682C		0.998
4 Bromide	-88272	1491516		0.998	-88272	1491516		0.998
5 Nitrate as N	-981872	1038954		0.998	-981872	1038954		0.998
6 Orthophosphate as P	247146	377409C		0.999	247146	377409C		0.999
7 Sulfate	-164664	323609E		1.000	-164664	323609E		1.000

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom10\20180720-72172.b\Info 2_DENPC179_Anions_20180720-13
Lims ID: CCV
Client ID:
Sample Type: CCV
Inject. Date: 20-Jul-2018 13:27:00 ALS Bottle#: 0 Worklist Smp#: 1
Injection Vol: 5.0 ul Dil. Factor: 1.0000
Sample Info: 280-0072172-001
Misc. Info.: 280-0072172-001
Operator ID: wetchemd Instrument ID: WC_IonChrom10
Sublist: chrom-Anions_IC10*sub2

Method: \\ChromNA\Denver\ChromData\WC_IonChrom10\20180720-72172.b\Anions_IC10.m
Limit Group: Wet - Anions
Last Update: 23-Jul-2018 09:30:25 Calib Date: 11-Jul-2018 14:53:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom10\20180711-71867.b\Info 2_DENPC179_Anions_20180711-15

Column 1 : Det: Info 2_091554_1
Process Host: CTX0306

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride	3.112	3.142	-0.030	34702518	5.00	4.78	
2 Chloride	4.282	4.333	-0.051	431231628	100.0	99.2	
3 Nitrite as N	4.980	5.058	-0.078	43536939	5.00	4.74	
4 Bromide	6.038	6.152	-0.114	6979830	5.00	4.74	
5 Nitrate as N	6.833	6.980	-0.147	49596722	5.00	4.87	
6 Orthophosphate as P	9.225	9.345	-0.120	19263468	5.00	5.04	
7 Sulfate	10.608	11.023	-0.415	316034248	100.0	98.2	

Reagents:

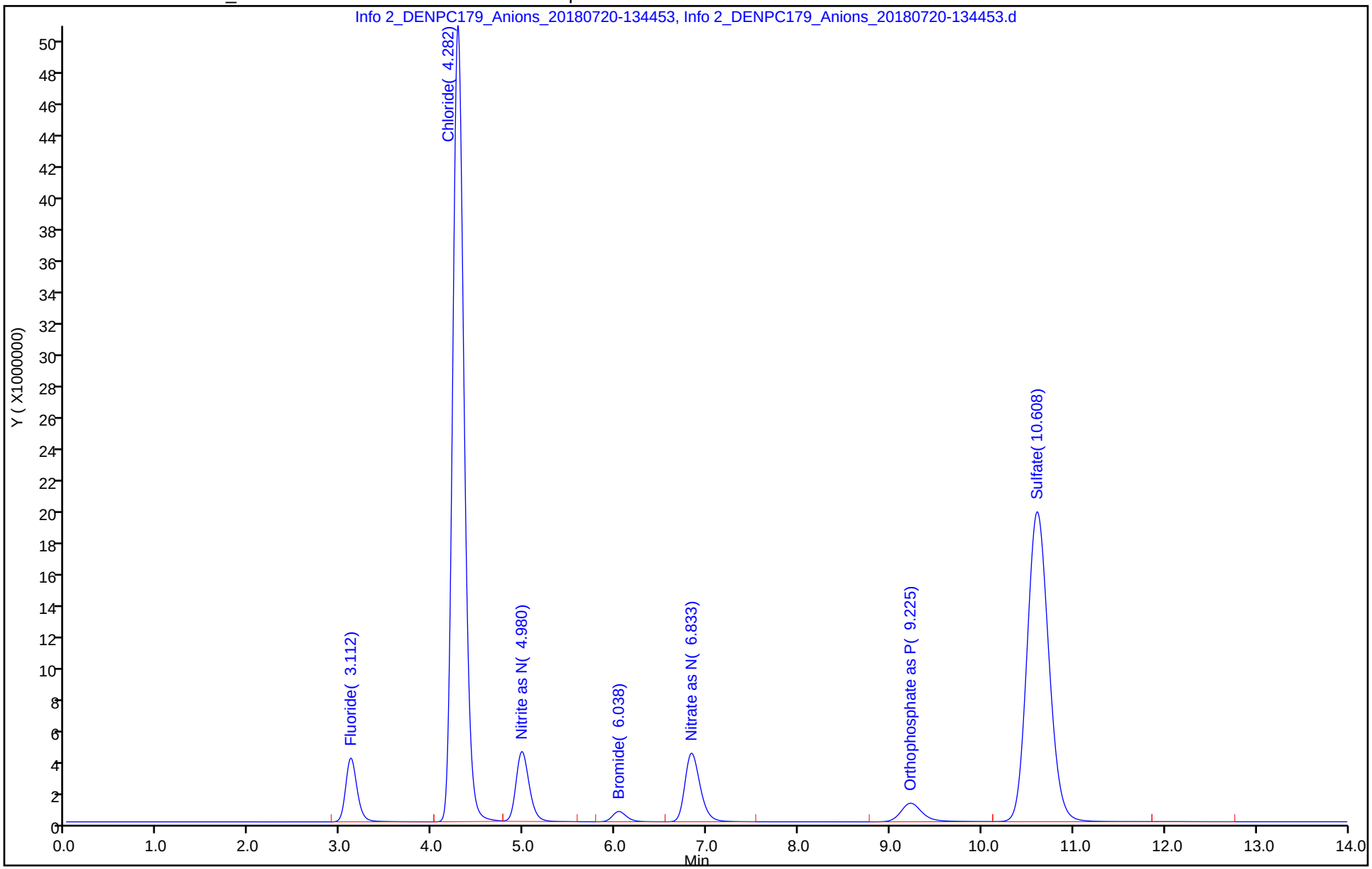
IC LCS_01288 Amount Added: 10.00 Units: mL

Report Date: 23-Jul-2018 09:30:25 Chrom Revision: 2.3 19-Jul-2018 15:14:50

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom10\20180720-72172.b\Info 2_DENPC179_Anions_20180720-134453.d

Injection Date:	20-Jul-2018 13:27:00	Instrument ID:	WC_IonChrom10	Operator ID:	wetchemd
Lims ID:	CCV			Worklist Smp#:	1
Client ID:					
Injection Vol:	5.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC10	Limit Group:	Wet - Anions		



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom10\20180720-72172.b\Info 2_DENPC179_Anions_20180720-14
Lims ID: CCB
Client ID:
Sample Type: CCB
Inject. Date: 20-Jul-2018 13:44:00 ALS Bottle#: 0 Worklist Smp#: 2
Injection Vol: 5.0 ul Dil. Factor: 1.0000
Sample Info: 280-0072172-002
Misc. Info.: 280-0072172-002
Operator ID: wetchemd Instrument ID: WC_IonChrom10

Method: \\ChromNA\Denver\ChromData\WC_IonChrom10\20180720-72172.b\Anions_IC10.m
Limit Group: Wet - Anions
Last Update: 23-Jul-2018 09:30:25 Calib Date: 11-Jul-2018 14:53:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom10\20180711-71867.b\Info 2_DENPC179_Anions_20180711-15

Column 1 : Det: Info 2_091554_1
Process Host: CTX0306

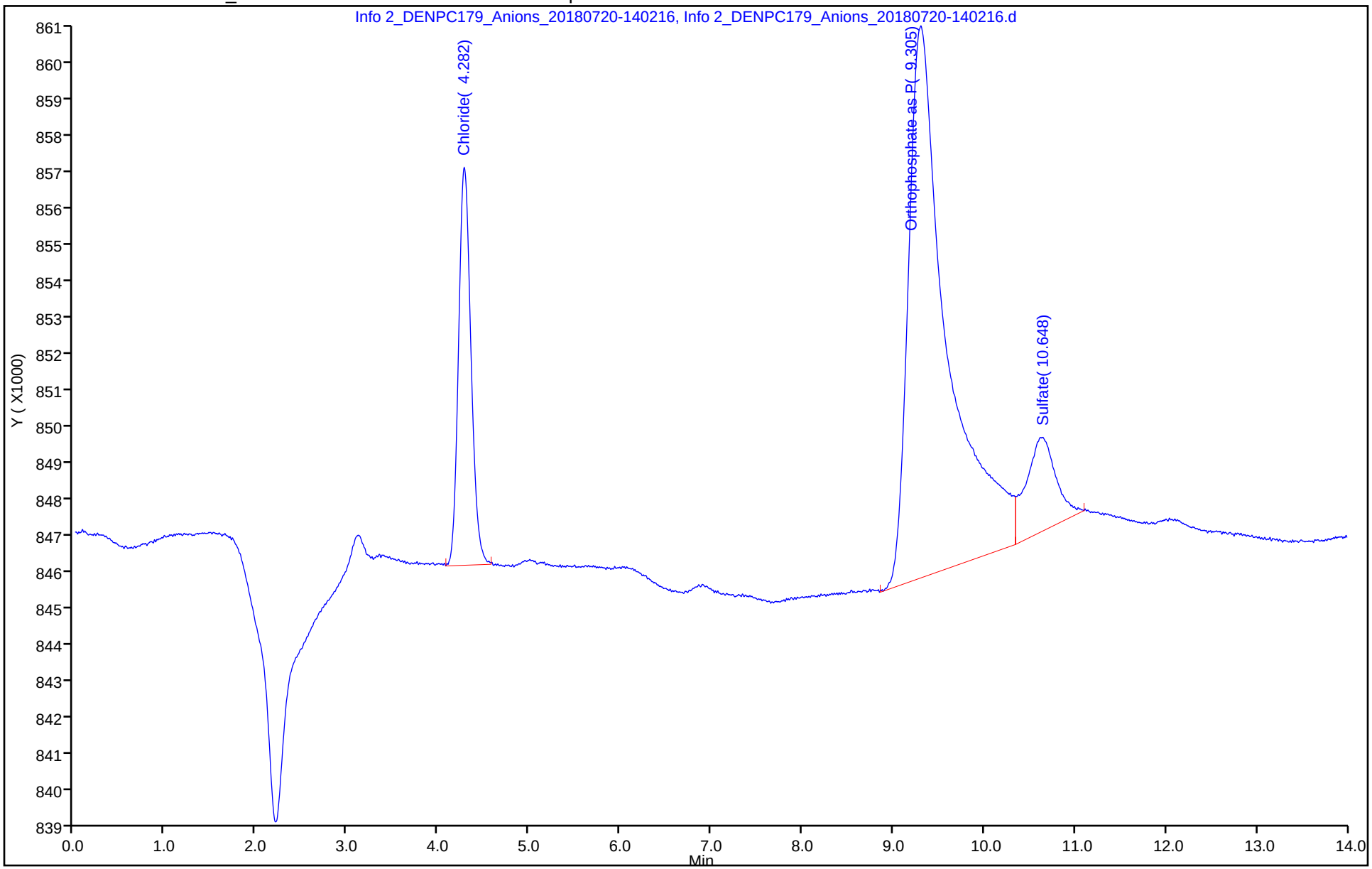
Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride		3.142				ND	
2 Chloride	4.282	4.333	-0.051	101170		0.4755	
3 Nitrite as N		5.058				ND	
4 Bromide		6.152				ND	
5 Nitrate as N		6.980				ND	
6 Orthophosphate as P	9.305	9.345	-0.040	436716		0.0502	
7 Sulfate	10.648	11.023	-0.375	57937		0.5267	

Report Date: 23-Jul-2018 09:30:26 Chrom Revision: 2.3 19-Jul-2018 15:14:50

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom10\20180720-72172.b\Info 2_DENPC179_Anions_20180720-140216.d

Injection Date:	20-Jul-2018 13:44:00	Instrument ID:	WC_IonChrom10	Operator ID:	wetchemd
Lims ID:	CCB			Worklist Smp#:	2
Client ID:					
Injection Vol:	5.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC10	Limit Group:	Wet - Anions		



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom10\20180720-72172.b\Info 2_DENPC179_Anions_20180720-14
Lims ID: MRL
Client ID:
Sample Type: MRL
Inject. Date: 20-Jul-2018 14:02:00 ALS Bottle#: 0 Worklist Smp#: 3
Injection Vol: 5.0 ul Dil. Factor: 1.0000
Sample Info: 280-0072172-003
Misc. Info.: 280-0072172-003
Operator ID: wetchemd Instrument ID: WC_IonChrom10

Method: \\ChromNA\Denver\ChromData\WC_IonChrom10\20180720-72172.b\Anions_IC10.m
Limit Group: Wet - Anions
Last Update: 23-Jul-2018 09:30:25 Calib Date: 11-Jul-2018 14:53:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom10\20180711-71867.b\Info 2_DENPC179_Anions_20180711-15

Column 1 : Det: Info 2_091554_1
Process Host: CTX0306

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride	3.115	3.142	-0.027	1094459	0.2000	0.2135	
2 Chloride	4.285	4.333	-0.048	8362135	2.50	2.37	
3 Nitrite as N	4.995	5.058	-0.063	1093720	0.2000	0.2306	
4 Bromide	6.060	6.152	-0.092	247244	0.2000	0.2249	
5 Nitrate as N	6.885	6.980	-0.095	1447028	0.2000	0.2338	
6 Orthophosphate as P	9.268	9.345	-0.077	1514800	0.2000	0.3359	
7 Sulfate	10.633	11.023	-0.390	5970110	2.50	2.35	

Reagents:

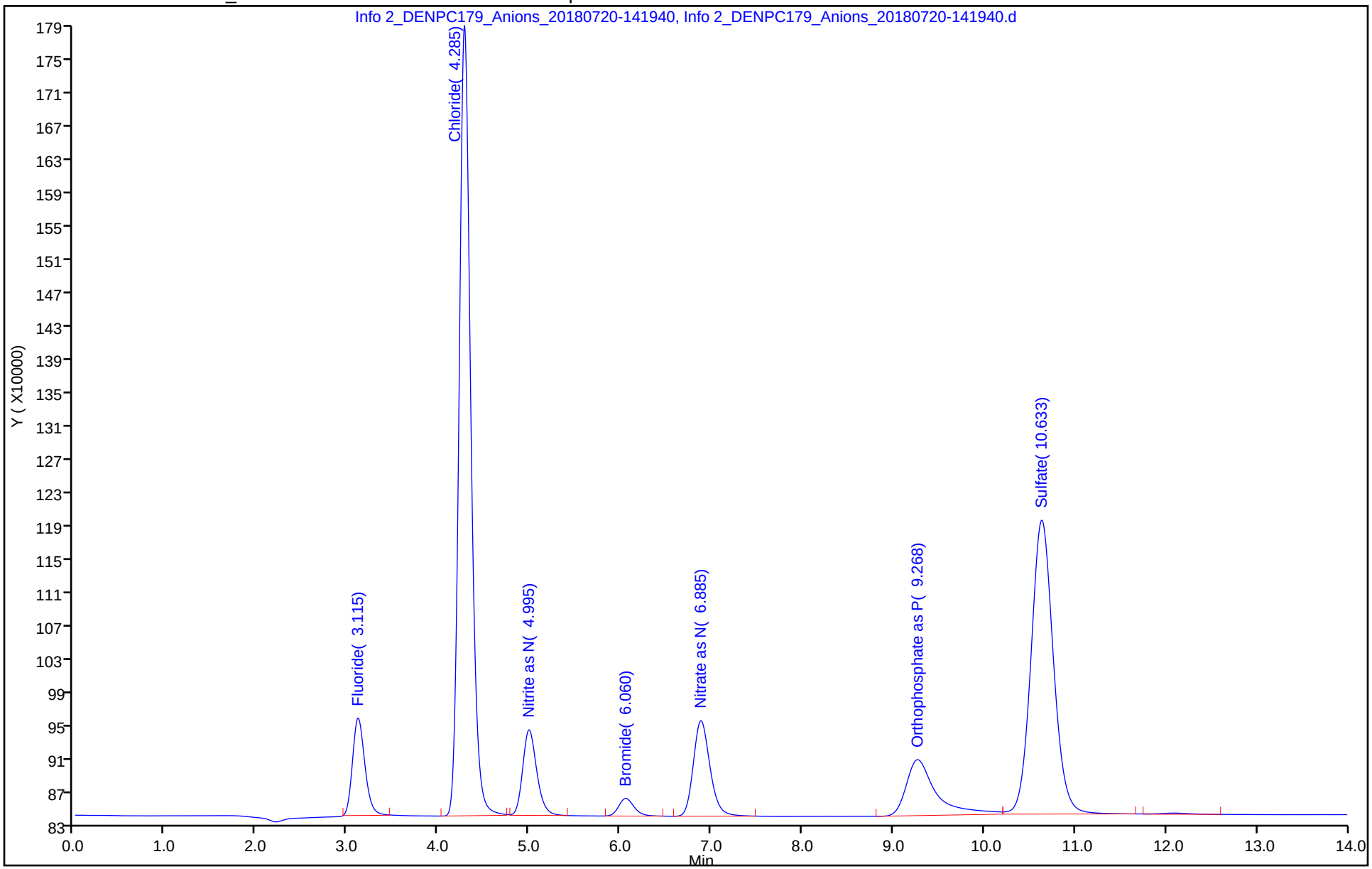
IC CAL cl/so4_00208 Amount Added: 0.10 Units: mL
IC Cal low_00386 Amount Added: 0.04 Units: mL

Report Date: 23-Jul-2018 09:30:28 Chrom Revision: 2.3 19-Jul-2018 15:14:50

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom10\20180720-72172.b\Info 2_DENPC179_Anions_20180720-141940.d

Injection Date:	20-Jul-2018 14:02:00	Instrument ID:	WC_IonChrom10	Operator ID:	wetchemd
Lims ID:	MRL			Worklist Smp#:	3
Client ID:					
Injection Vol:	5.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC10	Limit Group:	Wet - Anions		



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom10\20180720-72172.b\Info 2_DENPC179_Anions_20180720-14
Lims ID: LCS
Client ID:
Sample Type: LCS
Inject. Date: 20-Jul-2018 14:19:00 ALS Bottle#: 0 Worklist Smp#: 4
Injection Vol: 5.0 ul Dil. Factor: 1.0000
Sample Info: 280-0072172-004
Misc. Info.: 280-0072172-004
Operator ID: wetchemd Instrument ID: WC_IonChrom10

Method: \\ChromNA\Denver\ChromData\WC_IonChrom10\20180720-72172.b\Anions_IC10.m
Limit Group: Wet - Anions
Last Update: 23-Jul-2018 09:30:25 Calib Date: 11-Jul-2018 14:53:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom10\20180711-71867.b\Info 2_DENPC179_Anions_20180711-15

Column 1 : Det: Info 2_091554_1
Process Host: CTX0306

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride	3.113	3.142	-0.029	35863061	5.00	4.93	
2 Chloride	4.282	4.333	-0.051	431070241	100.0	99.2	
3 Nitrite as N	4.982	5.058	-0.076	43717906	5.00	4.76	
4 Bromide	6.038	6.152	-0.114	6992913	5.00	4.75	
5 Nitrate as N	6.833	6.980	-0.147	49410569	5.00	4.85	
6 Orthophosphate as P	9.225	9.345	-0.120	20134157	5.00	5.27	
7 Sulfate	10.607	11.023	-0.416	317121122	100.0	98.5	

Reagents:

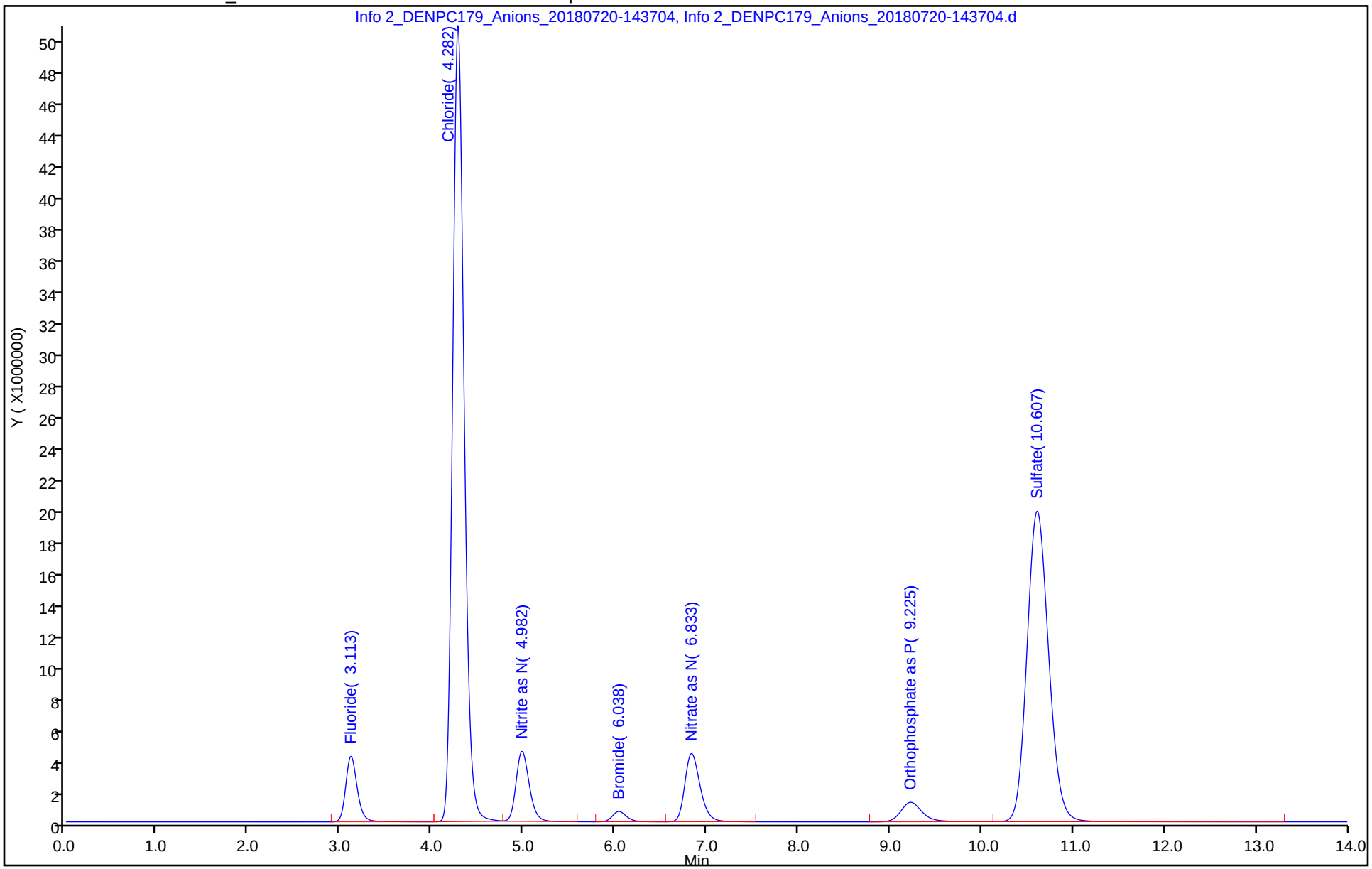
IC LCS_01288 Amount Added: 10.00 Units: mL

Report Date: 23-Jul-2018 09:30:29 Chrom Revision: 2.3 19-Jul-2018 15:14:50

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom10\20180720-72172.b\Info 2_DENPC179_Anions_20180720-143704.d

Injection Date:	20-Jul-2018 14:19:00	Instrument ID:	WC_IonChrom10	Operator ID:	wetchemd
Lims ID:	LCS			Worklist Smp#:	4
Client ID:					
Injection Vol:	5.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC10	Limit Group:	Wet - Anions		



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom10\20180720-72172.b\Info 2_DENPC179_Anions_20180720-14
Lims ID: LCSD
Client ID:
Sample Type: LCSD
Inject. Date: 20-Jul-2018 14:37:00 ALS Bottle#: 0 Worklist Smp#: 5
Injection Vol: 5.0 ul Dil. Factor: 1.0000
Sample Info: 280-0072172-005
Misc. Info.: 280-0072172-005
Operator ID: wetchemd Instrument ID: WC_IonChrom10

Method: \\ChromNA\Denver\ChromData\WC_IonChrom10\20180720-72172.b\Anions_IC10.m
Limit Group: Wet - Anions
Last Update: 23-Jul-2018 09:30:25 Calib Date: 11-Jul-2018 14:53:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom10\20180711-71867.b\Info 2_DENPC179_Anions_20180711-15

Column 1 : Det: Info 2_091554_1
Process Host: CTX0306

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride	3.112	3.142	-0.030	35655562	5.00	4.91	
2 Chloride	4.282	4.333	-0.051	431520400	100.0	99.3	
3 Nitrite as N	4.980	5.058	-0.078	43695888	5.00	4.76	
4 Bromide	6.037	6.152	-0.115	7004751	5.00	4.76	
5 Nitrate as N	6.832	6.980	-0.148	49417558	5.00	4.85	
6 Orthophosphate as P	9.225	9.345	-0.120	19956317	5.00	5.22	
7 Sulfate	10.607	11.023	-0.416	317162107	100.0	98.5	

Reagents:

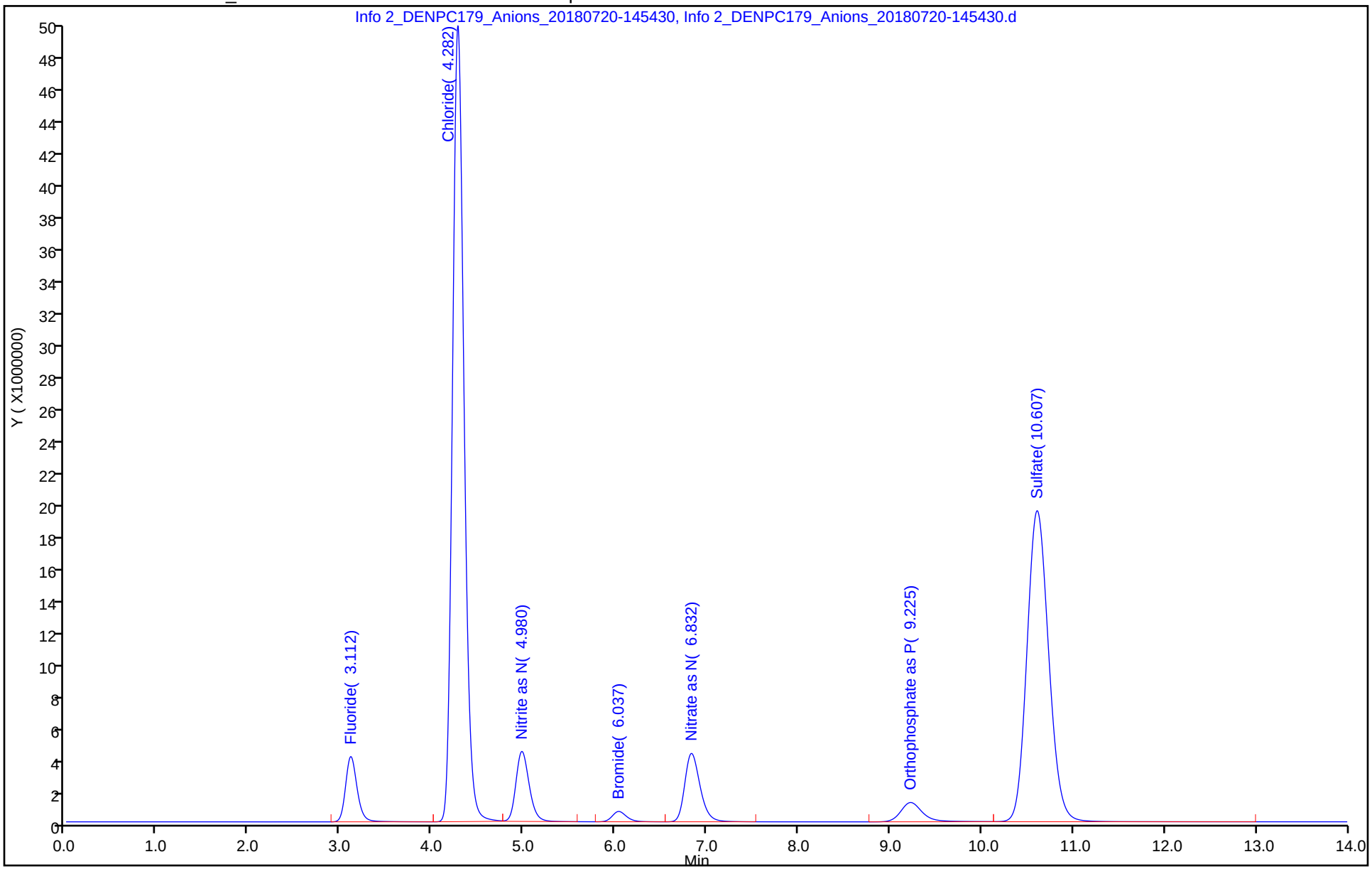
IC LCS_01288 Amount Added: 10.00 Units: mL

Report Date: 23-Jul-2018 09:30:31 Chrom Revision: 2.3 19-Jul-2018 15:14:50

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom10\20180720-72172.b\Info 2_DENPC179_Anions_20180720-145430.d

Injection Date:	20-Jul-2018 14:37:00	Instrument ID:	WC_IonChrom10	Operator ID:	wetchemd
Lims ID:	LCSD			Worklist Smp#:	5
Client ID:					
Injection Vol:	5.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC10	Limit Group:	Wet - Anions		



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom10\20180720-72172.b\Info 2_DENPC179_Anions_20180720-15
Lims ID: MB
Client ID:
Sample Type: MB
Inject. Date: 20-Jul-2018 14:54:00 ALS Bottle#: 0 Worklist Smp#: 6
Injection Vol: 5.0 ul Dil. Factor: 1.0000
Sample Info: 280-0072172-006
Misc. Info.: 280-0072172-006
Operator ID: wetchemd Instrument ID: WC_IonChrom10

Method: \\ChromNA\Denver\ChromData\WC_IonChrom10\20180720-72172.b\Anions_IC10.m
Limit Group: Wet - Anions
Last Update: 23-Jul-2018 09:30:25 Calib Date: 11-Jul-2018 14:53:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom10\20180711-71867.b\Info 2_DENPC179_Anions_20180711-15

Column 1 : Det: Info 2_091554_1
Process Host: CTX0306

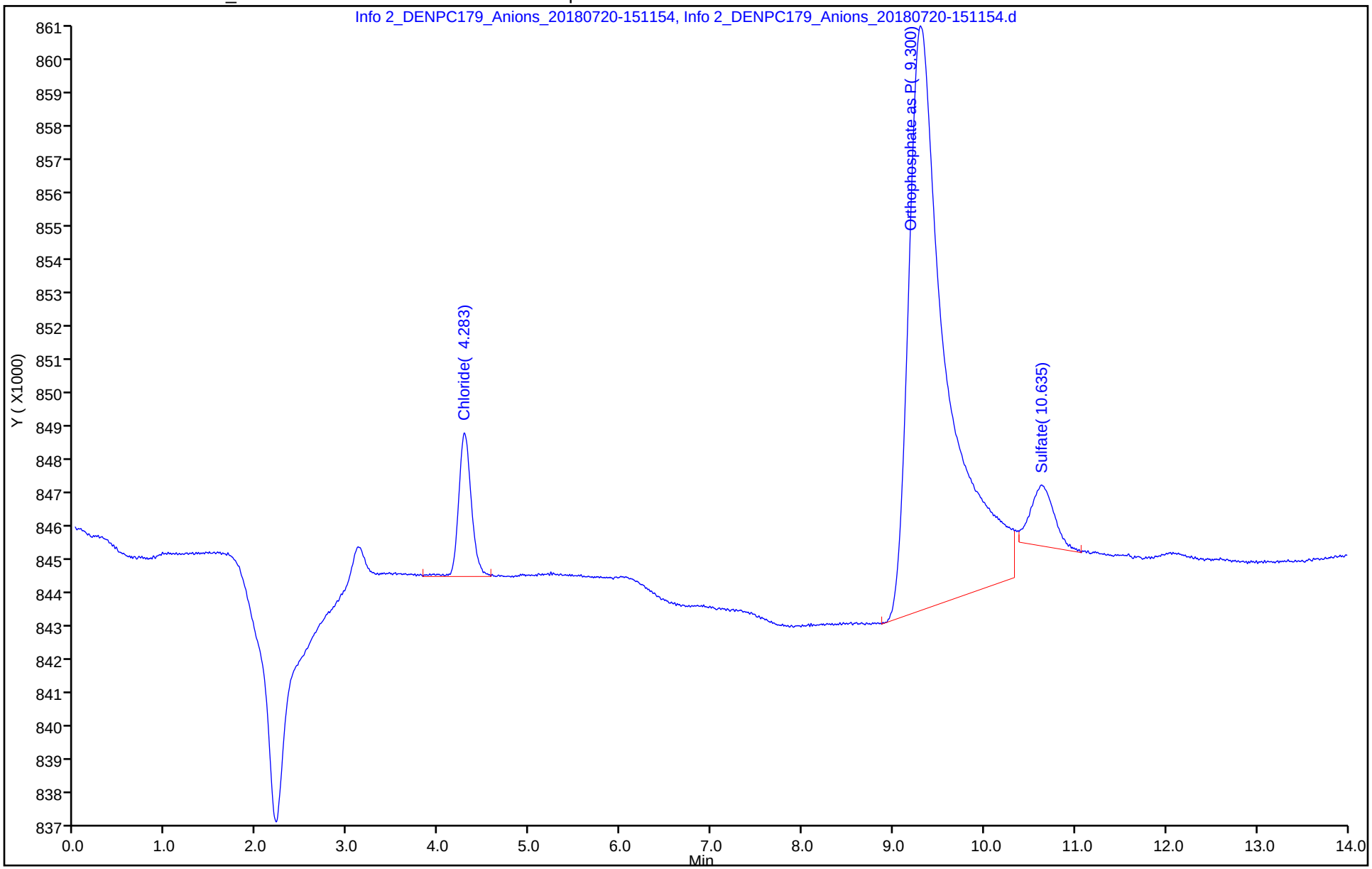
Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride		3.142				ND	
2 Chloride	4.283	4.333	-0.050	40071		0.4615	
3 Nitrite as N		5.058				ND	
4 Bromide		6.152				ND	
5 Nitrate as N		6.980				ND	
6 Orthophosphate as P	9.300	9.345	-0.045	481423		0.0621	
7 Sulfate	10.635	11.023	-0.388	31771		0.5187	

Report Date: 23-Jul-2018 09:30:32 Chrom Revision: 2.3 19-Jul-2018 15:14:50

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom10\20180720-72172.b\Info 2_DENPC179_Anions_20180720-151154.d

Injection Date:	20-Jul-2018 14:54:00	Instrument ID:	WC_IonChrom10	Operator ID:	wetchemd
Lims ID:	MB			Worklist Smp#:	6
Client ID:					
Injection Vol:	5.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC10	Limit Group:	Wet - Anions		



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom10\20180720-72172.b\Info 2_DENPC179_Anions_20180720-23
Lims ID: ccv
Client ID:
Sample Type: CCV
Inject. Date: 20-Jul-2018 22:47:00 ALS Bottle#: 0 Worklist Smp#: 17
Injection Vol: 5.0 ul Dil. Factor: 1.0000
Sample Info: 280-0072172-017
Misc. Info.: 280-0072172-017
Operator ID: wetchemd Instrument ID: WC_IonChrom10
Sublist: chrom-Anions_IC10*sub2

Method: \\ChromNA\Denver\ChromData\WC_IonChrom10\20180720-72172.b\Anions_IC10.m
Limit Group: Wet - Anions
Last Update: 23-Jul-2018 09:30:46 Calib Date: 11-Jul-2018 14:53:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom10\20180711-71867.b\Info 2_DENPC179_Anions_20180711-15

Column 1 : Det: Info 2_091554_1
Process Host: CTX0306

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride	3.112	3.142	-0.030	33885443	5.00	4.67	
2 Chloride	4.282	4.333	-0.051	432610749	100.0	99.5	
3 Nitrite as N	4.980	5.058	-0.078	43378110	5.00	4.73	
4 Bromide	6.037	6.152	-0.115	7022762	5.00	4.77	
5 Nitrate as N	6.833	6.980	-0.147	49791278	5.00	4.89	
6 Orthophosphate as P	9.227	9.345	-0.118	19829384	5.00	5.19	
7 Sulfate	10.605	11.023	-0.418	317292916	100.0	98.6	

Reagents:

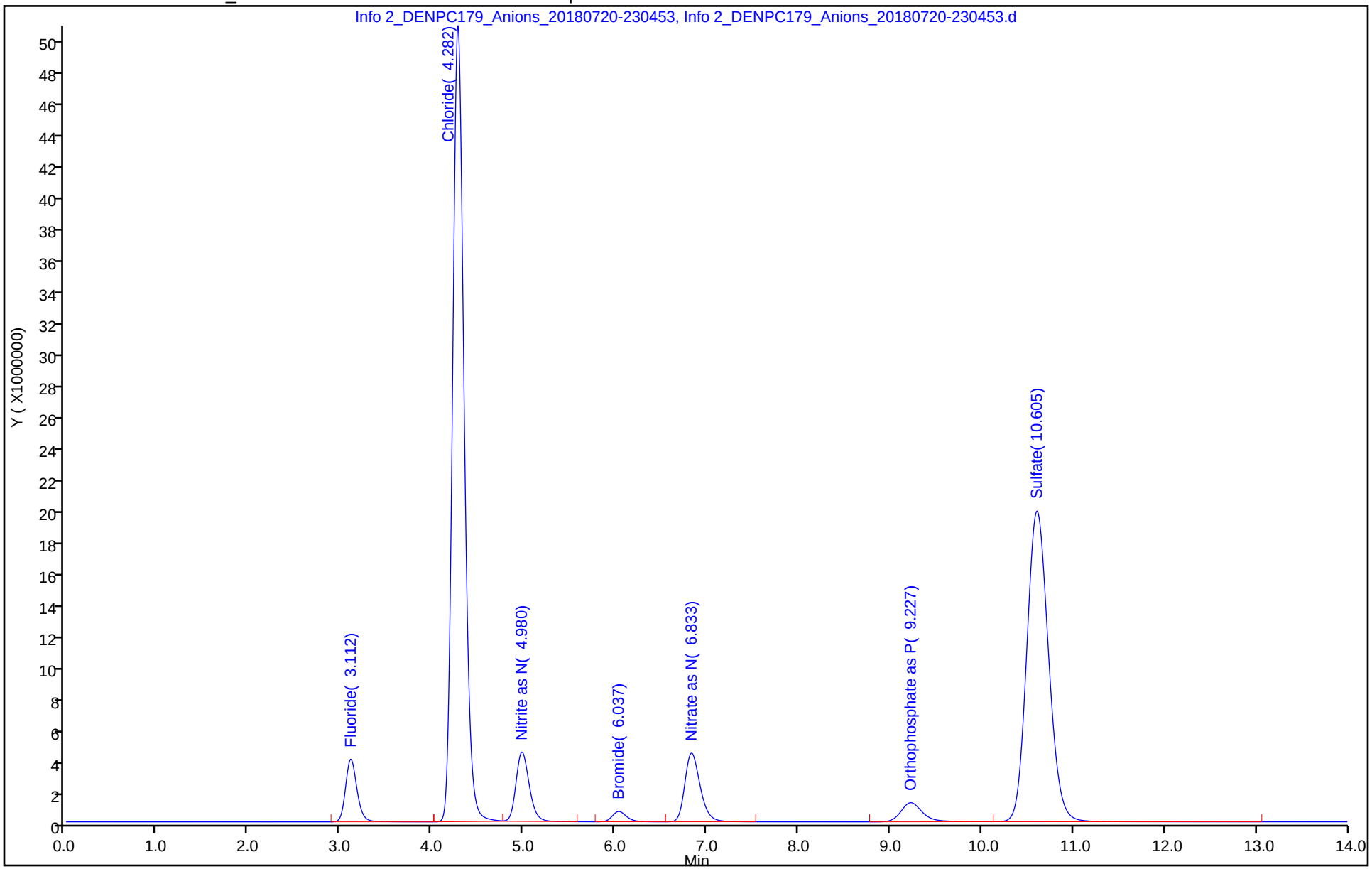
IC LCS_01288 Amount Added: 10.00 Units: mL

Report Date: 23-Jul-2018 09:30:47 Chrom Revision: 2.3 19-Jul-2018 15:14:50

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom10\20180720-72172.b\Info 2_DENPC179_Anions_20180720-230453.d

Injection Date:	20-Jul-2018 22:47:00	Instrument ID:	WC_IonChrom10	Operator ID:	wetchemd
Lims ID:	ccv			Worklist Smp#:	17
Client ID:					
Injection Vol:	5.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC10	Limit Group:	Wet - Anions		



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom10\20180720-72172.b\Info 2_DENPC179_Anions_20180720-23
Lims ID: ccb
Client ID:
Sample Type: CCB
Inject. Date: 20-Jul-2018 23:04:00 ALS Bottle#: 0 Worklist Smp#: 18
Injection Vol: 5.0 ul Dil. Factor: 1.0000
Sample Info: 280-0072172-018
Misc. Info.: 280-0072172-018
Operator ID: wetchemd Instrument ID: WC_IonChrom10

Method: \\ChromNA\Denver\ChromData\WC_IonChrom10\20180720-72172.b\Anions_IC10.m
Limit Group: Wet - Anions
Last Update: 23-Jul-2018 09:30:46 Calib Date: 11-Jul-2018 14:53:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom10\20180711-71867.b\Info 2_DENPC179_Anions_20180711-15

Column 1 : Det: Info 2_091554_1
Process Host: CTX0306

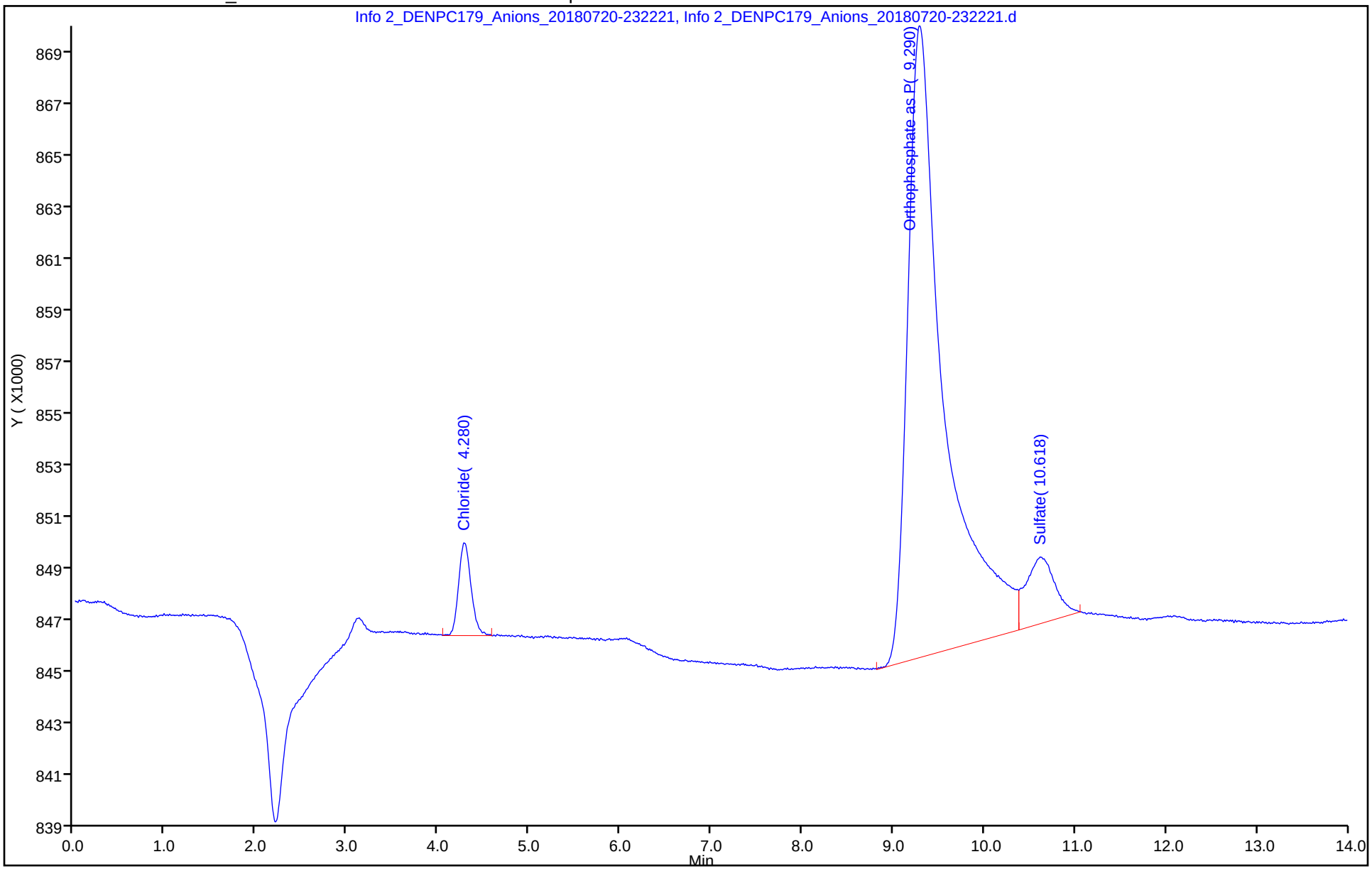
Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride		3.142				ND	
2 Chloride	4.280	4.333	-0.053	33414		0.4599	
3 Nitrite as N		5.058				ND	
4 Bromide		6.152				ND	
5 Nitrate as N		6.980				ND	
6 Orthophosphate as P	9.290	9.345	-0.055	657791		0.1088	
7 Sulfate	10.618	11.023	-0.405	55211		0.5259	

Report Date: 23-Jul-2018 09:30:48 Chrom Revision: 2.3 19-Jul-2018 15:14:50

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom10\20180720-72172.b\Info 2_DENPC179_Anions_20180720-232221.d

Injection Date:	20-Jul-2018 23:04:00	Instrument ID:	WC_IonChrom10	Operator ID:	wetchemd
Lims ID:	ccb			Worklist Smp#:	18
Client ID:					
Injection Vol:	5.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC10	Limit Group:	Wet - Anions		



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom10\20180720-72172.b\Info 2_DENPC179_Anions_20180721-02
Lims ID: ccv
Client ID:
Sample Type: CCV
Inject. Date: 21-Jul-2018 02:17:00 ALS Bottle#: 0 Worklist Smp#: 29
Injection Vol: 5.0 ul Dil. Factor: 1.0000
Sample Info: 280-0072172-029
Misc. Info.: 280-0072172-029
Operator ID: wetchemd Instrument ID: WC_IonChrom10
Sublist: chrom-Anions_IC10*sub2

Method: \\ChromNA\Denver\ChromData\WC_IonChrom10\20180720-72172.b\Anions_IC10.m
Limit Group: Wet - Anions
Last Update: 23-Jul-2018 09:31:04 Calib Date: 11-Jul-2018 14:53:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom10\20180711-71867.b\Info 2_DENPC179_Anions_20180711-15

Column 1 : Det: Info 2_091554_1
Process Host: CTX0306

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride	3.112	3.142	-0.030	33632759	5.00	4.63	
2 Chloride	4.283	4.333	-0.050	433604557	100.0	99.8	
3 Nitrite as N	4.982	5.058	-0.076	43555565	5.00	4.74	
4 Bromide	6.040	6.152	-0.112	7022049	5.00	4.77	
5 Nitrate as N	6.837	6.980	-0.143	49730256	5.00	4.88	
6 Orthophosphate as P	9.225	9.345	-0.120	19564099	5.00	5.12	
7 Sulfate	10.602	11.023	-0.421	318422955	100.0	98.9	

Reagents:

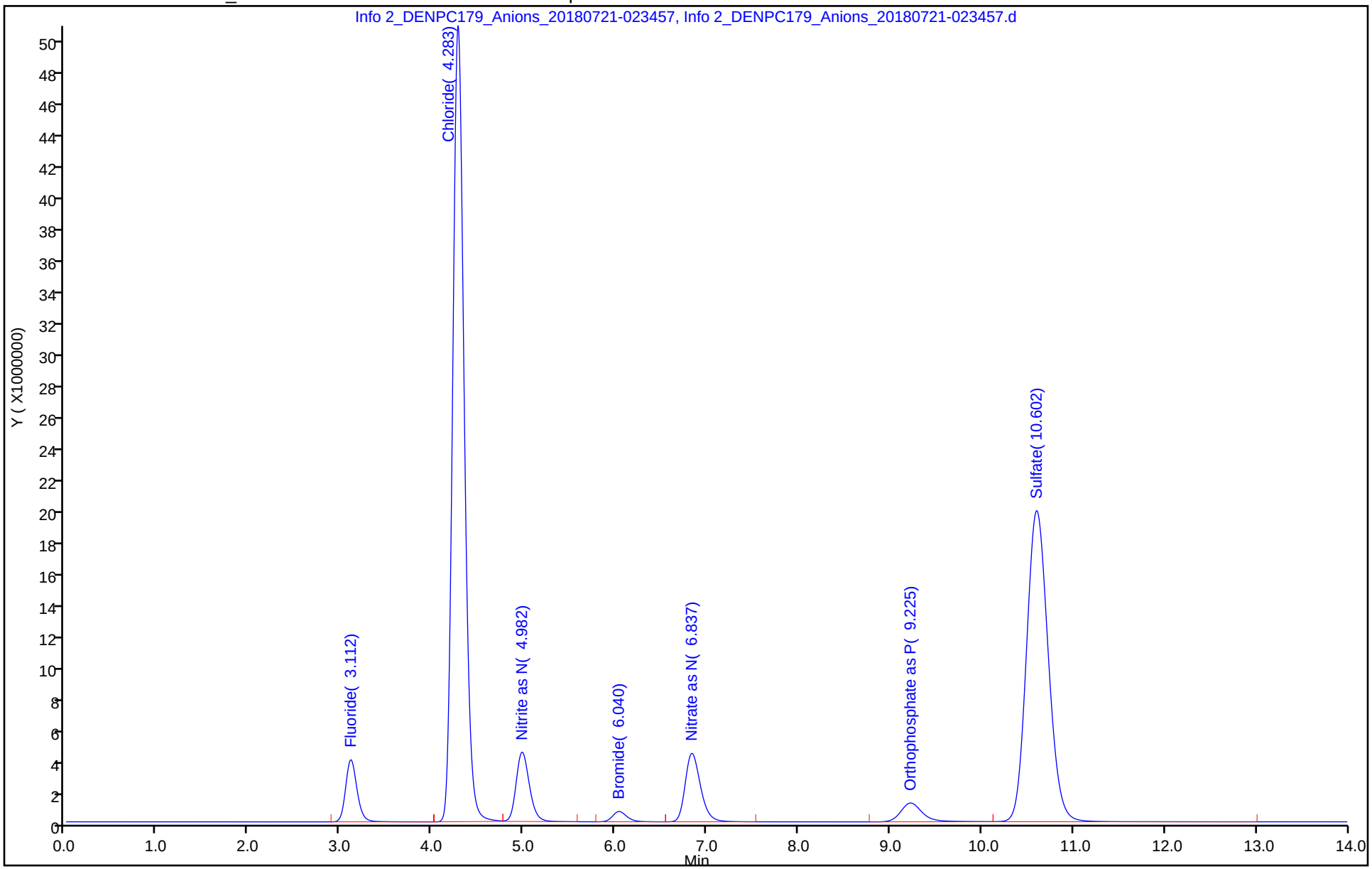
IC LCS_01288 Amount Added: 10.00 Units: mL

Report Date: 23-Jul-2018 09:31:04 Chrom Revision: 2.3 19-Jul-2018 15:14:50

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom10\20180720-72172.b\Info 2_DENPC179_Anions_20180721-023457.d

Injection Date:	21-Jul-2018 02:17:00	Instrument ID:	WC_IonChrom10	Operator ID:	wetchemd
Lims ID:	ccv			Worklist Smp#:	29
Client ID:					
Injection Vol:	5.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC10	Limit Group:	Wet - Anions		



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom10\20180720-72172.b\Info 2_DENPC179_Anions_20180721-02
Lims ID: ccb
Client ID:
Sample Type: CCB
Inject. Date: 21-Jul-2018 02:34:00 ALS Bottle#: 0 Worklist Smp#: 30
Injection Vol: 5.0 ul Dil. Factor: 1.0000
Sample Info: 280-0072172-030
Misc. Info.: 280-0072172-030
Operator ID: wetchemd Instrument ID: WC_IonChrom10

Method: \\ChromNA\Denver\ChromData\WC_IonChrom10\20180720-72172.b\Anions_IC10.m
Limit Group: Wet - Anions
Last Update: 23-Jul-2018 09:31:04 Calib Date: 11-Jul-2018 14:53:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom10\20180711-71867.b\Info 2_DENPC179_Anions_20180711-15

Column 1 : Det: Info 2_091554_1
Process Host: CTX0306

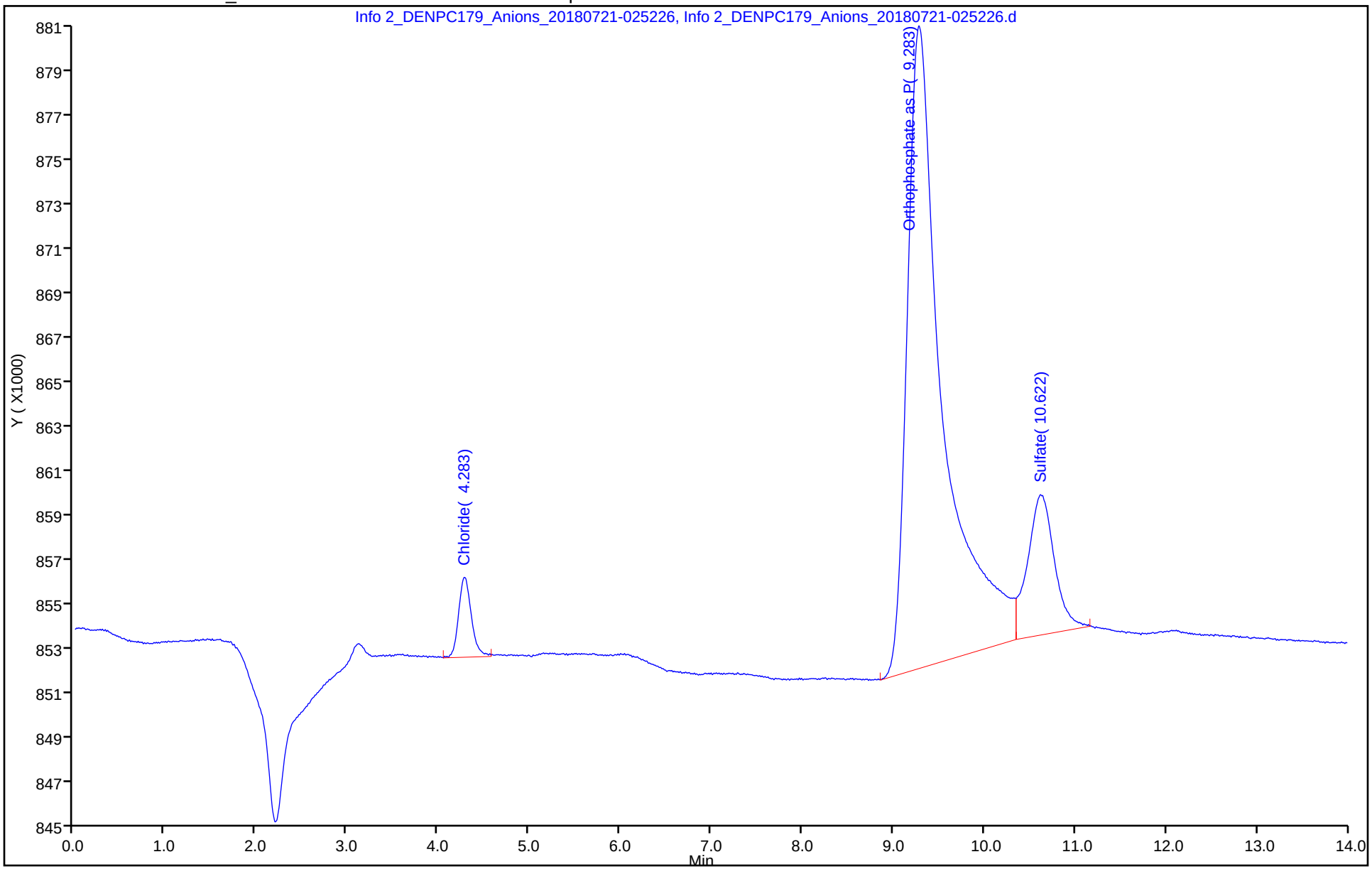
Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride		3.142				ND	
2 Chloride	4.283	4.333	-0.050	33523		0.4600	
3 Nitrite as N		5.058				ND	
4 Bromide		6.152				ND	
5 Nitrate as N		6.980				ND	
6 Orthophosphate as P	9.283	9.345	-0.062	742394		0.1312	
7 Sulfate	10.622	11.023	-0.401	122812		0.5468	

Report Date: 23-Jul-2018 09:31:06 Chrom Revision: 2.3 19-Jul-2018 15:14:50

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom10\20180720-72172.b\Info 2_DENPC179_Anions_20180721-025226.d

Injection Date:	21-Jul-2018 02:34:00	Instrument ID:	WC_IonChrom10	Operator ID:	wetchemd
Lims ID:	ccb			Worklist Smp#:	30
Client ID:					
Injection Vol:	5.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC10	Limit Group:	Wet - Anions		



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom10\20180720-72172.b\Info 2_DENPC179_Anions_20180721-04
Lims ID: ccv
Client ID:
Sample Type: CCV
Inject. Date: 21-Jul-2018 04:37:00 ALS Bottle#: 0 Worklist Smp#: 37
Injection Vol: 5.0 ul Dil. Factor: 1.0000
Sample Info: 280-0072172-037
Misc. Info.: 280-0072172-037
Operator ID: wetchemd Instrument ID: WC_IonChrom10
Sublist: chrom-Anions_IC10*sub2

Method: \\ChromNA\Denver\ChromData\WC_IonChrom10\20180720-72172.b\Anions_IC10.m
Limit Group: Wet - Anions
Last Update: 23-Jul-2018 09:31:15 Calib Date: 11-Jul-2018 14:53:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom10\20180711-71867.b\Info 2_DENPC179_Anions_20180711-15

Column 1 : Det: Info 2_091554_1
Process Host: CTX0306

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride	3.110	3.142	-0.032	34530588	5.00	4.75	
2 Chloride	4.280	4.333	-0.053	441698114	100.0	101.6	
3 Nitrite as N	4.978	5.058	-0.080	43463475	5.00	4.73	
4 Bromide	6.035	6.152	-0.117	7099353	5.00	4.82	
5 Nitrate as N	6.830	6.980	-0.150	50254337	5.00	4.93	
6 Orthophosphate as P	9.217	9.345	-0.128	19371278	5.00	5.07	
7 Sulfate	10.592	11.023	-0.431	324093872	100.0	100.7	

Reagents:

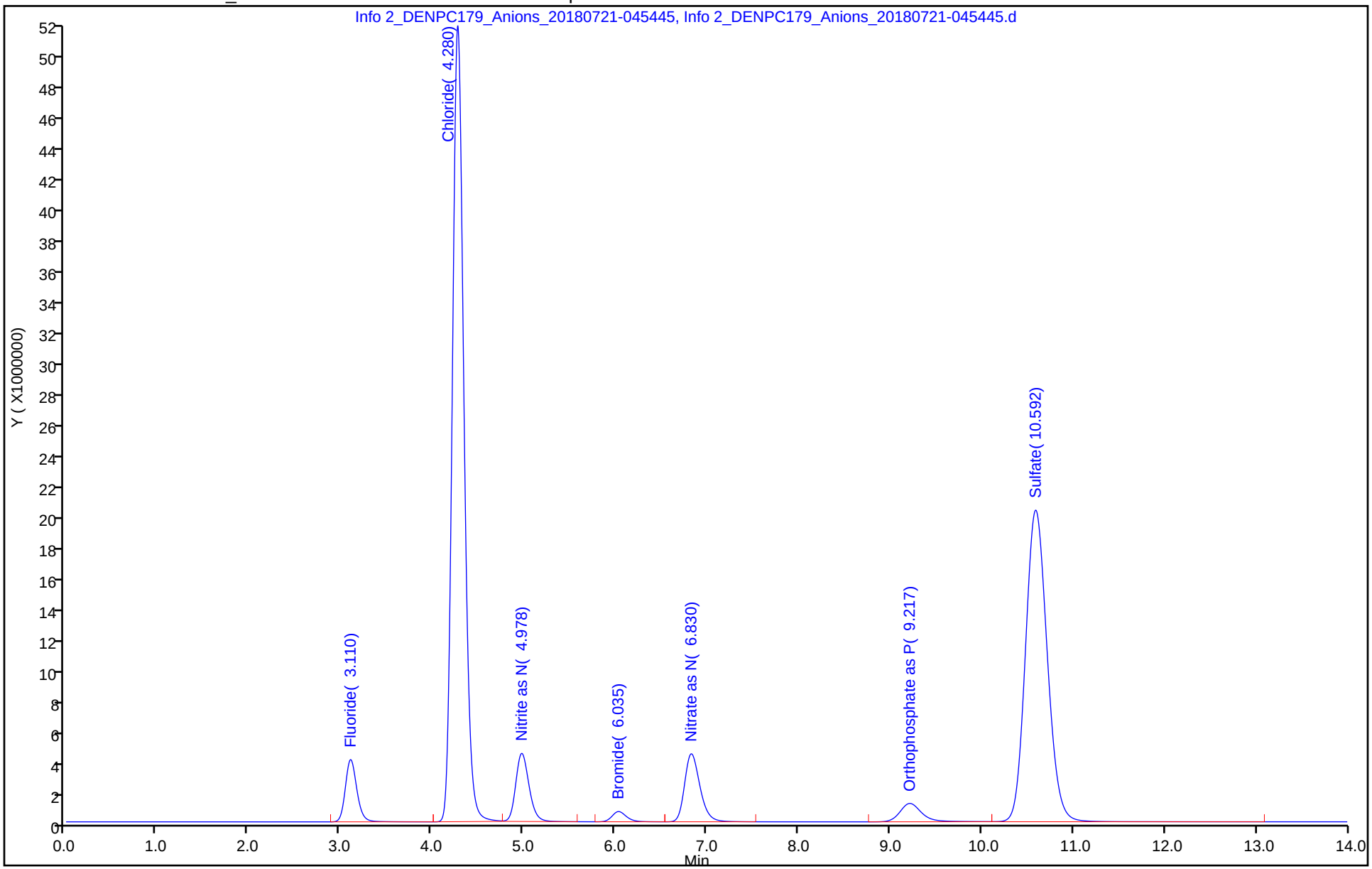
IC LCS_01288 Amount Added: 10.00 Units: mL

Report Date: 23-Jul-2018 09:31:15 Chrom Revision: 2.3 19-Jul-2018 15:14:50

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom10\20180720-72172.b\Info 2_DENPC179_Anions_20180721-045445.d

Injection Date:	21-Jul-2018 04:37:00	Instrument ID:	WC_IonChrom10	Operator ID:	wetchemd
Lims ID:	ccv			Worklist Smp#:	37
Client ID:					
Injection Vol:	5.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC10	Limit Group:	Wet - Anions		



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom10\20180720-72172.b\Info 2_DENPC179_Anions_20180721-05
Lims ID: ccb
Client ID:
Sample Type: CCB
Inject. Date: 21-Jul-2018 04:54:00 ALS Bottle#: 0 Worklist Smp#: 38
Injection Vol: 5.0 ul Dil. Factor: 1.0000
Sample Info: 280-0072172-038
Misc. Info.: 280-0072172-038
Operator ID: wetchemd Instrument ID: WC_IonChrom10

Method: \\ChromNA\Denver\ChromData\WC_IonChrom10\20180720-72172.b\Anions_IC10.m
Limit Group: Wet - Anions
Last Update: 23-Jul-2018 09:31:15 Calib Date: 11-Jul-2018 14:53:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom10\20180711-71867.b\Info 2_DENPC179_Anions_20180711-15

Column 1 : Det: Info 2_091554_1
Process Host: CTX0306

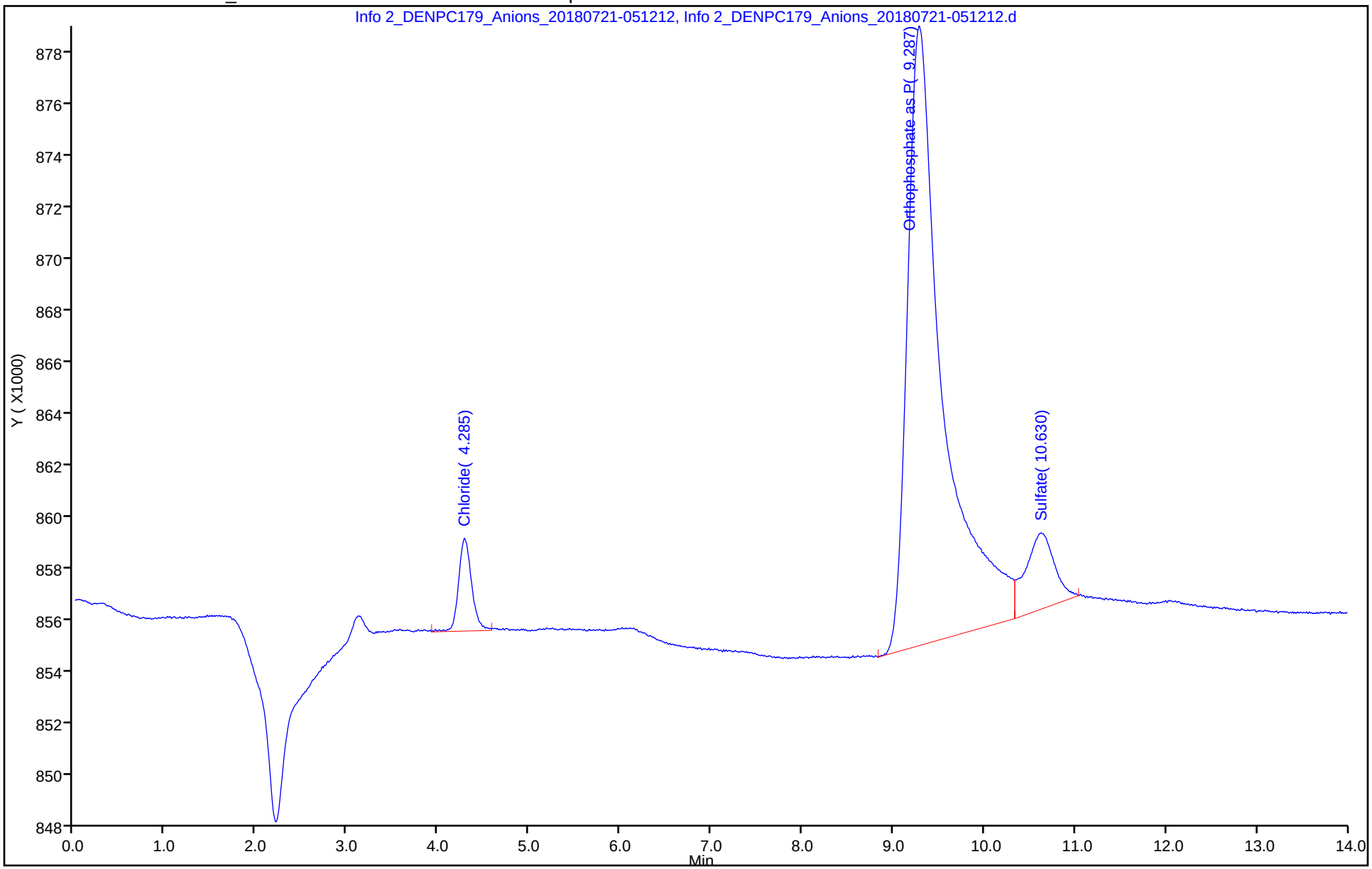
Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride		3.142				ND	
2 Chloride	4.285	4.333	-0.048	34043		0.4601	
3 Nitrite as N		5.058				ND	
4 Bromide		6.152				ND	
5 Nitrate as N		6.980				ND	
6 Orthophosphate as P	9.287	9.345	-0.058	615902		0.0977	
7 Sulfate	10.630	11.023	-0.393	62797		0.5282	

Report Date: 23-Jul-2018 09:31:16 Chrom Revision: 2.3 19-Jul-2018 15:14:50

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom10\20180720-72172.b\Info 2_DENPC179_Anions_20180721-051212.d

Injection Date:	21-Jul-2018 04:54:00	Instrument ID:	WC_IonChrom10	Operator ID:	wetchemd
Lims ID:	ccb			Worklist Smp#:	38
Client ID:					
Injection Vol:	5.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC10	Limit Group:	Wet - Anions		



Shipping and Receiving Documents

TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: JC & SC	Lab PM: McEntee, Patrick J	Carrier Tracking No(s):	COC No:
Client Contact: Danyelle Phillips	Phone: 434-906-2085	E-Mail: patrick.mcentee@testamericainc.com		Page:
Company: Cardno TEC, Inc				Job #:
Address: 1658 Cole Boulevard Suite 190	Due Date Requested:			
City: Golden	TAT Requested (days): 20 Business Days			
State, Zip: CO 80401				
Phone: 434-906-2085	PO #:			
Email: Danyelle.Phillips@cardno-gs.com	WO #: 076003.009.011			
Project Name: Ravenna, OH -	Project #: 28014271			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL; B - NaOH; C - Zn Acetate; D - Nitric Acid; E - NaHSO4; F - MeOH; G - Amchlor; H - Ascorbic Acid; I - Ice; J - DI Water; K - EDTA; L - EDA; M - Hexane; N - None; O - AsNaO2; P - Na2O4S; Q - Na2SO3; R - Na2S2SO3; S - H2SO4; T - TSP Dodecahydrate; U - Acetone; V - MCAA; W - ph 4-5; Z - other (specify)
Other:

QC - dep

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8260B - VOCs	8270D - SVOCs List 1	8270D - SVOCs List 2	8270D - SVOCs List 3	8270D - SVOCs List 4	8270D - SVOCs Full Suite	8270D_SIM - PAHs (LVI)	8082A - PCBs	8330B - Explosives/Propellants	8081B - Pesticides (LVI)	9012B - Cyanide	6010C/6020A/7470A - Total Metals	6010C/6020A/7470A - Dissolved Metals	6020A - Arsenic	7196A - Hexavalent Chromium (24 HOUR HOLD TIME)	2320B - Alkalinity	9056A - Anions (Chloride and Sulfate) Nitrate/Nitrite	9034 - Sulfide	9056A - Nitrate (48 HOUR HOLD TIME)	8860 - Perchlorate	6010C - Phosphorus	Total Number of containers	Special Instructions/Note:
			Preservation Code:				A	N	N	N	N	N	N	N	N	N	B	D	D	D	N	N	N	C/B	N	N	DV		
~~FWGmw-019-062618-GW~~	06.26.18	13.33	G	W			X					X		X			X				X		X			X	X	13	
~~FWGmw-022-062618-GW~~	06-26-18		G	W			X					X		X			X				X		X			X	X	13	
FWGMW-023-062618-GW	06-26-18	1619	G	W			X					X					X				X		X			X	X	11	
WBGmw-009-062618-GW	6-26-18	1445	G	W							X	X			X			X										5	
~~TB-062618-02~~	6-26-18	1400	G	W			X																					1	

dep

280-11468 Chain of Custody

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	6-26-18/1635	Cardno		6-27-18 1420	Cardno
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	6.27.18	Cardno		06-28-18 0920	TADEN
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: △ Yes △ No

Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks: 5.6, 3.1, 3.5, 4.6, 2.1, 5.3, 2.0, 4.4, 5.1, 2.3 +00 XFERED BY KD

06-28-18

TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler:	Lab PM: McEntee, Patrick J	Carrier Tracking No(s):	COC No:
Client Contact: Danyelle Phillips	Phone:	E-Mail: patrick.mcentee@testamericainc.com		Page:
Company: Cardno TEC, Inc				Job #:
Address: 1658 Cole Boulevard Suite 190	Due Date Requested:			
City: Golden	TAT Requested (days): 20 Business Days			
State, Zip: CO 80401				
Phone: 434-906-2085	PO #:			
Email: Danyelle.Phillips@cardno-gs.com	WO #: 076003.009.011			
Project Name: Ravenna, OH -	Project #: 28014271			
Site:	SSOW#:			

Analysis Requested

Analysis	Preservation Code	LLMW-089-D-062718-GW
Field Filtered Sample (Yes or No)		N
Perform MS/MSD (Yes or No)		Y
8260B - VOCs	A	
8270D - SVOCs List 1	N	
8270D - SVOCs List 2 (Nitrocellulose)	N	X
8270D - SVOCs List 3 (Nitroguanidine)	N	X
8270D - SVOCs List 4 (dup)	N	X
8270D - SVOCs Full Suite	N	X
8270D_SIM - PAHs (LVI)	N	
8082A - PCBs	N	
8330B - Explosives/Propellants	N	X
8081B - Pesticides (LVI)	N	
9012B - Cyanide	B	X
6010C/6020A/7470A - Total Metals	D	
6010C/6020A/7470A - Dissolved Metals	D	
6020A - Arsenic	D	
7196A - Hexavalent Chromium (24 HOUR HOLD TIME)	N	
2320B - Alkalinity	N	
9056A - Anions (Chloride and Sulfate)	N	
9034 - Sulfide	C/B	
9056A - Nitrate (48 HOUR HOLD TIME)	N	
6860 - Perchlorate	N	X
6010C - Phosphorous	D	
Total Number of containers		9

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Special Instructions/Note: QC-dup
LLMW-089-D-062718-GW	6-27-18	1020	G	W	Perchlorate Filtered

dup

Preservation Codes:
A - HCL M - Hexane
B - NaOH N - None
C - Zn Acetate O - AsNaO2
D - Nitric Acid P - Na2O4S
E - NaHSO4 Q - Na2SO3
F - MeOH R - Na2S2SO3
G - Amchlor S - H2SO4
H - Ascorbic Acid T - TSP Dodecahydrate
I - Ice U - Acetone
J - DI Water V - MCAA
K - EDTA W - ph 4-5
L - EDA Z - other (specify)
Other:

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For ____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by: Date: Time: Method of Shipment:

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
[signature]	6-27-18/1400	Cardno	[signature]	6-27-18 - 1428	240
[signature]	6-27-18-1502	240	[signature]	06-28-18 0920	TA DEN

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks:

TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: dep	Lab PM: McEntee, Patrick J	Carrier Tracking No(s):	COC No: 1 of 2 coolers
Client Contact: Danyelle Phillips	Phone: 434-906-2085	E-Mail: patrick.mcentee@testamericainc.com		Page:
Company: Cardno TEC, Inc				Job #:

Address: 1658 Cole Boulevard Suite 190	Due Date Requested:	Analysis Requested
City: Golden	TAT Requested (days): 20 Business Days	
State, Zip: CO 80401	PO #:	
Phone: 434-906-2085	WO #: 076003.009.011	
Email: Danyelle.Phillips@cardno-gs.com	Project #: 28014271	
Project Name: Ravenna, OH -	SSOW#:	
Site: Ravenna		

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2SO3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (Water, Solid, Oil/waste, BT=Tissue, Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8260B - VOCs	8270D - SVOCs List 1	8270D - SVOCs List 2	~~8270D_SVOCs List 3~~ Nitrocellulose	~~8270D_SVOCs List 4~~ Nitroguanidine	8270D - SVOCs Full Suite	8270D_SIM - PAHs (LVI)	8082A - PCBs	8330B - Explosives/Propellants	8081B - Pesticides (LVI)	9012B - Cyanide	6010C/6020A/7470A - Total Metals	6010C/6020A/7470A - Dissolved Metals	6020A - Arsenic	7196A - Hexavalent Chromium (24 HOUR HOLD TIME)	2320B - Alkalinity	9056A - Anions (Chloride and Sulfate)	9034 - Sulfide	9056A - Nitrate (48 HOUR HOLD TIME)	6860 - Perchlorate	6010C - Phosphorous	Total Number of containers	Special Instructions/Note:
			Preservation Code:		X	X	A	N	N	N	N	N	N	N	N	N	B	D	D	D	N	N	N	C/B	N	N	D	X	
LLmw-089-062718-GW	6-27-18	1020	G	W	N	N				X	X	X			X		X									X		2	MS/MSD
																											dep		

2 coolers
QC - dep

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological	☐ Return To Client ☐ Disposal By Lab ☐ Archive For ____ Months
Deliverable Requested: I, II, III, IV, Other (specify)	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time: 6-27-18/1400	Company: Cardno	Received by:	Date/Time: 6-27-18-1428	Company: TA Den
Relinquished by:	Date/Time: 6-27-18-1542	Company: Cardno	Received by:	Date/Time: 06-28-18 0920	Company: TADEN
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:	Company:

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler:	Lab PM: McEntee, Patrick J	Carrier Tracking No(s):	COC No: 2 of 2 COCs
Client Contact: Danyelle Phillips	Phone: 434-906-2085	E-Mail: patrick.mcentee@testamericainc.com		Page:
Company: Cardno TEC, Inc				Job #:

Address: 1658 Cole Boulevard Suite 190	Due Date Requested:
City: Golden	TAT Requested (days): 20 Business Days
State, Zip: CO 80401	
Phone: 434-906-2085	PO #:
Email: Danyelle.Phillips@cardno-gs.com	WO #: 076003.009.011
Project Name: Ravenna, OH -	Project #: 28014271
Site:	SSOW#:

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2SO3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - ph 4-5
L - EDA	Z - other (specify)

Other:

QC dup 2 coolers

Special Instructions/Note:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (Water, Solid, Oil/waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8260B - VOCs	8270D - SVOCs List 1	8270D - SVOCs List 2	8270D - SVOCs List 3	8270D - SVOCs List 4	8270D - SVOCs Full Suite	8270D_SIM - PAHs (LVI)	8082A - PCBs	8330B - Explosives/Propellants	8081B - Pesticides (LVI)	9012B - Cyanide	6010C/6020A/7470A - Total Metals	6010C/6020A/7470A - Dissolved Metals	6020A - Arsenic	7196A - Hexavalent Chromium (24 HOUR HOLD TIME)	2320B - Alkalinity	9056A - Anions (Chloride and Sulfate)	9034 - Sulfide	9056A - Nitrate (48 HOUR HOLD TIME)	6860 - Perchlorate	6010C - Phosphorous	Total Number of containers
			Preservation Code:		X	X	A	N	N	N	N	N	N	N	N	N	B	D	D	D	N	N	N	C/B	N	N	D	X
LLMW-089-062718-GW	6-27-18	1020	G	W	N	N			X	X	X	dup			X		X								X		29

dup

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological	☐ Return To Client ☐ Disposal By Lab ☐ Archive For ____ Months
Deliverable Requested: I, II, III, IV, Other (specify)	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		6-27-18/1400	Cardno		6-27-18-1428	200
2	Relinquished by:	Date/Time: 6-27-18 1542	Company: 200	Received by:	Date/Time: 06-28-18 0920	Company: TADEN
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: KMB & KF	Lab PM: McEntee, Patrick J	Carrier Tracking No(s):	COC No: 1 of 1
Client Contact: Danyelle Phillips	Phone: 434-906-2085	E-Mail: patrick.mcentee@testamericainc.com		Page:
Company: Cardno TEC, Inc				Job #:

Address: 1658 Cole Boulevard Suite 190	Due Date Requested:	Analysis Requested
City: Golden	TAT Requested (days): 20 Business Days	
State, Zip: CO 80401		
Phone: 434-906-2085	PO #:	
Email: Danyelle.Phillips@cardno-gs.com	WO #: 076003.009.011	
Project Name: Ravenna, OH -	Project #: 28014271	
Site: Ravenna	SSOW#:	

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2SO3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (Wwater, Ssolid, Owaste/oil, BT=Tissue, Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8260B - VOCs	8270D - SVOCs List 1	8270D - SVOCs List 2	8270D - SVOCs List 3	8270D - SVOCs List 4	8270D - SVOCs Full Suite	8270D_SIM - PAHs (LVI)	8082A - PCBs	8330B - Explosives/Propellants	8081B - Pesticides (LVI)	9012B - Cyanide	6010C/6020A/7470A - Total Metals	6010C/6020A/7470A - Dissolved Metals	6020A - Arsenic	7196A - Hexavalent Chromium (24 HOUR HOLD TIME)	2320B - Alkalinity	9056A - Anions (Chloride and Sulfate)	9034 - Sulfide	9058A - Nitrate (48 HOUR HOLD TIME)	8860 - Perchlorate	6010C - Phosphorous	Total Number of containers	Special Instructions/Note:
			Preservation Code:				A	N	N	N	N	N	N	N	N	N	B	D	D	D	N	N	N	C/B	N	N	D		
LL2mw-059-062618-GW	06/26/18	1228	G	W	N	N					X				X			X										5	QC dup
LL3mw-244-062618-GW	06/26/18	1331	G	W	N	N					X				X	X		X										7	D
LL3mw-237-062618-GW	06/26/18	1431	G	W	N	N									X													2	
LL3mw-234-062618-GW	06/26/18	1513	G	W	N	N											X											1	B
~~WBGmw-008-062618-GW~~	6/26/18	1445	G	W	N	N					X				X			X										5	dup
~~WBGmw-13~~																													of
FWGmw-013-062618-GW	6/26/18	1605	G	W	N	N											X											1	
																													dup

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:
Relinquished by:	Date/Time: 6-26-18/1635	Company: Cardno	Received by:	Date/Time: 6-27-18 1478	Company: 240
Relinquished by:	Date/Time: 6-27-18-1542	Company: 240	Received by:	Date/Time: 06-28-18 0920	Company: TAEN
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:	Company:

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks:

TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: SC & dep	Lab PM: McEntee, Patrick J	Carrier Tracking No(s):	COC No:
Client Contact: Danyelle Phillips	Phone: 434-906-2085	E-Mail: patrick.mcentee@testamericainc.com		Page:
Company: Cardno TEC, Inc				Job #:
Address: 1658 Cole Boulevard Suite 190	Due Date Requested:			
City: Golden	TAT Requested (days): 20 Business Days			
State, Zip: CO 80401				
Phone: 434-906-2085	PO #:			
Email: Danyelle.Phillips@cardno-gs.com	WO #: 076003.009.011			
Project Name: Ravenna, OH -	Project #: 28014271			
Site: Ravenna	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL; B - NaOH; C - Zn Acetate; D - Nitric Acid; E - NaHSO4; F - MeOH; G - Amchlor; H - Ascorbic Acid; I - Ice; J - DI Water; K - EDTA; L - EDA; M - Hexane; N - None; O - AsNaO2; P - Na2O4S; Q - Na2SO3; R - Na2S2SO3; S - H2SO4; T - TSP Dodecahydrate; U - Acetone; V - MCAA; W - ph 4-5; Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8260B - VOCs	8270D - SVOCs List 1	8270D - SVOCs List 2	8270D - SVOCs List 3	8270D - SVOCs List 4	8270D - SVOCs Full Suite	8270D_SIM - PAHs (LVI)	8082A - PCBs	8330B - Explosives/Propellants	8081B - Pesticides (LVI)	9012B - Cyanide	6010C/6020A/7470A - Total Metals	6010C/6020A/7470A - Dissolved Metals	6020A - Arsenic	7196A - Hexavalent Chromium (24 HOUR HOLD TIME)	2320B - Alkalinity	9056A - Anions (Chloride and Sulfate)	9034 - Sulfide	9056A - Nitrate (48 HOUR HOLD TIME)	6860 - Perchlorate	6010C - Phosphorous	Total Number of containers	Special Instructions/Note:
			Preservation Code:				A	N	N	N	N	N	N	N	N	N	B	D	D	D	N	N	N	C/B	N	N	D		QC-dep
LL12mw-245-062718-GW	06.27.18	0895	G	W		MS					X				X			X							X			6	
LL12mw-187-062718-GW	6-27-18	1045	G	W		MS					X							X							X			4	
LL12mw-185-062718-GW	6-27-18	1214	G	W		MS											X			X					X			3	
																											dup		

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological
Deliverable Requested: I, II, III, IV, Other (specify)

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by:	Date/Time: 6-27-18/1400	Company: Cardno	Received by:	Date/Time: 6-27-18 1928	Company: 2K
Relinquished by:	Date/Time: 6.27.18 1542	Company: 2K	Received by:	Date/Time: 06-28-18 0920	Company: TA DEN
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:	Company:

Custody Seals Intact: △ Yes △ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks:

TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

10/04/2018

Client Information	Sampler: CJ AR	Lab PM: McEntee, Patrick J	Carrier Tracking No(s):	COC No: 280-74694-24755.6
Client Contact: Pei Geng	Phone: 434-906-2085	E-Mail: patrick.mcentee@testamericainc.com		Page: Page 6 of 11
Company: ~~Laboratory Data Consultants, Inc.~~				Job #:
Address: ~~2701 Loker Ave. West Suite 220~~ 1658 Cole Blvd. Suite 190	Due Date Requested:	Analysis Requested		Preservation Codes: A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
City: ~~Carlsbad~~ Golden	TAT Requested (days):			Other:
State, Zip: ~~CA, 92010~~ CO 80401				
Phone: 434-906-2085	PO #: 0091979			
Email: danyelle.phillips@cardno-gs.com pgeng@lab-data.com	WO #:			
Project Name: Ravenna, OH	Project #: 28014271			
Site: Ravenna	SSOW#:			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	~~8260B_DOD5-VOCs~~ SVOCs List (8270D)	8260B - TCLP Volatiles Explosives (8330B)	~~6860_DOD5-Perchlorate~~ Metals (6010C) 7470A	9012B_DOD5 - Cyanide	7196A - Hexavalent Chromium	9034 - Sulfide	Total Number of containers	Special Instructions/Note:
			Preservation Code:				A	N	N	B	N	CB		QC - dup
WBGMW-006-062618-GW	6/26/18	1107	G	Water	N	N	X	X	X					
WBGMW-021-062618-GW	6/26/18	1245	G	Water	N	N	X	X	X					
WBGMW-020-062618-GW	6/26/18	1435	G	Water	N	N	X	X	X					
				Water										
				Water										
				Water										
				Water										dup
				Water										
				Water										
				Water										dup
				Water										

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify)	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	6-26-18 / 1635	Cardno		6-27-18 / 1428	TA/248
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	6-27-18 - 1542	248		06-28-18 0920	TADEN
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: SC 2SC	Lab PM: McEntee, Patrick J	Carrier Tracking No(s):	COC No: 1 of 1
Client Contact: Danyelle Phillips	Phone: 434-906-2085	E-Mail: patrick.mcentee@testamericainc.com		Page:
Company: Cardno TEC, Inc				Job #:

Address: 1658 Cole Boulevard Suite 190	Due Date Requested:	
City: Golden	TAT Requested (days): 20 Business Days	
State, Zip: CO 80401		
Phone: 434-906-2085	PO #:	
Email: Danyelle.Phillips@cardno-gs.com	WO #: 076003.009.011	
Project Name: Ravenna, OH -	Project #: 28014271	
Site:	SSOW#:	

Analysis Requested

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (Wwater, Ssolid, Owaste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8260B - VOCs	8270D - SVOCs List 1	8270D - SVOCs List 2	8270D - SVOCs List 3	8270D - SVOCs List 4	8270D - SVOCs Full Suite	8270D_SIM - PAHs (LVI)	8082A - PCBs	8330B - Explosives/Propellants	8081B - Pesticides (LVI)	9012B - Cyanide	6010C/6020A/7470A - Total Metals	6010C/6020A/7470A - Dissolved Metals	6020A - Arsenic	7196A - Hexavalent Chromium (24 HOUR HOLD TIME)	2320B - Alkalinity	9056A - Nitrate (48 HOUR HOLD TIME)	9034 - Sulfide	9056A - Nitrate (48 HOUR HOLD TIME)	8060 - Perchlorate	6010C - Phosphorus	Total Number of containers	Special Instructions/Note:
Preservation Code:					X	X	A	N	N	N	N	N	N	N	N	N	B	D	D	D	N	N	N	C/B	N	N	D		
FWGmw-019-062618-GW	6-26-18	1333	G	W		MNX						X		X			X						X			X	X	5	12 day
TB-062618-03	6-26-18	1401	G	W		MNX																							1	

QC-dep

dep

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify)	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time: 6-27-18 1428	Company TAL
Relinquished by:	Date/Time: 6-27-18 1562	Company	Received by:	Date/Time: 06-28-18 0920	Company TADEN
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler:	Phone: 434-906-2085	Lab PM: McEntee, Patrick J	E-Mail: patrick.mcentee@testamericainc.com	Carrier Tracking No(s):	COC No:	Page:	Job #:
Client Contact: Danyelle Phillips								
Company: Cardno TEC, Inc								
Address: 1658 Cole Boulevard Suite 190	Due Date Requested:							
City: Golden	TAT Requested (days): 20 Business Days							
State, Zip: CO 80401								
Phone: 434-906-2085	PO #:							
Email: Danyelle.Phillips@cardno-gs.com	WO #: 076003.009.011							
Project Name: Ravenna, OH -	Project #: 28014271							
Site: Ravenna	SSOW#:							

Analysis Requested

Preservation Codes:
A - HCL; B - NaOH; C - Zn Acetate; D - Nitric Acid; E - NaHSO4; F - MeOH; G - Amchlor; H - Ascorbic Acid; I - Ice; J - DI Water; K - EDTA; L - EDA; M - Hexane; N - None; O - AsNaO2; P - Na2O4S; Q - Na2SO3; R - Na2S2SO3; S - H2SO4; T - TSP Dodecahydrate; U - Acetone; V - MCAA; W - ph 4-5; Z - other (specify)
Other:

QC dep

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (Wwater, Ssolid, Oowaste/oil, BTtissue, Aair)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8260B - VOCs	8270D - SVOCs List 1	8270D - SVOCs List 2	8270D - SVOCs List 3	8270D - SVOCs List 4	8270D - SVOCs Full Suite	8270D_SIM - PAHs (LVI)	8082A - PCBs	8330B - Explosives/Propellants	8081B - Pesticides (LVI)	9012B - Cyanide	6010C/6020A/7470A - Total Metals	6010C/6020A/7470A - Dissolved Metals	6020A - Arsenic	7196A - Hexavalent Chromium (24 HOUR HOLD TIME)	2320B - Alkalinity	9056A - Anions (Chloride and Sulfate)	9034 - Sulfide	9056A - Nitrate (48 HOUR HOLD TIME)	8860 - Perchlorate	6010C - Phosphorous	Total Number of containers	Special Instructions/Note:
			Preservation Code:		X	X	A	N	N	N	N	N	N	N	N	N	B	D	D	D	N	N	N	C/B	N	N	D		
FWGmw-022-062618-GW	6-26-18	1448	G	W		MW	X					X		X			X	X	X							X		12	
CBLmw-002-062618-GW	6-26-18	1517	G	W		MW											X											1	
CBLmw-001-062618-GW	6-26-18	1554	G	W		MW											X											1	
CBLmw-001-D-062618-GW	6-26-18	1554	G	W		MW											X											1	
~~FB-062618-04~~	6-26-18	1402	G	W		MW	X																					1	

dep

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological	☐ Return To Client ☐ Disposal By Lab ☐ Archive For ____ Months
Deliverable Requested: I, II, III, IV, Other (specify)	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		6-26-18/1635	Cardno		6-27-18 1035	
2		6-27-18			06-28-18 0920	TADEN
3						

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: dep	Lab PM: McEntee, Patrick J	Carrier Tracking No(s):	COC No: 1 of 1
Client Contact: Danyelle Phillips	Phone: 434-906-2085	E-Mail: patrick.mcentee@testamericainc.com		Page:
Company: Cardno TEC, Inc				Job #:
Address: 1658 Cole Boulevard Suite 190	Due Date Requested:			
City: Golden	TAT Requested (days): 20 Business Days			
State, Zip: CO 80401				
Phone: 434-906-2085	PO #:			
Email: Danyelle.Phillips@cardno-gs.com	WO #: 076003.009.011			
Project Name: Ravenna, OH -	Project #: 28014271			
Site: Ravenna	SSOW#:			

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA
M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)
Other:

Analysis Requested

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8260B - VOCs	8270D - SVOCs List 1	8270D - SVOCs List 2	8270D - SVOCs List 3	8270D - SVOCs List 4	8270D - SVOCs Full Suite	8270D_SIM - PAHs (LVI)	8082A - PCBs	8330B - Explosives/Propellants	8081B - Pesticides (LVI)	9012B - Cyanide	6010C/6020A/7470A - Total Metals	6010C/6020A/7470A - Dissolved Metals	6020A - Arsenic	7196A - Hexavalent Chromium (24 HOUR HOLD TIME)	2320B - Alkalinity	9056A - Anions (Chloride and Sulfate)	9034 - Sulfide	9056A - Nitrate (48 HOUR HOLD TIME)	6860 - Perchlorate	6010C - Phosphorous	Total Number of containers	Special Instructions/Note:
				Preservation Code:			A	N	N	N	N	N	N	N	N	N	B	D	D	D	N	N	N	C/B	N	N	D		QC dep
LLmw-084-062718-GW	6-27-18	1138	G	W	N	N					X				X	X	X	X				X	X	X				11	
LLmw-081-062718-GW	6-27-18	1035	G	W	N	N									X		X											3	
LLmw-080-062718-GW	6-27-18	0812	G	W	N	N									X													2	

dep

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For ____ Months

Deliverable Requested: I, II, III, IV, Other (specify)
Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:		Method of Shipment:		
Relinquished by: [signature]	Date/Time: 6-27-18/1400	Company: Cardno	Received by: [signature]	Date/Time: 6-27-18	[signature]	Company: 2GG
Relinquished by: K [signature]	Date/Time: 6-27-18-1542	Company: 2GG	Received by: [signature]	Date/Time: 06-28-18 0920		Company: TADEN
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:		Company:
Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:			

Login Sample Receipt Checklist

Client: Cardno GS, Inc

Job Number: 280-111468-2

Login Number: 111468
List Number: 1
Creator: Dunlap, Krista M

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.	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.	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.	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 <6mm (1/4").	False	Refer to Job Narrative for details.
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	