TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

Job Number: 280-111421-2

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 3:31 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
U	Undetected at the Limit of Detection.
J	Estimated: The analyte was positively identified; the quantitation is an estimation

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: 280-111421-2

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 6/27/2018 9:15 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 8 coolers at receipt time were 0.3º C, 0.4º C, 1.3º C, 1.6º C, 1.6º C, 2.3º C, 3.2º C and 3.8º C.

Receipt Exceptions

One of three HCl preserved VOA vials for the requested 8260B VOCs analysis for DETmw-003-D-062618-GW (280-111421-16) was received with a headspace bubble greater than 6 mm in diameter. Sufficient sample volume without headspace was received to perform the requested analysis. The client was notified on 6/27/2018.

One of nine HCl preserved VOA vials for the requested 8260B VOCs analysis for parent sample LL10mw-003-062618-GW (280-111421-19) (+MS/MSD) was received with a headspace bubble greater than 6mm in diameter. Sufficient sample volume without headspace was received to perform the requested analysis for the parent sample (+MS/MSD). The client was notified on 6/27/2018.

There was no sample collection time on the container label of one of two 1L unpreserved bottles of sample volume received for the requested 8330 Nitroguanidine analysis for NTAmw-120-D-062618-GW (280-111421-24). The laboratory logged the sample collection time of the discrepant container per the chain of custody. The client was notified on 6/27/2018.

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

SDG 280-111421-2 was created to report nitrate and nitrite in accordance with method 9056A for samples FBQmw-174-062518-GW (280-111421-1) and FBQmw-175-062518-GW (280-111421-2) as requested by the client on September 26, 2018.

ANIONS (48 HOURS)

Samples FBQmw-174-062518-GW (280-111421-1) and FBQmw-175-062518-GW (280-111421-2) were analyzed for anions (48 hours) in accordance with 9056A. The samples were analyzed on 07/17/2018.

The request to report nitrate and nitrite results for samples FBQmw-174-062518-GW (280-111421-1) and FBQmw-175-062518-GW (280-111421-2) was made after the holding times had expired .

No 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: 280-111421-2

Client Sample ID: FBQmw-174-062518-GW — Lab Sample ID: 280-111421-1

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	560	H	500	100	42	ug/L	1		9056A	Total/NA

Client Sample ID: FBQmw-175-062518-GW — Lab Sample ID: 280-111421-2

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	2700	H	500	100	42	ug/L	1		9056A	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: FBQmw-174-062518-GW

Lab Sample ID: 280-111421-1

Date Collected: 06/25/18 13:40

Matrix: Water

Date Received: 06/27/18 09:15

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrate as N	**560**	**H**	500	100	42	ug/L		07/17/18 03:01	1
Nitrite as N	100	U H	500	100	49	ug/L		07/17/18 03:01	1

Client Sample ID: FBQmw-175-062518-GW

Lab Sample ID: 280-111421-2

Date Collected: 06/25/18 12:55

Matrix: Water

Date Received: 06/27/18 09:15

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrate as N	**2700**	**H**	500	100	42	ug/L		07/17/18 04:08	1
Nitrite as N	100	U H	500	100	49	ug/L		07/17/18 04:08	1

Default Detection Limits

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

TestAmerica Job ID: 280-111421-2

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 280-422335/6
Matrix: Water
Analysis Batch: 422335

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		07/16/18 14:28	1
Nitrite as N	100	U	500	100	49	ug/L		07/16/18 14:28	1

Lab Sample ID: LCS 280-422335/4
Matrix: Water
Analysis Batch: 422335

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	4880		ug/L		98	88 - 111
Nitrite as N	5000	4900		ug/L		98	87 - 111

Lab Sample ID: LCSD 280-422335/5
Matrix: Water
Analysis Batch: 422335

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	4890		ug/L		98	88 - 111	0	10
Nitrite as N	5000	4910		ug/L		98	87 - 111	0	10

Lab Sample ID: MRL 280-422335/3
Matrix: Water
Analysis Batch: 422335

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	0.213	J	mg/L		107	50 - 150
Nitrite as N	0.200	0.209	J	mg/L		104	50 - 150

General Chemistry

Analysis Batch: 422335

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-111421-1	FBQmw-174-062518-GW	Total/NA	Water	9056A	
280-111421-2	FBQmw-175-062518-GW	Total/NA	Water	9056A	
MB 280-422335/6	Method Blank	Total/NA	Water	9056A	
LCS 280-422335/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 280-422335/5	Lab Control Sample Dup	Total/NA	Water	9056A	
MRL 280-422335/3	Lab Control Sample	Total/NA	Water	9056A	

Lab Chronicle

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

TestAmerica Job ID: 280-111421-2

Client Sample ID: FBQmw-174-062518-GW

Lab Sample ID: 280-111421-1

Date Collected: 06/25/18 13:40

Matrix: Water

Date Received: 06/27/18 09:15

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	422335	07/17/18 03:01	CCJ	TAL DEN

Client Sample ID: FBQmw-175-062518-GW

Lab Sample ID: 280-111421-2

Date Collected: 06/25/18 12:55

Matrix: Water

Date Received: 06/27/18 09:15

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	422335	07/17/18 04:08	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: 280-111421-2

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: 280-111421-2

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: 280-111421-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-111421-1	FBQmw-174-062518-GW	Water	06/25/18 13:40	06/27/18 09:15
280-111421-2	FBQmw-175-062518-GW	Water	06/25/18 12:55	06/27/18 09:15

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-111421-2

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
IC Cal low_00373	06/11/18	06/04/18	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_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_00384	07/19/18	07/13/18	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_00201	06/06/18	05/30/18	Di Water, Lot na	10 mL	IC NO2 ICV_00015	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_00015	06/30/18		ERA, Lot 320616		(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 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_01284	07/17/18	07/16/18	Di Water, Lot 27	200 mL	IC Cal low_00384	20 mL	Nitrite as N	5 mg/L
							Nitrate as N	5 mg/L
.IC Cal low_00384	07/19/18	07/13/18	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

RICCA CHEMICAL COMPANY®

Arlington, TX 76012
Pocomoke City, MD 21851
Batesville, IN 47006
http://www.riccachemical.com
1-888-GO-RICCA
customerservice@riccachemical.com

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	

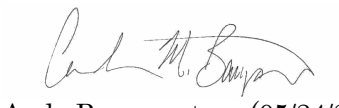
Test	Specification	Result
Appearance	Colorless liquid	Passed
Nitrogen (N)	995-1005 ppm	1000 ppm

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_00015

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:	320616
ISSUE DATE:	July 7, 2016
REVISION DATE:	Original
STARTING MATERIAL:	Sodium Nitrite ($NaNO_2$)
CERTIFIED CONCENTRATION[1]:	1000 mg/L
UNCERTAINTY[2]:	0.9%
MATRIX:	18 megohm deionized water
DENSITY:	1.0001 ± 0.0016 g/mL at 20.0°C and 761 mm Hg
TRACEABILITY[3]:	NA
NIST/SRM:	SRM not available
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 6/2018**. 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

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

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

RICCA CHEMICAL COMPANY®

Arlington, TX 76012
Pocomoke City, MD 21851
Batesville, IN 47006
http://www.riccachemical.com
1-888-GO-RICCA
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: 280-111421-2

SDG No.:

Project: Ravenna, OH

Client Sample ID	Lab Sample ID
FBQmw-174-062518-GW	280-111421-1
FBQmw-175-062518-GW	280-111421-2

Comments:

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: FBQmw-174-062518-GW
Lab Sample ID: 280-111421-1
Lab Name: TestAmerica Denver
Job No.: 280-111421-2
SDG ID.:
Matrix: Water
Date Sampled: 06/25/2018 13:40
Reporting Basis: WET
Date Received: 06/27/2018 09:15

Analyte	Result	LOQ	LOD	DL	Units	C	Q	DIL	Method
Nitrate as N	560	500	100	42	ug/L		H	1	9056A
Nitrite as N	100	500	100	49	ug/L	U	H	1	9056A

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: FBQmw-175-062518-GW
Lab Sample ID: 280-111421-2
Lab Name: TestAmerica Denver
Job No.: 280-111421-2
SDG ID.:
Matrix: Water
Date Sampled: 06/25/2018 12:55
Reporting Basis: WET
Date Received: 06/27/2018 09:15

Analyte	Result	LOQ	LOD	DL	Units	C	Q	DIL	Method
Nitrate as N	2700	500	100	42	ug/L		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.: 280-111421-2

SDG No.:

Analyst: CCJ Batch Start Date: 06/04/2018

Reporting Units: mg/L Analytical Batch No.: 417331

Sample Number	QC Type	Time	Analyte	Result	Spike Amount	(%) Recovery	Limits	Qual	Reagent
8	ICV	20:40	Nitrate as N	4.04	4.00	101	90-110		IC ICV 5_00201
			Nitrite as N	3.85	4.00	96	90-110		IC ICV 5_00201
9	ICB	21:02	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.: 280-111421-2

SDG No.:

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

Reporting Units: mg/L Analytical Batch No.: 421805

Sample Number	QC Type	Time	Analyte	Result	Spike Amount	(%) Recovery	Limits	Qual	Reagent
8	ICV	13:59	Nitrate as N	3.92	4.00	98	90-110		IC ICV 5_00204
			Nitrite as N	3.76	4.00	94	90-110		IC ICV 5_00204
9	ICB	14:22	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.: 280-111421-2

SDG No.:

Analyst: CCJ Batch Start Date: 07/16/2018

Reporting Units: mg/L Analytical Batch No.: 422335

Sample Number	QC Type	Time	Analyte	Result	Spike Amount	(%) Recovery	Limits	Qual	Reagent
1	CCV	12:37	Nitrate as N	4.88	5.00	98	90-110		IC LCS_01284
			Nitrite as N	4.90	5.00	98	90-110		IC LCS_01284
2	CCB	12:59	Nitrate as N	0.10				U	
			Nitrite as N	0.10				U	
17	CCV	22:54	Nitrate as N	4.88	5.00	98	90-110		IC LCS_01284
			Nitrite as N	4.93	5.00	99	90-110		IC LCS_01284
18	CCB	23:17	Nitrate as N	0.10				U	
			Nitrite as N	0.10				U	
29	CCV	03:23	Nitrate as N	4.85	5.00	97	90-110		IC LCS_01284
			Nitrite as N	4.92	5.00	98	90-110		IC LCS_01284
30	CCB	03:46	Nitrate as N	0.10				U	
			Nitrite as N	0.10				U	
35	CCV	05:38	Nitrate as N	4.86	5.00	97	90-110		IC LCS_01284
			Nitrite as N	4.93	5.00	99	90-110		IC LCS_01284
36	CCB	06:00	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.: 280-111421-2

SDG No.:

Method	Lab Sample ID	Analyte	Result	Qual	Units	LOQ	Dil
Batch ID: 422335 Date: 07/16/2018 14:28							
9056A	MB 280-422335/6	Nitrate as N	100	U	ug/L	500	1
9056A	MB 280-422335/6	Nitrite as N	100	U	ug/L	500	1

7A-IN
LAB CONTROL SAMPLE
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job No.: 280-111421-2

SDG No.:

Matrix: Water

Method	Lab Sample ID	Analyte	Result	C	Unit	Spike Amount	Pct. Rec.	Limits	RPD	RPD Limit	Q
Batch ID: 422335 Date: 07/16/2018 13:43											
						LCS Source: IC LCS_01284					
9056A	LCS 280-422335/4	Nitrate as N	4880		ug/L	5000	98	88-111	0	10	
9056A	LCS 280-422335/4	Nitrite as N	4900		ug/L	5000	98	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.: 280-111421-2

SDG No.:

Matrix: Water

Method	Lab Sample ID	Analyte	Result	C	Unit	Spike Amount	Pct. Rec.	Limits	RPD	RPD Limit	Q
Batch ID: 422335 Date: 07/16/2018 14:06											
						LCSD Source: IC LCS_01284					
9056A	LCSD 280-422335/5	Nitrate as N	4890		ug/L	5000	98	88-111	0	10	
9056A	LCSD 280-422335/5	Nitrite as N	4910		ug/L	5000	98	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.: 280-111421-2

SDG No.:

Matrix: Water

Method	Lab Sample ID	Analyte	Result	C	Unit	Spike Amount	Pct. Rec.	Limits	RPD	RPD Limit	Q
Batch ID: 422335 Date: 07/16/2018 13:21											
						LCS Source: IC Cal low_00384					
9056A	MRL 280-422335/3	Nitrate as N	0.213	J	mg/L	0.200	107	50-150			
9056A	MRL 280-422335/3	Nitrite as N	0.209	J	mg/L	0.200	104	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: 280-111421-2

SDG Number:

Matrix: Water Instrument ID: WC_IonChrom11

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: 280-111421-2

SDG Number:

Matrix: Water Instrument ID: WC_IonChrom11

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.: 280-111421-2

SDG No.:

Instrument ID: WC_IonChrom11 Analysis Method: 9056A

Start Date: 06/04/2018 18:03 End Date: 06/05/2018 09:59

Lab Sample Id	D/F	Type	Time	Analytes																									
				NO2-N	NO3																								
RTC 280-417331/1			18:03																										
STD 280-417331/2 IC	1		18:25	X	X																								
STD 280-417331/3 IC	1		18:47	X	X																								
STD 280-417331/4 IC	1		19:10	X	X																								
STD 280-417331/5 IC	1		19:32	X	X																								
STD 280-417331/6 IC	1		19:55	X	X																								
STD 280-417331/7 IC	1		20:17	X	X																								
ICV 280-417331/8	1		20:40	X	X																								
ICB 280-417331/9	1		21:02	X	X																								
ZZZZZZ			21:24																										
ZZZZZZ			21:47																										
ZZZZZZ			22:09																										
ZZZZZZ			22:32																										
ZZZZZZ			23:09																										
ZZZZZZ			23:31																										
ZZZZZZ			23:54																										
ZZZZZZ			00:16																										
CCV 280-417331/24			02:53																										
CCB 280-417331/25			03:15																										
ZZZZZZ			05:08																										
ZZZZZZ			05:30																										
ZZZZZZ			05:52																										
ZZZZZZ			06:15																										
ZZZZZZ			06:37																										
ZZZZZZ			07:00																										
CCV 280-417331/36			07:22																										
CCB 280-417331/37			07:44																										
ZZZZZZ			08:07																										
ZZZZZZ			08:29																										
ZZZZZZ			08:52																										
ZZZZZZ			09:14																										
CCV 280-417331/42			09:37																										
CCB 280-417331/43			09:59																										

Prep Types:
=

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job No.: 280-111421-2

SDG No.:

Instrument ID: WC_IonChrom11 Analysis Method: 9056A

Start Date: 07/11/2018 11:23 End Date: 07/12/2018 07:27

Lab Sample Id	D/F	Type	Time	Analytes																										
				NO2-N	NO3																									
RTC 280-421805/1			11:23																											
STD 280-421805/2 IC	1		11:45	X	X																									
STD 280-421805/3 IC	1		12:07	X	X																									
STD 280-421805/4 IC	1		12:30	X	X																									
STD 280-421805/5 IC	1		12:52	X	X																									
STD 280-421805/6 IC	1		13:14	X	X																									
STD 280-421805/7 IC	1		13:37	X	X																									
ICV 280-421805/8	1		13:59	X	X																									
ICB 280-421805/9	1		14:22	X	X																									
ZZZZZZ			14:44																											
ZZZZZZ			15:06																											
ZZZZZZ			15:29																											
ZZZZZZ			15:51																											
ZZZZZZ			17:26																											
ZZZZZZ			17:48																											
ZZZZZZ			18:32																											
ZZZZZZ			18:55																											
ZZZZZZ			19:20																											
ZZZZZZ			19:42																											
ZZZZZZ			20:04																											
ZZZZZZ			20:27																											
ZZZZZZ			20:49																											
CCV 280-421805/24			21:12																											
CCB 280-421805/25			21:34																											
ZZZZZZ			22:46																											
ZZZZZZ			23:53																											
ZZZZZZ			00:15																											
ZZZZZZ			00:38																											
ZZZZZZ			01:00																											
ZZZZZZ			03:37																											
ZZZZZZ			03:59																											
ZZZZZZ			04:22																											
ZZZZZZ			04:47																											
CCV 280-421805/48			07:04																											
CCB 280-421805/49			07:27																											

Prep Types:
=

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job No.: 280-111421-2

SDG No.:

Instrument ID: WC_IonChrom11 Analysis Method: 9056A

Start Date: 07/16/2018 12:37 End Date: 07/17/2018 06:00

Lab Sample Id	D/F	Type	Time	Analytes																									
				NO2-N	NO3																								
CCV 280-422335/1	1		12:37	X	X																								
CCB 280-422335/2	1		12:59	X	X																								
MRL 280-422335/3	1	T	13:21	X	X																								
LCS 280-422335/4	1	T	13:43	X	X																								
LCSD 280-422335/5	1	T	14:06	X	X																								
MB 280-422335/6	1	T	14:28	X	X																								
ZZZZZZ			19:11																										
ZZZZZZ			19:33																										
ZZZZZZ			19:55																										
ZZZZZZ			20:18																										
ZZZZZZ			20:40																										
CCV 280-422335/17	1		22:54	X	X																								
CCB 280-422335/18	1		23:17	X	X																								
ZZZZZZ			23:39																										
ZZZZZZ			00:02																										
ZZZZZZ			00:24																										
ZZZZZZ			00:47																										
ZZZZZZ			02:16																										
ZZZZZZ			02:39																										
280-111421-1	1	T	03:01	X	X																								
CCV 280-422335/29	1		03:23	X	X																								
CCB 280-422335/30	1		03:46	X	X																								
280-111421-2	1	T	04:08	X	X																								
CCV 280-422335/35	1		05:38	X	X																								
CCB 280-422335/36	1		06:00	X	X																								

Prep Types:
T = Total/NA

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: TestAmerica Denver Job No.: 280-111421-2

SDG No.:

Batch Number: 417331 Batch Start Date: 06/04/18 18:03 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 00202	IC Cal low 00373	IC CL ICV 00014	IC ICV 5 00201
STD 280-417331/2 IC		9056A		5 mL	5 mL	0.02 mL	0.02 mL		
STD 280-417331/3 IC		9056A		5 mL	5 mL	0.05 mL	0.05 mL		
STD 280-417331/4 IC		9056A		5 mL	5 mL	0.1 mL	0.1 mL		
STD 280-417331/5 IC		9056A		5 mL	5 mL	1.2 mL	0.4 mL		
STD 280-417331/6 IC		9056A		5 mL	5 mL	2.4 mL	0.8 mL		
STD 280-417331/7 IC		9056A		5 mL	5 mL	4 mL	1 mL		
ICV 280-417331/8		9056A		5 mL	5 mL			0.4 mL	0.4 mL
ICB 280-417331/9		9056A		5 mL	5 mL				

Lab Sample ID	Client Sample ID	Method Chain	Basis	IC SO4 ICV 00017					
STD 280-417331/2 IC		9056A							
STD 280-417331/3 IC		9056A							
STD 280-417331/4 IC		9056A							
STD 280-417331/5 IC		9056A							
STD 280-417331/6 IC		9056A							
STD 280-417331/7 IC		9056A							
ICV 280-417331/8		9056A		0.4 mL					
ICB 280-417331/9		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.: 280-111421-2

SDG No.:

Batch Number: 417331 Batch Start Date: 06/04/18 18:03 Batch Analyst: Jewell, Connie C

Batch Method: 9056A Batch End Date:

Batch Notes	
Eluent 1 ID	ic11 eleunt 00486
Filter ID	R6JA90771
Pipette/Syringe/Dispenser ID	wc5000ccj, wc1000cj, wc200cj
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.: 280-111421-2

SDG No.:

Batch Number: 421805 Batch Start Date: 07/11/18 11:23 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
STD 280-421805/2 IC		9056A		5 mL	5 mL	0.02 mL	0.02 mL		
STD 280-421805/3 IC		9056A		5 mL	5 mL	0.05 mL	0.05 mL		
STD 280-421805/4 IC		9056A		5 mL	5 mL	0.1 mL	0.1 mL		
STD 280-421805/5 IC		9056A		5 mL	5 mL	1.2 mL	0.4 mL		
STD 280-421805/6 IC		9056A		5 mL	5 mL	2.4 mL	0.8 mL		
STD 280-421805/7 IC		9056A		5 mL	5 mL	4 mL	1 mL		
ICV 280-421805/8		9056A		5 mL	5 mL			0.4 mL	0.4 mL
ICB 280-421805/9		9056A		5 mL	5 mL				

Lab Sample ID	Client Sample ID	Method Chain	Basis	IC SO4 ICV 00017					
STD 280-421805/2 IC		9056A							
STD 280-421805/3 IC		9056A							
STD 280-421805/4 IC		9056A							
STD 280-421805/5 IC		9056A							
STD 280-421805/6 IC		9056A							
STD 280-421805/7 IC		9056A							
ICV 280-421805/8		9056A		0.4 mL					
ICB 280-421805/9		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.: 280-111421-2

SDG No.:

Batch Number: 421805 Batch Start Date: 07/11/18 11:23 Batch Analyst: Jewell, Connie C

Batch Method: 9056A Batch End Date:

Batch Notes	
Eluent 1 ID	ic11 eluent_00495
Pipette/Syringe/Dispenser ID	5000ccj, 1000cj, 200cj
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.: 280-111421-2

SDG No.:

Batch Number: 422335 Batch Start Date: 07/16/18 12:37 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 00384	IC LCS 01284	
CCV 280-422335/1		9056A		5 mL	5 mL			5 mL	
CCB 280-422335/2		9056A		5 mL	5 mL				
MRL 280-422335/3		9056A		5 mL	5 mL	0.05 mL	0.02 mL		
LCS 280-422335/4		9056A		5 mL	5 mL			5 mL	
LCSD 280-422335/5		9056A		5 mL	5 mL			5 mL	
MB 280-422335/6		9056A		5 mL	5 mL				
CCV 280-422335/17		9056A		5 mL	5 mL			5 mL	
CCB 280-422335/18		9056A		5 mL	5 mL				
280-111421-H-1	FBQmw-174-062518-GW	9056A	T	5 mL	5 mL				
CCV 280-422335/29		9056A		5 mL	5 mL			5 mL	
CCB 280-422335/30		9056A		5 mL	5 mL				
280-111421-C-2	FBQmw-175-062518-GW	9056A	T	5 mL	5 mL				
CCV 280-422335/35		9056A		5 mL	5 mL			5 mL	
CCB 280-422335/36		9056A		5 mL	5 mL				

Batch Notes	
Eluent 1 ID	ic11 eluent 00496
Filter ID	R7MA61819
Pipette/Syringe/Dispenser ID	wc5000ccj, wc1000cj, wc200cj
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_IonChrom11\20180604-70655.b\0002.d
Lims ID: std L1
Client ID:
Sample Type: IC Calib Level: 1
Inject. Date: 04-Jun-2018 18:25:00 ALS Bottle#: 0 Worklist Smp#: 2
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Sample Info: 280-0070655-002
Operator ID: Instrument ID: WC_IonChrom11
Sublist: chrom-Anions_IC11*sub1

Method: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180604-70655.b\Anions_IC11.m
Limit Group: Wet - Anions
Last Update: 05-Jun-2018 10:41:54 Calib Date: 04-Jun-2018 20:17:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180604-70655.b\0007.d

Column 1 : Det: 0005
Process Host: CTX0302

First Level Reviewer: jewellc Date: 05-Jun-2018 10:39:59

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride	3.626	3.634	-0.008	1427670	0.2000	0.2182	
2 Chloride	5.217	5.334	-0.117	4687310	1.00	1.30	
3 Nitrite as N	6.284	6.284	0.000	1995193	0.2000	0.2128	
4 Bromide	8.076	8.034	0.042	411205	0.2000	0.2129	
5 Nitrate as N	9.501	9.325	0.176	2268699	0.2000	0.2178	
7 Orthophosphate as P	11.909	11.867	0.042	931713	0.2000	0.1992	
6 Sulfate	14.317	14.175	0.142	3549229	1.00	1.21	

Reagents:

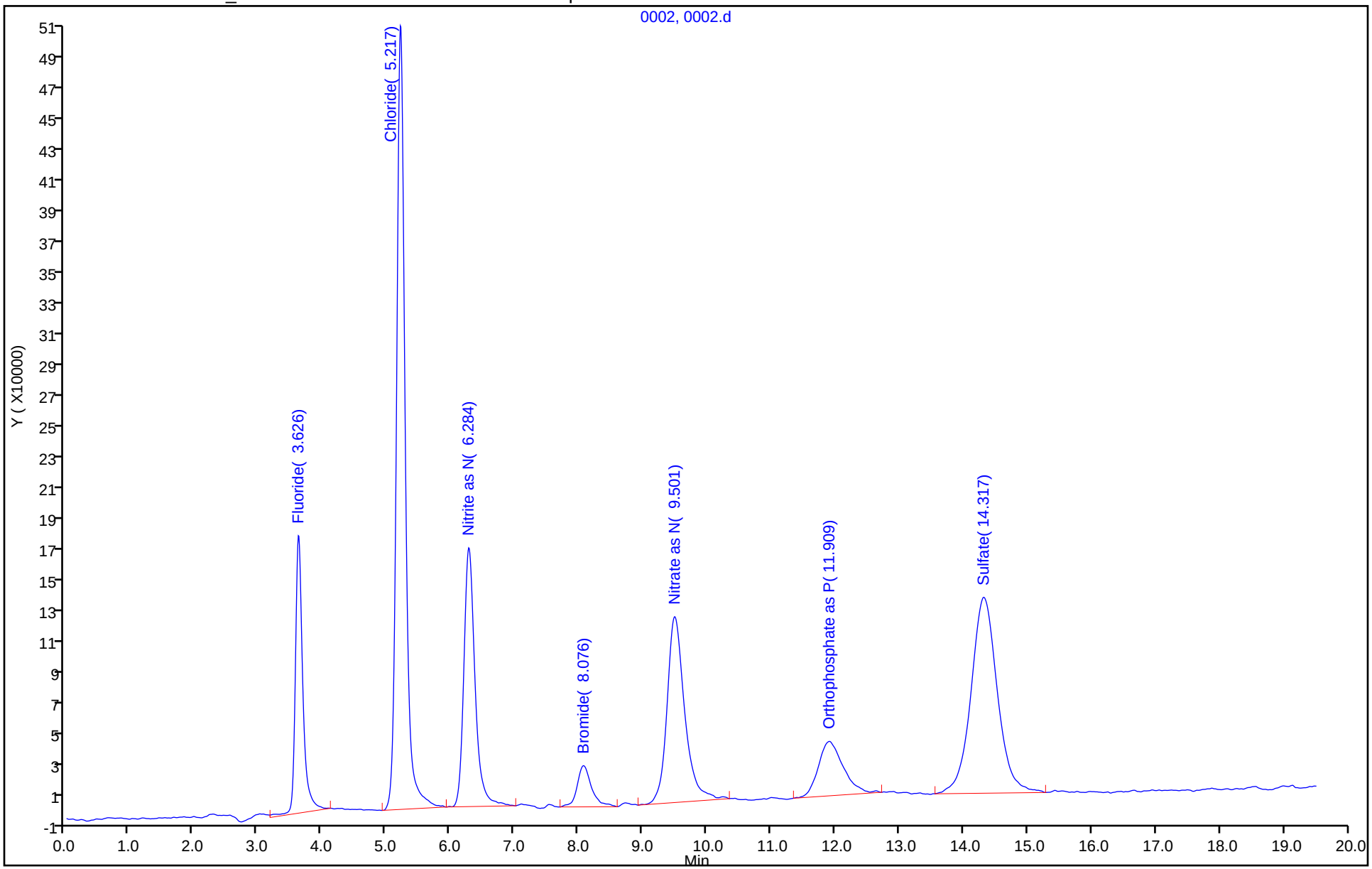
IC CAL cl/so4_00202 Amount Added: 0.02 Units: mL
IC Cal low_00373 Amount Added: 0.02 Units: mL

Report Date: 05-Jun-2018 10:41:54 Chrom Revision: 2.2 11-May-2018 08:54:46

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180604-70655.b\0002.d

Injection Date:	04-Jun-2018 18:25:00	Instrument ID:	WC_IonChrom11	Operator ID:	
Lims ID:	std L1			Worklist Smp#:	2
Client ID:					
Injection Vol:	10.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC11	Limit Group:	Wet - Anions		



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180604-70655.b\0003.d
Lims ID: std L2
Client ID:
Sample Type: IC Calib Level: 2
Inject. Date: 04-Jun-2018 18:47:00 ALS Bottle#: 0 Worklist Smp#: 3
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Sample Info: 280-0070655-003
Operator ID: Instrument ID: WC_IonChrom11
Sublist: chrom-Anions_IC11*sub1

Method: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180604-70655.b\Anions_IC11.m
Limit Group: Wet - Anions
Last Update: 05-Jun-2018 10:41:54 Calib Date: 04-Jun-2018 20:17:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180604-70655.b\0007.d

Column 1 : Det: 0005
Process Host: CTX0302

First Level Reviewer: jewellc Date: 05-Jun-2018 10:40:16

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride	3.625	3.634	-0.009	3539784	0.5000	0.4914	
2 Chloride	5.217	5.334	-0.117	11368898	2.50	2.34	
3 Nitrite as N	6.284	6.284	0.000	5057143	0.5000	0.4948	
4 Bromide	8.075	8.034	0.041	950549	0.5000	0.4845	
5 Nitrate as N	9.475	9.325	0.150	5586125	0.5000	0.4889	
7 Orthophosphate as P	11.909	11.867	0.042	2306606	0.5000	0.5087	
6 Sulfate	14.317	14.175	0.142	8466727	2.50	2.40	

Reagents:

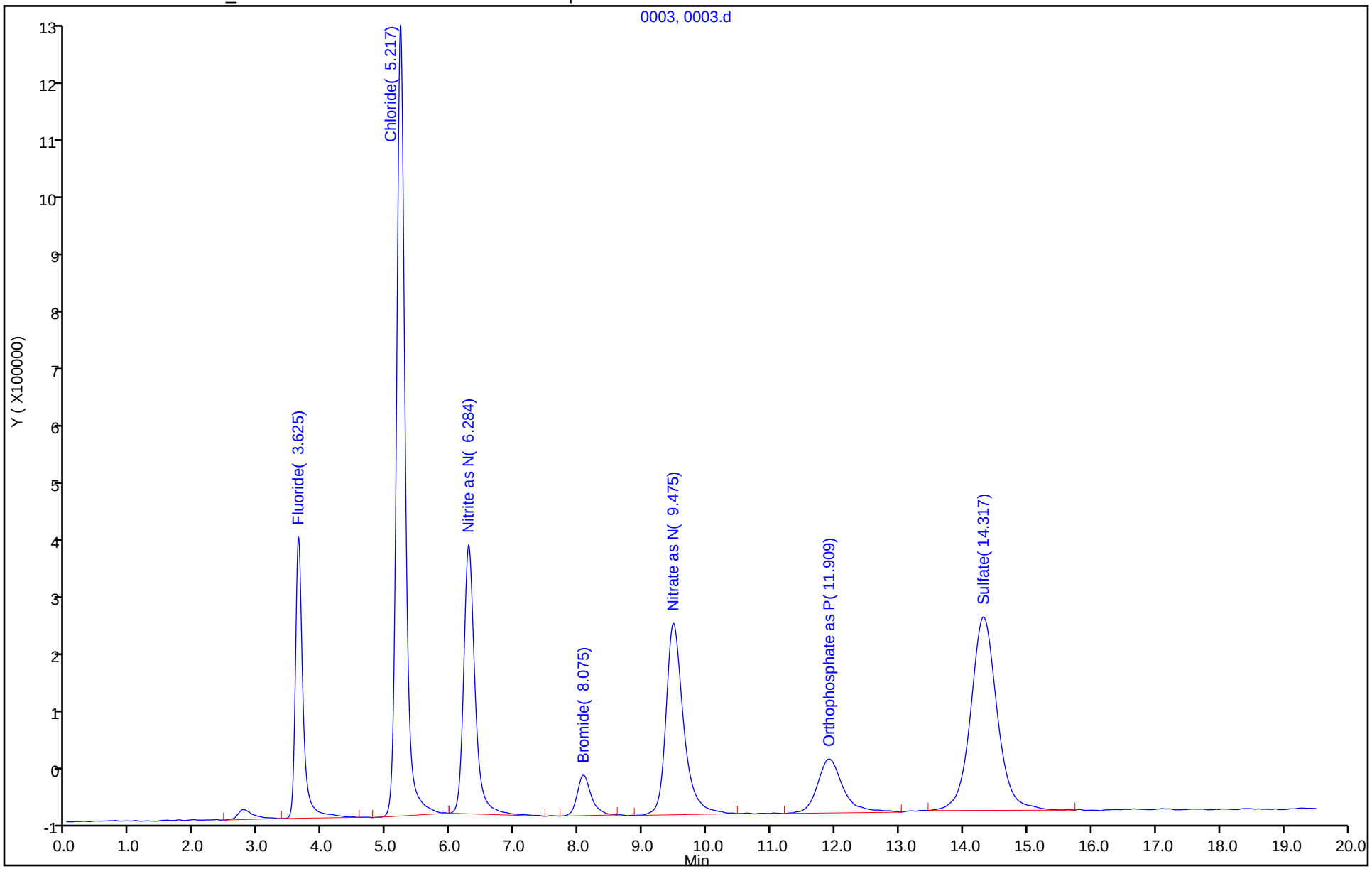
IC CAL cl/so4_00202 Amount Added: 0.05 Units: mL
IC Cal low_00373 Amount Added: 0.05 Units: mL

Report Date: 05-Jun-2018 10:41:55 Chrom Revision: 2.2 11-May-2018 08:54:46

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180604-70655.b\0003.d

Injection Date:	04-Jun-2018 18:47:00	Instrument ID:	WC_IonChrom11	Operator ID:	
Lims ID:	std L2			Worklist Smp#:	3
Client ID:					
Injection Vol:	10.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC11	Limit Group:	Wet - Anions		



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180604-70655.b\0004.d
Lims ID: std L3
Client ID:
Sample Type: IC Calib Level: 3
Inject. Date: 04-Jun-2018 19:10:00 ALS Bottle#: 0 Worklist Smp#: 4
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Sample Info: 280-0070655-004
Operator ID: Instrument ID: WC_IonChrom11
Sublist: chrom-Anions_IC11*sub1

Method: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180604-70655.b\Anions_IC11.m
Limit Group: Wet - Anions
Last Update: 05-Jun-2018 10:41:55 Calib Date: 04-Jun-2018 20:17:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180604-70655.b\0007.d

Column 1 : Det: 0005
Process Host: CTX0302

First Level Reviewer: jewellc Date: 05-Jun-2018 10:40:27

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride	3.625	3.634	-0.009	7044629	1.00	0.9448	
2 Chloride	5.217	5.334	-0.117	22891506	5.00	4.14	
3 Nitrite as N	6.275	6.284	-0.009	10203374	1.00	0.9687	
4 Bromide	8.067	8.034	0.033	1919197	1.00	0.9723	
5 Nitrate as N	9.459	9.325	0.134	11245526	1.00	0.9514	
7 Orthophosphate as P	11.900	11.867	0.033	4490154	1.00	1.00	
6 Sulfate	14.309	14.175	0.134	16978104	5.00	4.47	

Reagents:

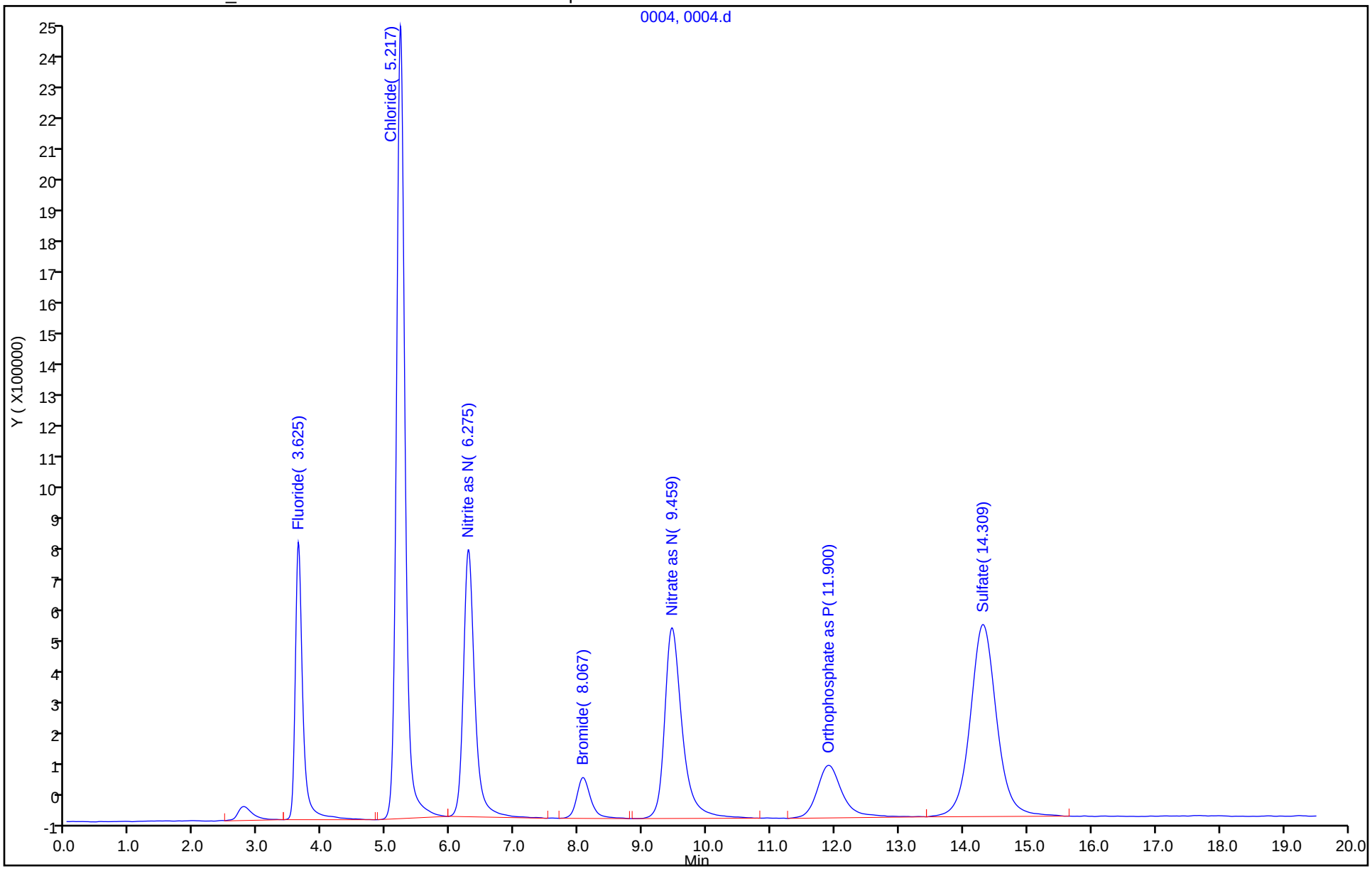
IC CAL cl/so4_00202 Amount Added: 0.10 Units: mL
IC Cal low_00373 Amount Added: 0.10 Units: mL

Report Date: 05-Jun-2018 10:41:55 Chrom Revision: 2.2 11-May-2018 08:54:46

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180604-70655.b\0004.d

Injection Date:	04-Jun-2018 19:10:00	Instrument ID:	WC_IonChrom11	Operator ID:	
Lims ID:	std L3			Worklist Smp#:	4
Client ID:					
Injection Vol:	10.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC11	Limit Group:	Wet - Anions		



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180604-70655.b\0005.d
Lims ID: std L4
Client ID:
Sample Type: IC Calib Level: 4
Inject. Date: 04-Jun-2018 19:32:00 ALS Bottle#: 0 Worklist Smp#: 5
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Sample Info: 280-0070655-005
Operator ID: Instrument ID: WC_IonChrom11
Sublist: chrom-Anions_IC11*sub1

Method: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180604-70655.b\Anions_IC11.m
Limit Group: Wet - Anions
Last Update: 05-Jun-2018 10:41:56 Calib Date: 04-Jun-2018 20:17:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180604-70655.b\0007.d

Column 1 : Det: 0005
Process Host: CTX0302

First Level Reviewer: jewellc Date: 05-Jun-2018 10:41:05

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride	3.625	3.625	0.000	29457769	4.00	3.84	
2 Chloride	5.259	5.259	0.000	346431872	60.0	54.6	
3 Nitrite as N	6.284	6.284	0.000	41292762	4.00	3.83	
4 Bromide	8.059	8.059	0.000	7809645	4.00	3.94	
5 Nitrate as N	9.409	9.409	0.000	46702524	4.00	3.85	
7 Orthophosphate as P	11.884	11.884	0.000	17464830	4.00	3.92	
6 Sulfate	14.259	14.259	0.000	225554914	60.0	55.1	

Reagents:

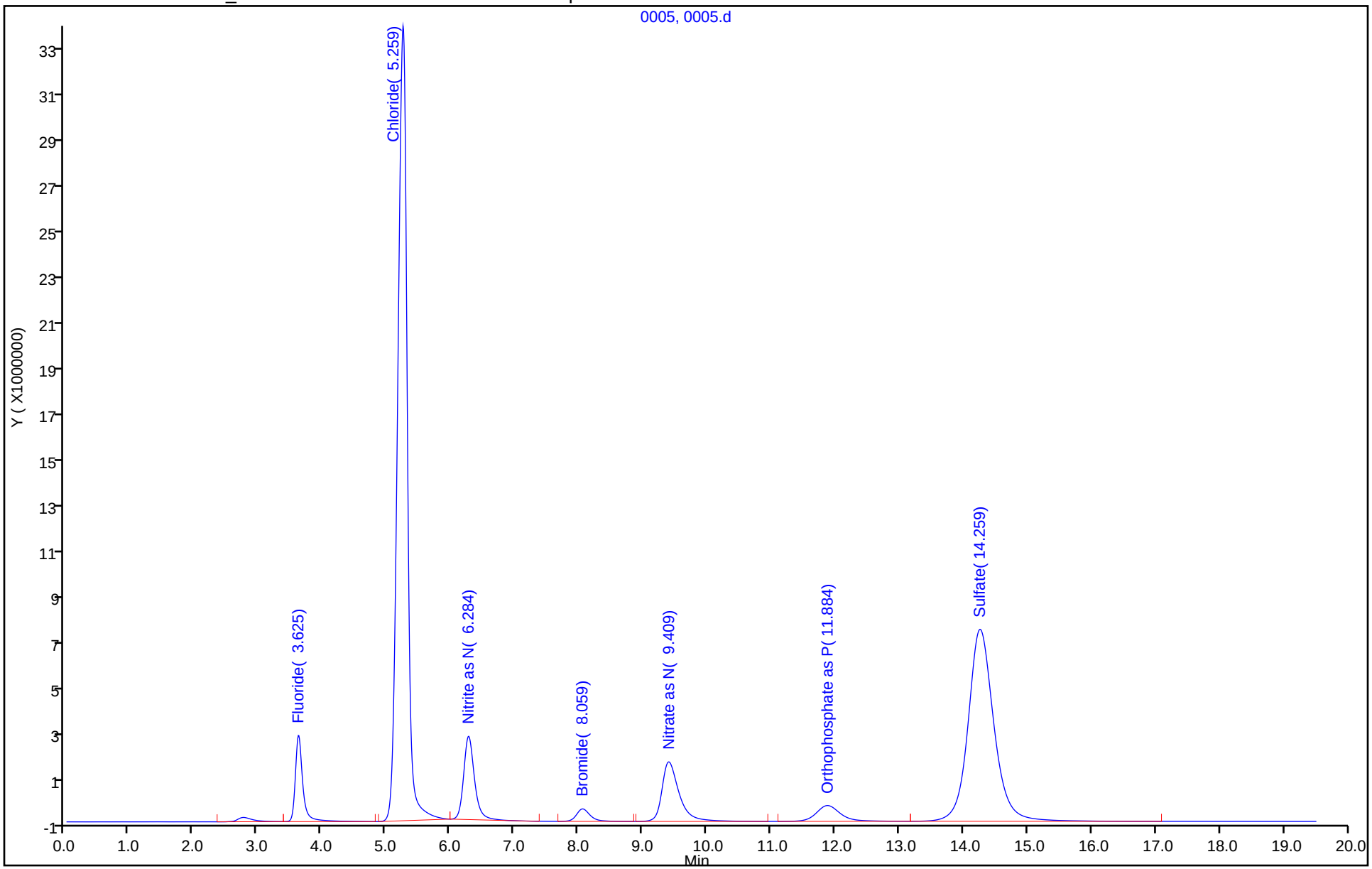
IC CAL cl/so4_00202 Amount Added: 1.20 Units: mL
IC Cal low_00373 Amount Added: 0.40 Units: mL

Report Date: 05-Jun-2018 10:41:56 Chrom Revision: 2.2 11-May-2018 08:54:46

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180604-70655.b\0005.d

Injection Date:	04-Jun-2018 19:32:00	Instrument ID:	WC_IonChrom11	Operator ID:	
Lims ID:	std L4			Worklist Smp#:	5
Client ID:					
Injection Vol:	10.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC11	Limit Group:	Wet - Anions		



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180604-70655.b\0006.d
Lims ID: std L5
Client ID:
Sample Type: IC Calib Level: 5
Inject. Date: 04-Jun-2018 19:55:00 ALS Bottle#: 0 Worklist Smp#: 6
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Sample Info: 280-0070655-006
Operator ID: Instrument ID: WC_IonChrom11
Sublist: chrom-Anions_IC11*sub1

Method: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180604-70655.b\Anions_IC11.m
Limit Group: Wet - Anions
Last Update: 05-Jun-2018 10:41:56 Calib Date: 04-Jun-2018 20:17:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180604-70655.b\0007.d

Column 1 : Det: 0005
Process Host: CTX0302

First Level Reviewer: jewellc Date: 05-Jun-2018 10:41:23

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride	3.634	3.625	0.009	61665171	8.00	8.01	
2 Chloride	5.300	5.259	0.041	754417365	120.0	118.3	
3 Nitrite as N	6.284	6.284	0.000	86797475	8.00	8.02	
4 Bromide	8.050	8.059	-0.009	15906555	8.00	8.02	
5 Nitrate as N	9.359	9.409	-0.050	97515694	8.00	8.00	
7 Orthophosphate as P	11.867	11.884	-0.017	35450995	8.00	7.97	
6 Sulfate	14.225	14.259	-0.034	481200100	120.0	117.2	

Reagents:

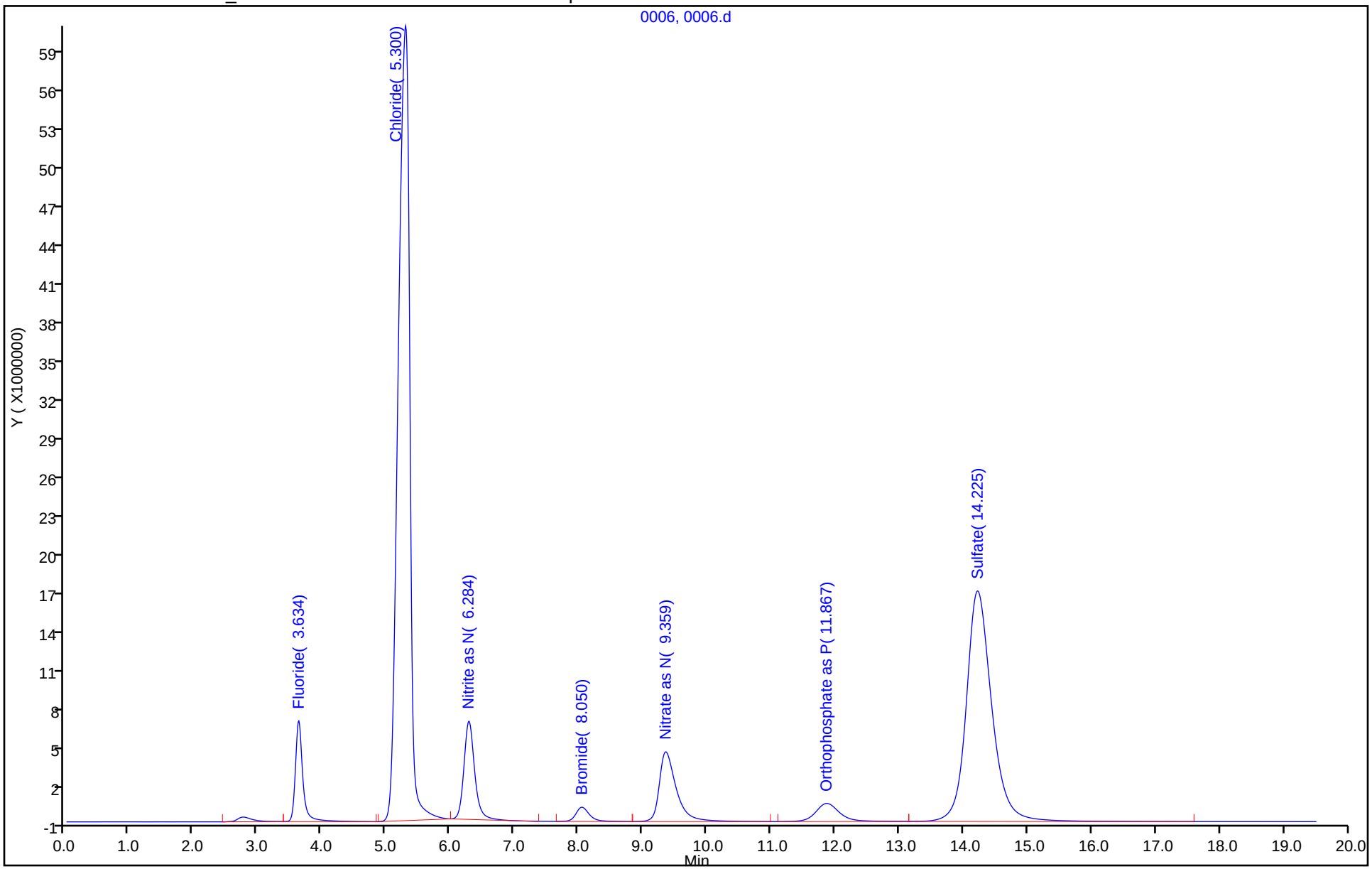
IC CAL cl/so4_00202 Amount Added: 2.40 Units: mL
IC Cal low_00373 Amount Added: 0.80 Units: mL

Report Date: 05-Jun-2018 10:41:56 Chrom Revision: 2.2 11-May-2018 08:54:46

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180604-70655.b\0006.d

Injection Date:	04-Jun-2018 19:55:00	Instrument ID:	WC_IonChrom11	Operator ID:	
Lims ID:	std L5			Worklist Smp#:	6
Client ID:					
Injection Vol:	10.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC11	Limit Group:	Wet - Anions		



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180604-70655.b\0007.d
Lims ID: std L6
Client ID:
Sample Type: IC Calib Level: 6
Inject. Date: 04-Jun-2018 20:17:00 ALS Bottle#: 0 Worklist Smp#: 7
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Sample Info: 280-0070655-007
Misc. Info.: 9675
Operator ID: Instrument ID: WC_IonChrom11
Sublist: chrom-Anions_IC11*sub1

Method: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180604-70655.b\Anions_IC11.m
Limit Group: Wet - Anions
Last Update: 05-Jun-2018 10:41:54 Calib Date: 04-Jun-2018 20:17:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180604-70655.b\0007.d

Column 1 : Det: 0005
Process Host: CTX0302

First Level Reviewer: jewellc Date: 05-Jun-2018 10:41:54

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride	3.634	3.634	0.000	78528888	10.0	10.2	
2 Chloride	5.334	5.334	0.000	1327315218	200.0	207.7	
3 Nitrite as N	6.284	6.284	0.000	110138306	10.0	10.2	
4 Bromide	8.034	8.034	0.000	19992843	10.0	10.1	
5 Nitrate as N	9.325	9.325	0.000	124303667	10.0	10.2	
7 Orthophosphate as P	11.867	11.867	0.000	44944367	10.0	10.1	
6 Sulfate	14.175	14.175	0.000	854981472	200.0	208.0	

Reagents:

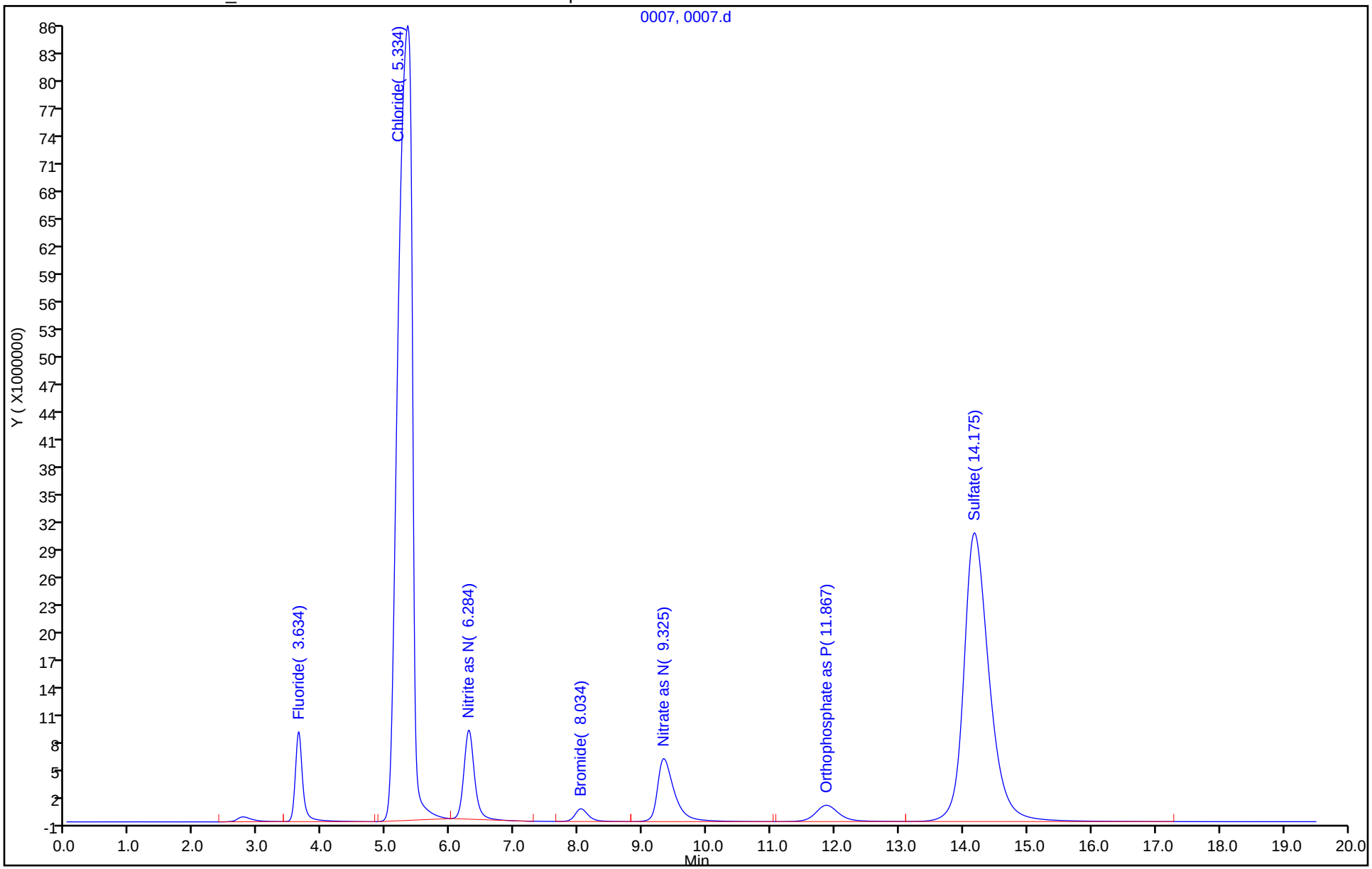
IC CAL cl/so4_00202 Amount Added: 4.00 Units: mL
IC Cal low_00373 Amount Added: 1.00 Units: mL

Report Date: 05-Jun-2018 10:41:54 Chrom Revision: 2.2 11-May-2018 08:54:46

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180604-70655.b\0007.d

Injection Date:	04-Jun-2018 20:17:00	Instrument ID:	WC_IonChrom11	Operator ID:	
Lims ID:	std L6			Worklist Smp#:	7
Client ID:					
Injection Vol:	10.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC11	Limit Group:	Wet - Anions		



TestAmerica Denver — New calibration curve — TestAmerica

417331 / 417332

IC Instrument Information

WL: 70655 **Inst ID:** 11 **Analysis Date:** 06/04/18 **Analyst:** TT

Rush	Job No.	Samples	Anions	QC Req	HT Exp
□	110057	11	F Cl NO2 Br NO3 PO4 (SO4)	(MS/D) 2	~~Client~~ 06/04/18 TT
□	110427	1	F Cl NO2 Br (NO3) PO4 SO4	(MS/D) 3	Ran dilution out of HT
EB □→	110402	1	F Cl NO2 Br NO3 (PO4) SO4	MS/D	Ran these samples out of HT
Dissolve	110287	1	F Cl NO2 Br NO3 (PO4) SO4	MS/D	
conductivity →	110346	3	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	
□			F Cl NO2 Br NO3 PO4 SO4	MS/D	

Dilutions

Job No.	Samples	Anions	Dilution	Reason
✓ 110287	1	F Cl NO2 Br NO3 (PO4) SO4	10x	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		
		F Cl NO2 Br NO3 PO4 SO4		
		F Cl NO2 Br NO3 PO4 SO4		

Phuriya 6/6/18

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Rev. 1, 8/11/2014

New calibration curve

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

IC Instrument Information

WL: 70655 **Inst ID:** 11 **Analysis Date:** 06/04/18 **Analyst:** TP

	Rush	Job No.	Samples	Anions	QC Req		HT Exp
	☐	110057	11	F Cl NO2 Br NO3 PO4 (SO4)	(MS/D)	2	~~Client~~ 06/04/18 TP
	☐	110427	1	F Cl NO2 Br (NO3) PO4 SO4	(MS/D)	3	Ran dilution out of HT
EB	☐→	110402	1	F Cl NO2 Br NO3 (PO4) SO4	MS/D		Ran these samples out of HT
Dissolve		110287	1	F Cl NO2 Br NO3 (PO4) SO4	MS/D		
Conductivity→	☐	110346	3	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		
	☐			F Cl NO2 Br NO3 PO4 SO4	MS/D		

Dilutions

	Job No.	Samples	Anions	Dilution	Reason
✓	110287	1	F Cl NO2 Br NO3 (PO4) SO4	10x	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		
			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_IonChrom11\20180604-70655.b\Anions_IC11.m

Instrument:	WC_IonChrom11	Lims Location:	280
Lock State:	Unlocked	Cpnd Order:	Retention Time
Integrator:	Falcon	Last Modified:	05-Jun-2018 10:36:54

No.Compounds:7

Initial Calibration Batches

Ical Batch: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180604-70655.b
Inj Date : 04-Jun-2018 18:25:00, Sublist: chrom-Anions_IC11*sub1

Detector 1: 0005

	Wet - Anions				Wet - Anions 28D			
Compound	b	M1	M2	Err	b	M1	M2	Err
1 Fluoride	-259177	7730758		0.999	-259177	7730758		0.999
2 Chloride	-363728	6406527		0.997	-363728	6406527		0.997
3 Nitrite as N	-316162	1085998		0.999	-316162	1085998		0.999
4 Bromide	-11482	1985607		1.000	-11482	1985607		1.000
5 Nitrate as N	-396639	1223637		0.999	-396639	1223637		0.999
7 Orthophosphate as P	46383	4443475		1.000	46383	4443475		1.000
6 Sulfate	-142556	4116561		0.998	-142556	4116561		0.998

Amrita
6/6/18

TestAmerica Laboratories
Initial Calibration Summary Report

Method: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180604-70655.b\Anions_IC11.m

Instrument:	WC_IonChrom11	Lims Location:	280
Lock State:	Unlocked	Cpnd Order:	Retention Time
Integrator:	Falcon	Last Modified:	05-Jun-2018 10:36:54

No.Compounds:7

Initial Calibration Batches

Ical Batch: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180604-70655.b
Inj Date : 04-Jun-2018 18:25:00, Sublist: chrom-Anions_IC11*sub1

Detector 1: 0005

	Wet - Anions				Wet - Anions 28D			
Compound	b	M1	M2	Err	b	M1	M2	Err
1 Fluoride	-259177	7730758		0.999	-259177	7730758		0.999
2 Chloride	-363726	6406527		0.997	-363726	6406527		0.997
3 Nitrite as N	-316162	1085996		0.999	-316162	1085996		0.999
4 Bromide	-11482	1985607		1.000	-11482	1985607		1.000
5 Nitrate as N	-396639	1223637		0.999	-396639	1223637		0.999
7 Orthophosphate as P	46383	4443475		1.000	46383	4443475		1.000
6 Sulfate	-142556	4116561		0.998	-142556	4116561		0.998

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180604-70655.b\0008.d
Lims ID: ICV
Client ID:
Sample Type: ICV
Inject. Date: 04-Jun-2018 20:40:00 ALS Bottle#: 0 Worklist Smp#: 8
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Sample Info: 280-0070655-008
Misc. Info.: 309
Operator ID: Instrument ID: WC_IonChrom11
Sublist:

Method: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180604-70655.b\Anions_IC11.m
Limit Group: Wet - Anions
Last Update: 05-Jun-2018 10:44:25 Calib Date: 04-Jun-2018 20:17:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180604-70655.b\0007.d

Column 1 : Det: 0005
Process Host: CTX0302

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride	3.625	3.625	0.000	29784355	4.00	3.89	
2 Chloride	5.267	5.267	0.000	474323592	80.0	74.6	
3 Nitrite as N	6.275	6.275	0.000	41515238	4.00	3.85	
4 Bromide	8.050	8.050	0.000	8226331	4.00	4.15	
5 Nitrate as N	9.392	9.392	0.000	49065909	4.00	4.04	
7 Orthophosphate as P	11.884	11.884	0.000	17800442	4.00	4.00	
6 Sulfate	14.250	14.250	0.000	305342736	80.0	74.5	

Reagents:

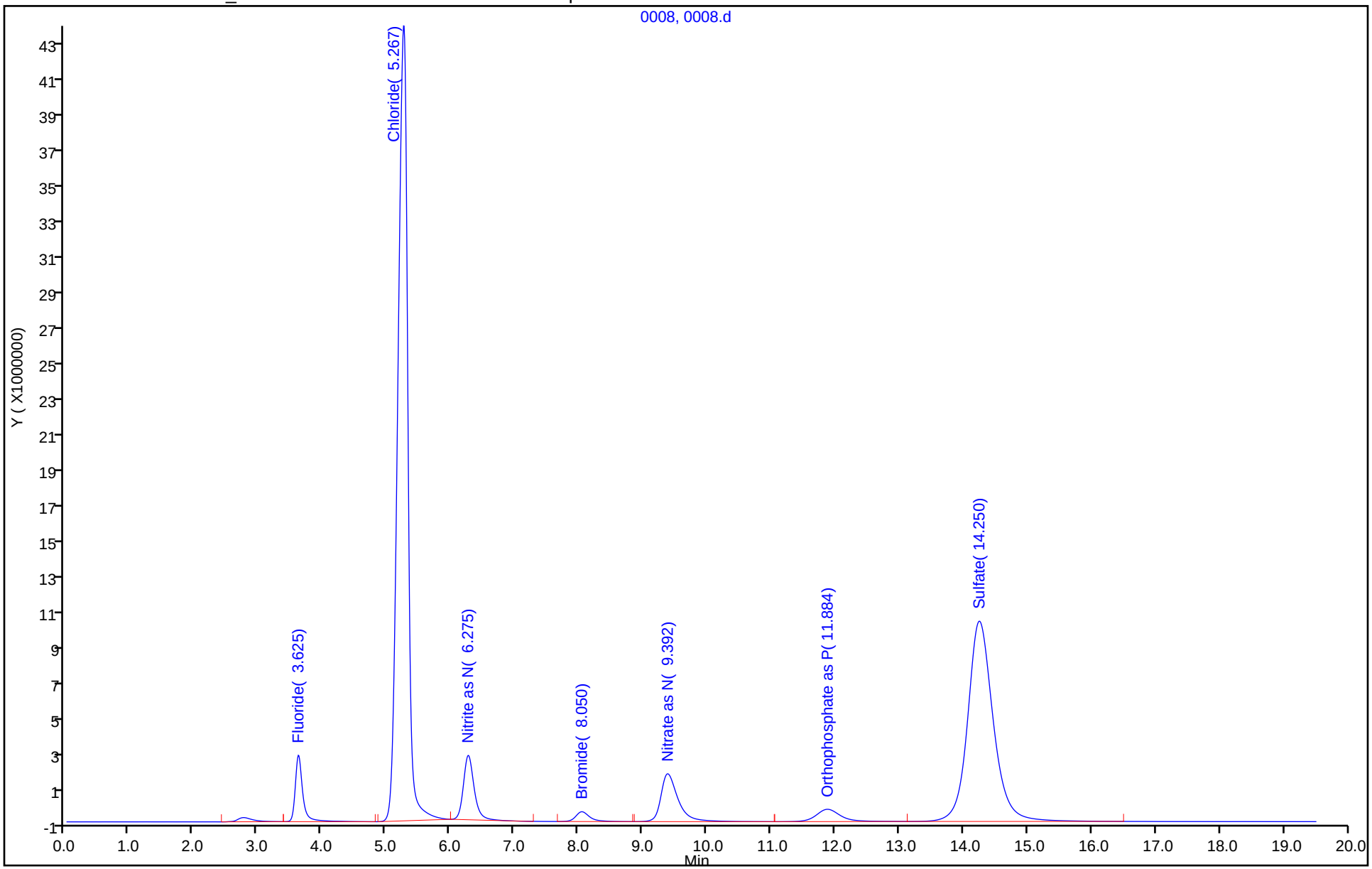
IC CL ICV_00014	Amount Added:	0.40	Units: mL
IC SO4 ICV_00017	Amount Added:	0.40	Units: mL
IC ICV 5_00201	Amount Added:	0.40	Units: mL

Report Date: 05-Jun-2018 10:44:25 Chrom Revision: 2.2 11-May-2018 08:54:46

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180604-70655.b\0008.d

Injection Date:	04-Jun-2018 20:40:00	Instrument ID:	WC_IonChrom11	Operator ID:	
Lims ID:	ICV			Worklist Smp#:	8
Client ID:					
Injection Vol:	10.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC11	Limit Group:	Wet - Anions		



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180604-70655.b\0009.d
Lims ID: ICB
Client ID:
Sample Type: ICB
Inject. Date: 04-Jun-2018 21:02:00 ALS Bottle#: 0 Worklist Smp#: 9
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Sample Info: 280-0070655-009
Misc. Info.: 966
Operator ID: Instrument ID: WC_IonChrom11

Method: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180604-70655.b\Anions_IC11.m
Limit Group: Wet - Anions
Last Update: 05-Jun-2018 10:44:25 Calib Date: 04-Jun-2018 20:17:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180604-70655.b\0007.d

Column 1 : Det: 0005
Process Host: CTX0302

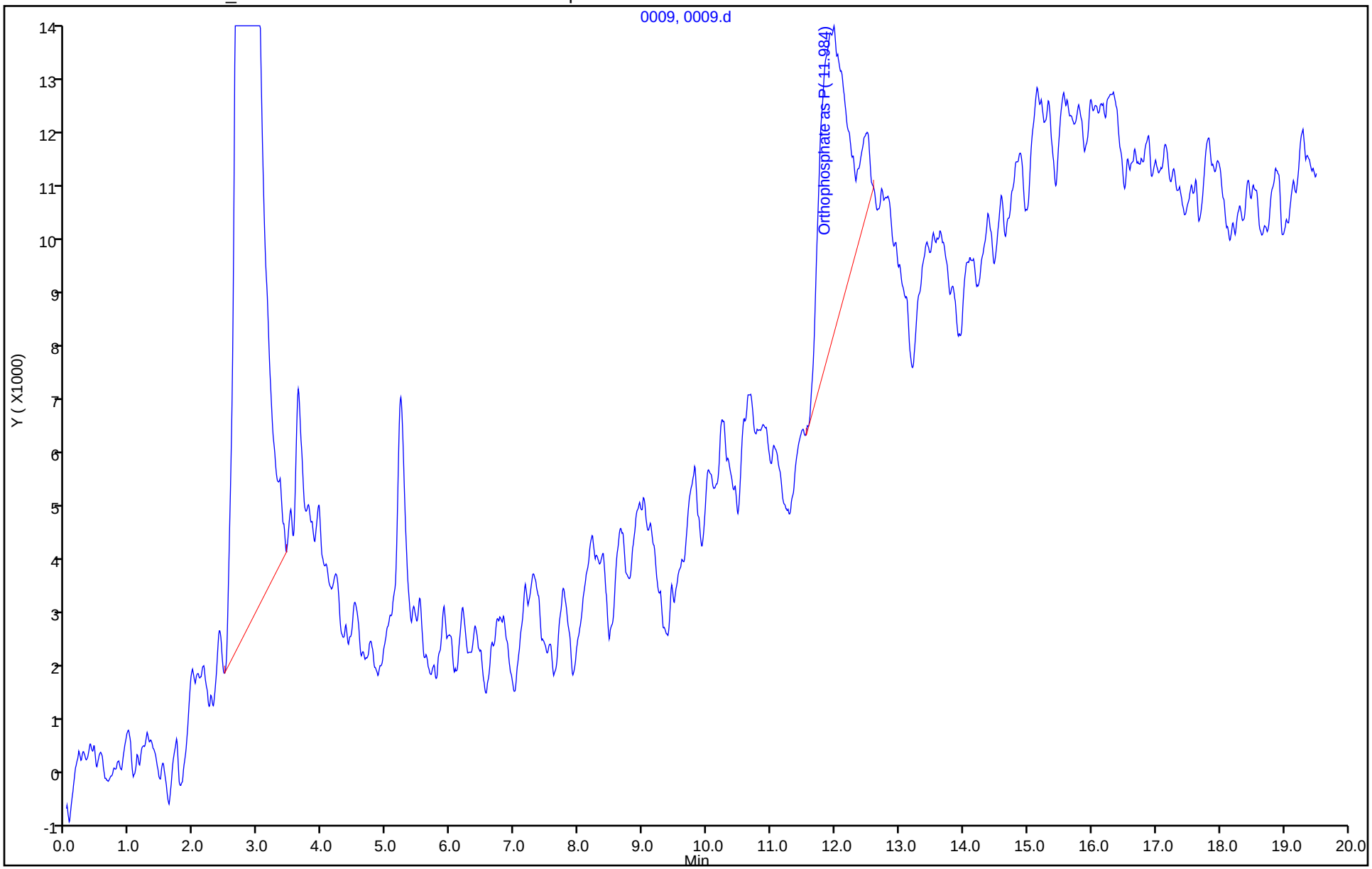
Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride		3.625				ND	
2 Chloride		5.259				ND	
3 Nitrite as N		6.284				ND	
4 Bromide		8.059				ND	
5 Nitrate as N		9.409				ND	
7 Orthophosphate as P	11.984	11.884	0.100	168048		0.0274	
6 Sulfate		14.259				ND	

Report Date: 05-Jun-2018 10:44:26 Chrom Revision: 2.2 11-May-2018 08:54:46

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180604-70655.b\0009.d

Injection Date:	04-Jun-2018 21:02:00	Instrument ID:	WC_IonChrom11	Operator ID:	
Lims ID:	ICB			Worklist Smp#:	9
Client ID:					
Injection Vol:	10.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC11	Limit Group:	Wet - Anions		



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180711-71878.b\0002.d
Lims ID: std L1
Client ID:
Sample Type: IC Calib Level: 1
Inject. Date: 11-Jul-2018 11:45:00 ALS Bottle#: 0 Worklist Smp#: 2
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Sample Info: 280-0071878-002
Operator ID: Instrument ID: WC_IonChrom11
Sublist: chrom-Anions_IC11*sub1

Method: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180711-71878.b\Anions_IC11.m
Limit Group: Wet - Anions
Last Update: 11-Jul-2018 14:06:29 Calib Date: 11-Jul-2018 13:37:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180711-71878.b\0007.d

Column 1 : Det: 0005
Process Host: CTX0301

First Level Reviewer: jewellc Date: 11-Jul-2018 14:02:40

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride	3.559	3.559	0.000	1227922	0.2000	0.2123	
2 Chloride	5.017	5.059	-0.042	4423033	1.00	1.29	
3 Nitrite as N	5.992	5.992	0.000	2106602	0.2000	0.2150	
4 Bromide	7.667	7.617	0.050	425775	0.2000	0.1967	
5 Nitrate as N	8.951	8.800	0.151	2321576	0.2000	0.2116	
7 Orthophosphate as P	10.817	10.784	0.033	1171025	0.2000	0.2051	
6 Sulfate	12.901	12.800	0.101	3199522	1.00	1.20	

Reagents:

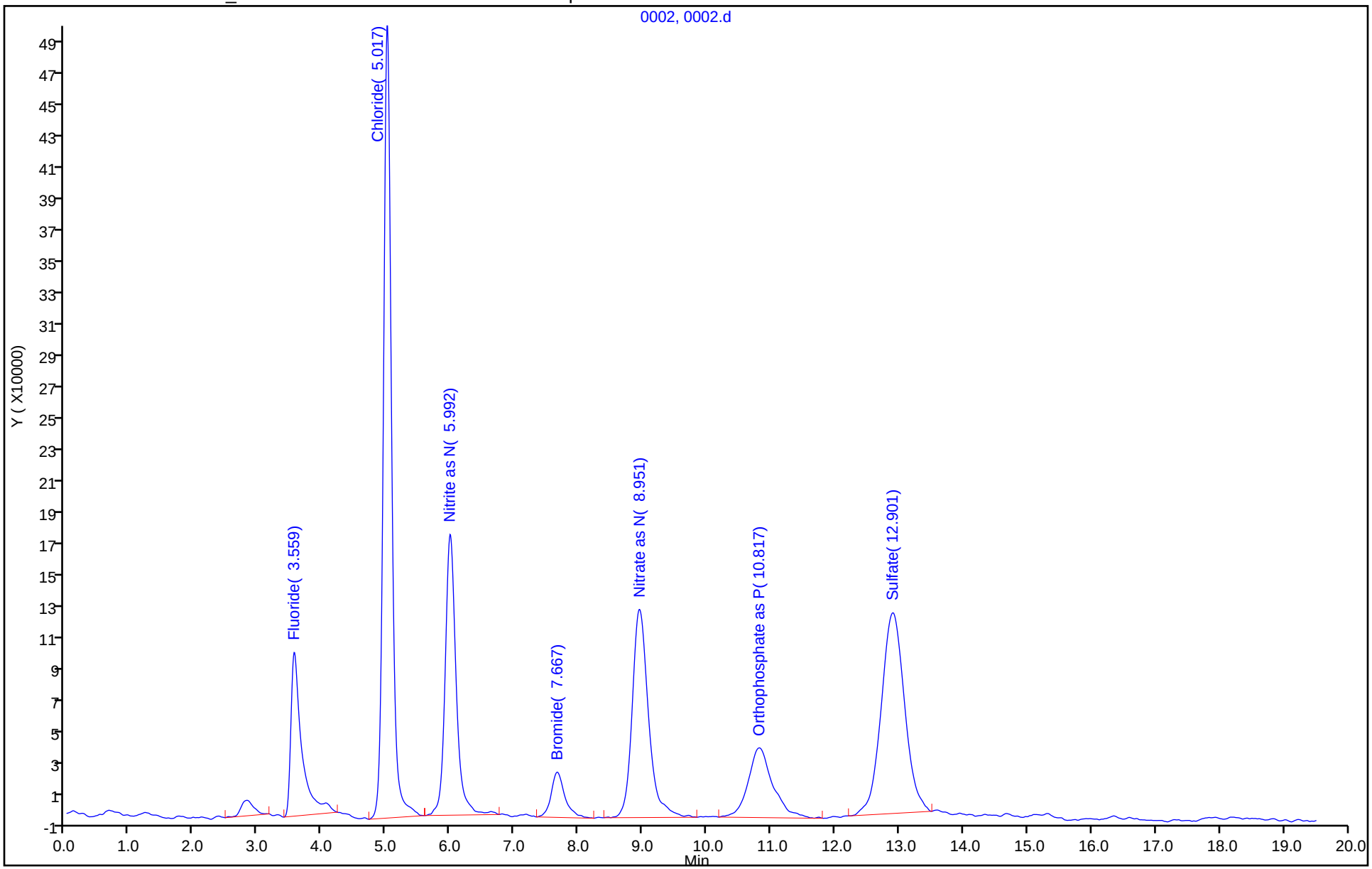
IC CAL cl/so4_00207 Amount Added: 0.02 Units: mL
IC Cal low_00383 Amount Added: 0.02 Units: mL

Report Date: 11-Jul-2018 14:06:29 Chrom Revision: 2.2 07-Jun-2018 07:41:54

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180711-71878.b\0002.d

Injection Date:	11-Jul-2018 11:45:00	Instrument ID:	WC_IonChrom11	Operator ID:	
Lims ID:	std L1			Worklist Smp#:	2
Client ID:					
Injection Vol:	10.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC11	Limit Group:	Wet - Anions		



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180711-71878.b\0003.d
Lims ID: std L2
Client ID:
Sample Type: IC Calib Level: 2
Inject. Date: 11-Jul-2018 12:07:00 ALS Bottle#: 0 Worklist Smp#: 3
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Sample Info: 280-0071878-003
Operator ID: Instrument ID: WC_IonChrom11
Sublist: chrom-Anions_IC11*sub1

Method: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180711-71878.b\Anions_IC11.m
Limit Group: Wet - Anions
Last Update: 11-Jul-2018 14:06:30 Calib Date: 11-Jul-2018 13:37:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180711-71878.b\0007.d

Column 1 : Det: 0005
Process Host: CTX0301

First Level Reviewer: jewellc Date: 11-Jul-2018 14:02:51

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride	3.559	3.559	0.000	3251549	0.5000	0.5019	
2 Chloride	5.017	5.059	-0.042	11107693	2.50	2.36	
3 Nitrite as N	5.992	5.992	0.000	5016849	0.5000	0.4862	
4 Bromide	7.659	7.617	0.042	1037180	0.5000	0.5160	
5 Nitrate as N	8.926	8.800	0.126	5726228	0.5000	0.4946	
7 Orthophosphate as P	10.817	10.784	0.033	2449245	0.5000	0.5142	
6 Sulfate	12.901	12.800	0.101	8339207	2.50	2.45	

Reagents:

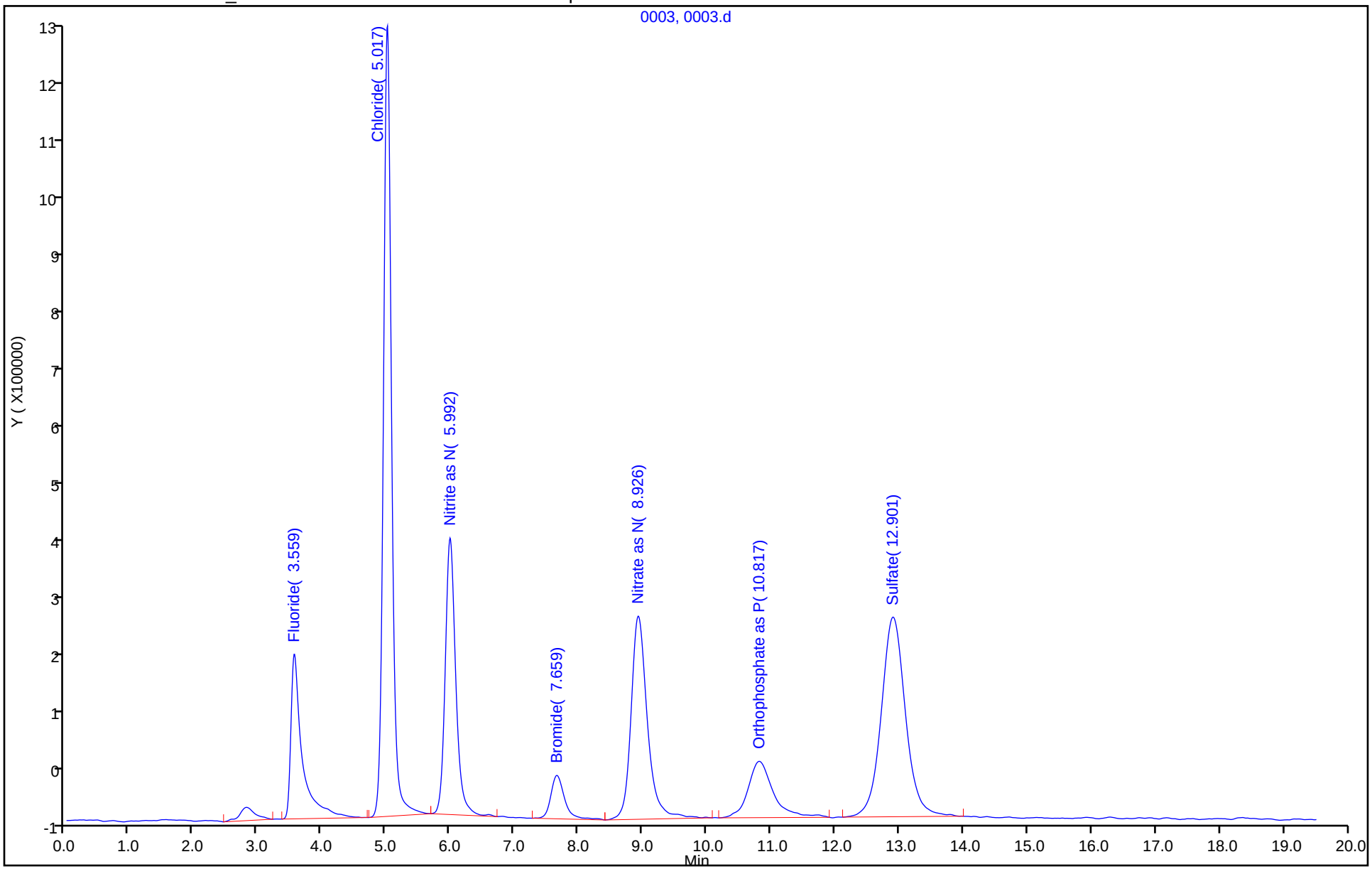
IC CAL cl/so4_00207 Amount Added: 0.05 Units: mL
IC Cal low_00383 Amount Added: 0.05 Units: mL

Report Date: 11-Jul-2018 14:06:30 Chrom Revision: 2.2 07-Jun-2018 07:41:54

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180711-71878.b\0003.d

Injection Date:	11-Jul-2018 12:07:00	Instrument ID:	WC_IonChrom11	Operator ID:	
Lims ID:	std L2			Worklist Smp#:	3
Client ID:					
Injection Vol:	10.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC11	Limit Group:	Wet - Anions		



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180711-71878.b\0004.d
Lims ID: std L3
Client ID:
Sample Type: IC Calib Level: 3
Inject. Date: 11-Jul-2018 12:30:00 ALS Bottle#: 0 Worklist Smp#: 4
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Sample Info: 280-0071878-004
Operator ID: Instrument ID: WC_IonChrom11
Sublist: chrom-Anions_IC11*sub1

Method: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180711-71878.b\Anions_IC11.m
Limit Group: Wet - Anions
Last Update: 11-Jul-2018 14:06:31 Calib Date: 11-Jul-2018 13:37:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180711-71878.b\0007.d

Column 1 : Det: 0005
Process Host: CTX0301

First Level Reviewer: jewellc Date: 11-Jul-2018 14:03:03

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride	3.559	3.559	0.000	6368966	1.00	0.9482	
2 Chloride	5.017	5.059	-0.042	22435309	5.00	4.17	
3 Nitrite as N	5.992	5.992	0.000	10231232	1.00	0.9720	
4 Bromide	7.650	7.617	0.033	1956169	1.00	1.00	
5 Nitrate as N	8.900	8.800	0.100	11453683	1.00	0.9707	
7 Orthophosphate as P	10.817	10.784	0.033	4280978	1.00	0.9572	
6 Sulfate	12.909	12.800	0.109	16517305	5.00	4.43	

Reagents:

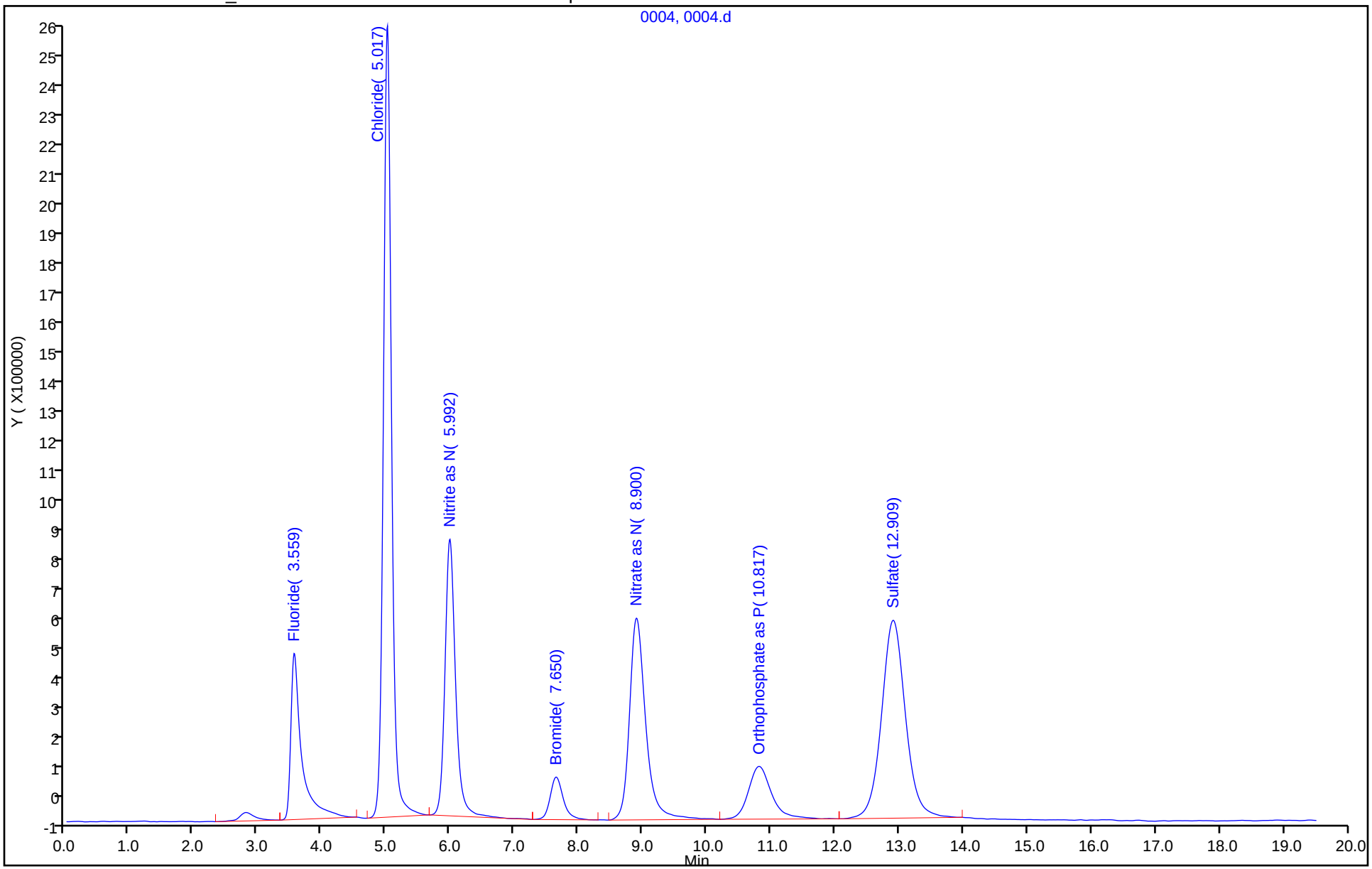
IC CAL cl/so4_00207 Amount Added: 0.10 Units: mL
IC Cal low_00383 Amount Added: 0.10 Units: mL

Report Date: 11-Jul-2018 14:06:31 Chrom Revision: 2.2 07-Jun-2018 07:41:54

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180711-71878.b\0004.d

Injection Date:	11-Jul-2018 12:30:00	Instrument ID:	WC_IonChrom11	Operator ID:	
Lims ID:	std L3			Worklist Smp#:	4
Client ID:					
Injection Vol:	10.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC11	Limit Group:	Wet - Anions		



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180711-71878.b\0005.d
Lims ID: std L4
Client ID:
Sample Type: IC Calib Level: 4
Inject. Date: 11-Jul-2018 12:52:00 ALS Bottle#: 0 Worklist Smp#: 5
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Sample Info: 280-0071878-005
Operator ID: Instrument ID: WC_IonChrom11
Sublist: chrom-Anions_IC11*sub1

Method: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180711-71878.b\Anions_IC11.m
Limit Group: Wet - Anions
Last Update: 11-Jul-2018 14:06:32 Calib Date: 11-Jul-2018 13:37:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180711-71878.b\0007.d

Column 1 : Det: 0005
Process Host: CTX0301

First Level Reviewer: jewellc Date: 11-Jul-2018 14:03:13

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride	3.559	3.559	0.000	26887613	4.00	3.89	
2 Chloride	5.034	5.034	0.000	336688252	60.0	54.5	
3 Nitrite as N	5.984	5.984	0.000	41077249	4.00	3.85	
4 Bromide	7.626	7.626	0.000	7570461	4.00	3.93	
5 Nitrate as N	8.842	8.842	0.000	46261319	4.00	3.86	
7 Orthophosphate as P	10.801	10.801	0.000	16483568	4.00	3.91	
6 Sulfate	12.876	12.876	0.000	224977149	60.0	55.0	

Reagents:

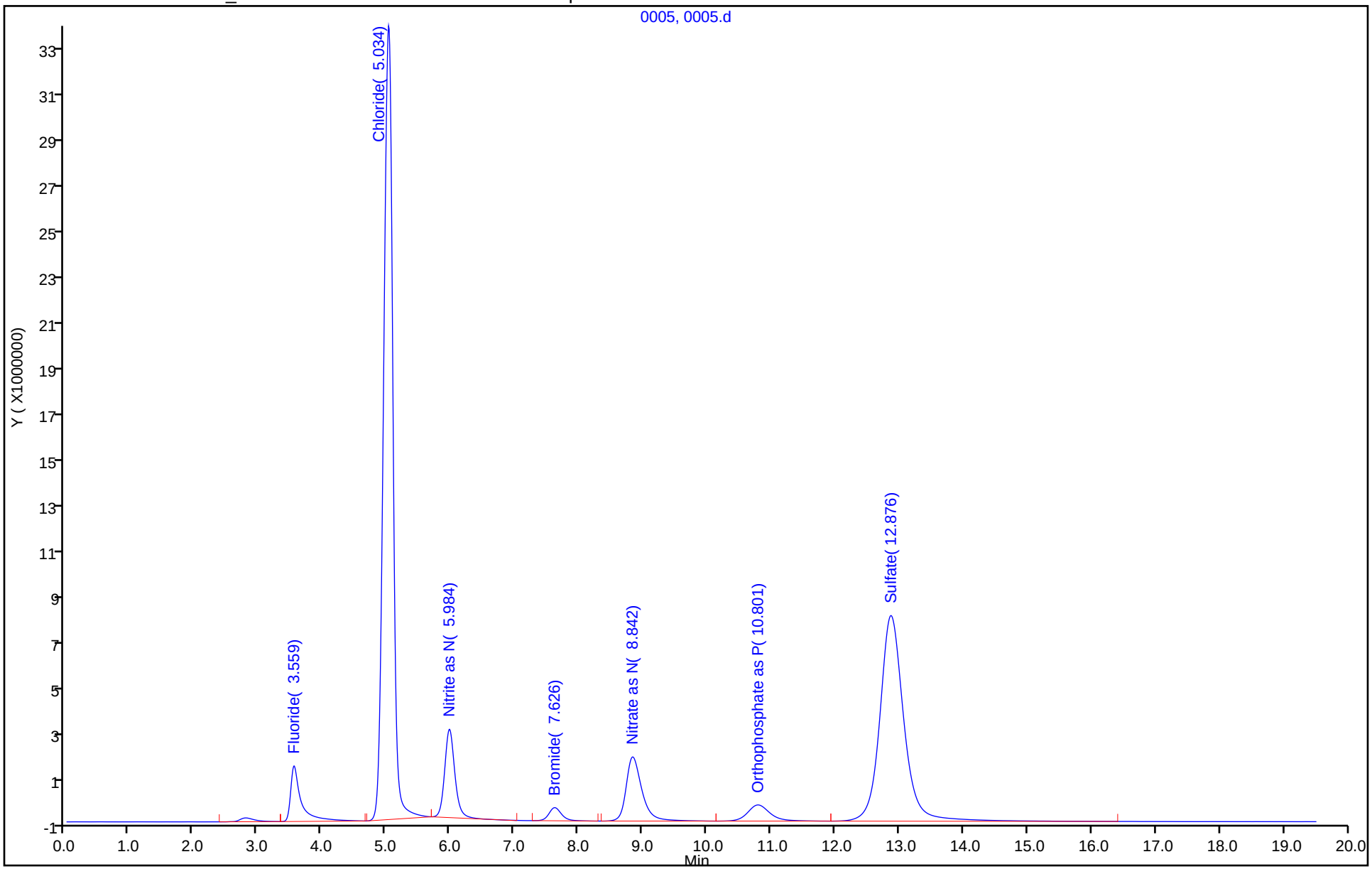
IC CAL cl/so4_00207 Amount Added: 1.20 Units: mL
IC Cal low_00383 Amount Added: 0.40 Units: mL

Report Date: 11-Jul-2018 14:06:32 Chrom Revision: 2.2 07-Jun-2018 07:41:54

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180711-71878.b\0005.d

Injection Date:	11-Jul-2018 12:52:00	Instrument ID:	WC_IonChrom11	Operator ID:	
Lims ID:	std L4			Worklist Smp#:	5
Client ID:					
Injection Vol:	10.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC11	Limit Group:	Wet - Anions		



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180711-71878.b\0006.d
Lims ID: std L5
Client ID:
Sample Type: IC Calib Level: 5
Inject. Date: 11-Jul-2018 13:14:00 ALS Bottle#: 0 Worklist Smp#: 6
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Sample Info: 280-0071878-006
Operator ID: Instrument ID: WC_IonChrom11
Sublist: chrom-Anions_IC11*sub1

Method: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180711-71878.b\Anions_IC11.m
Limit Group: Wet - Anions
Last Update: 11-Jul-2018 14:06:33 Calib Date: 11-Jul-2018 13:37:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180711-71878.b\0007.d

Column 1 : Det: 0005
Process Host: CTX0301

First Level Reviewer: jewellc Date: 11-Jul-2018 14:03:25

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride	3.559	3.559	0.000	55655671	8.00	8.00	
2 Chloride	5.050	5.034	0.016	732797219	120.0	117.9	
3 Nitrite as N	5.992	5.984	0.008	86014743	8.00	8.03	
4 Bromide	7.617	7.626	-0.009	15383510	8.00	8.01	
5 Nitrate as N	8.800	8.842	-0.042	96061391	8.00	8.00	
7 Orthophosphate as P	10.792	10.801	-0.009	33439863	8.00	8.01	
6 Sulfate	12.842	12.876	-0.034	477905646	120.0	116.5	

Reagents:

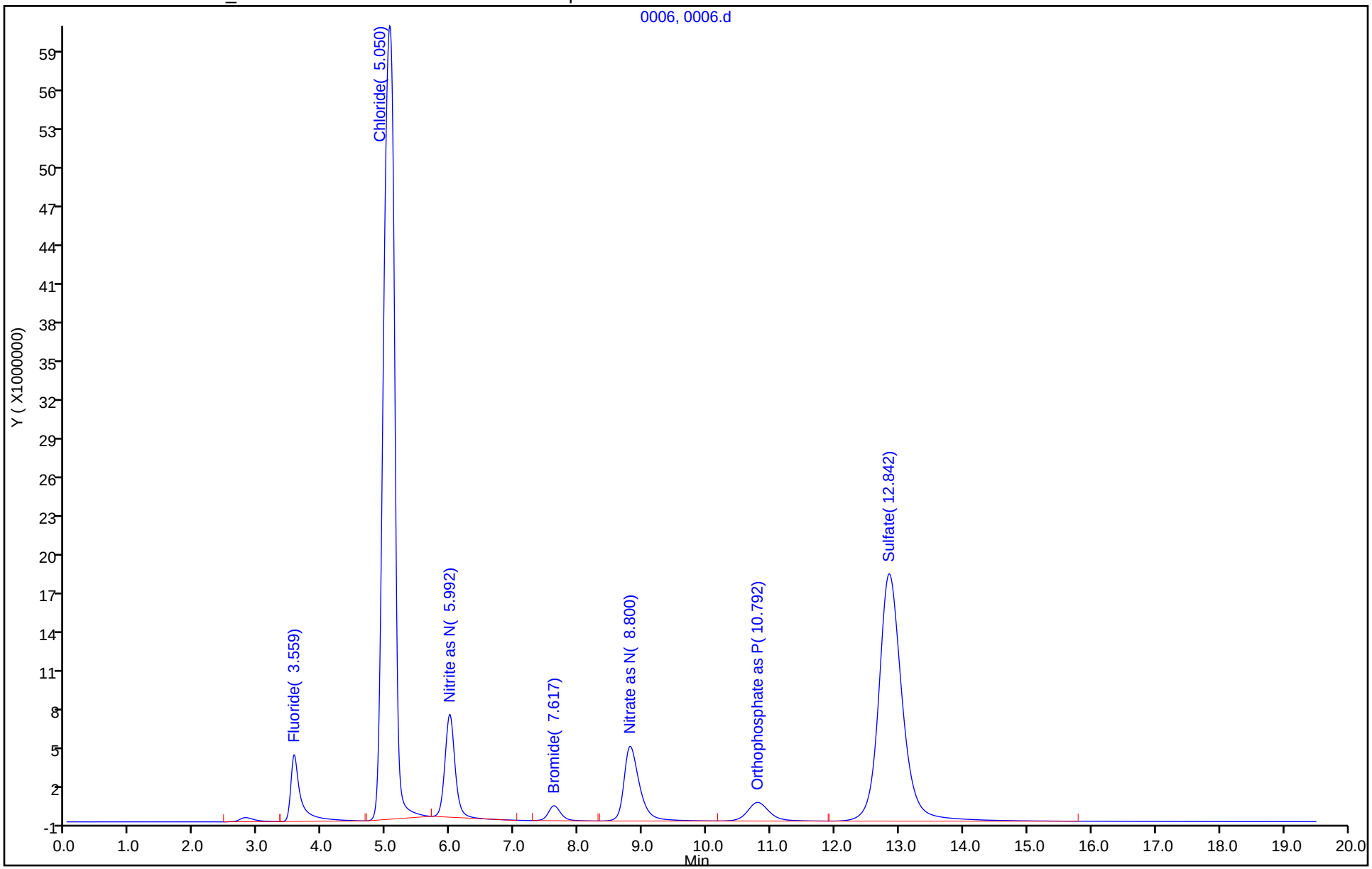
IC CAL cl/so4_00207 Amount Added: 2.40 Units: mL
IC Cal low_00383 Amount Added: 0.80 Units: mL

Report Date: 11-Jul-2018 14:06:33 Chrom Revision: 2.2 07-Jun-2018 07:41:54

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180711-71878.b\0006.d

Injection Date:	11-Jul-2018 13:14:00	Instrument ID:	WC_IonChrom11	Operator ID:	
Lims ID:	std L5			Worklist Smp#:	6
Client ID:					
Injection Vol:	10.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC11	Limit Group:	Wet - Anions		



TestAmerica Denver

New cal.

TestAmerica

421805|06

IC Instrument Information

WL: 71878 **Inst ID:** 11 **Analysis Date:** 07/11/18 **Analyst:** TP

	Rush	Job No.	Samples	Anions	QC Req	HT Exp
Disolved →		111804	1	F Cl NO2 Br NO3 (PO4) SO4	MS/D	
Total →		111804	2	F Cl NO2 Br NO3 PO4 (SO4)	MS/D	
	☐	111806	4	F (Cl) NO2 Br (NO3) PO4 (SO4)	(MS/D) 1	
	☐	111205	13	F (Cl) NO2 Br NO3 PO4 (SO4)	(MS/D) 3 & 8	8 client
	☐			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	
	☐			F Cl NO2 Br NO3 PO4 SO4	MS/D	

Dilutions

Job No.	Samples	Anions	Dilution	Reason
✓ 111804	1,2	F Cl NO2 Br NO3 (PO4) (SO4)	20x	dark brown color
✓ 111806	1	F (Cl) NO2 Br (NO3) PO4 (SO4)	1x	rerun
		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		

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Panida R.
7/13/18

New cal.

TestAmerica Denver

TestAmerica

421805/06

IC Instrument Information

WL: 71878 **Inst ID:** 11 **Analysis Date:** 07/11/18 **Analyst:** TP

Rush	Job No.	Samples	Anions	QC Req	HT Exp
Disolved →	111804	1	F Cl NO2 Br NO3 (PO4) SO4	MS/D	
Total →	111804	2	F Cl NO2 Br NO3 PO4 (SO4)	MS/D	
☐	111806	4	F (Cl) NO2 Br (NO3) PO4 (SO4)	(MS/D) 1	
☐	111205	13	F (Cl) NO2 Br NO3 PO4 (SO4)	(MS/D) 3 & 8	client
☐			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	
☐			F Cl NO2 Br NO3 PO4 SO4	MS/D	

Dilutions

Job No.	Samples	Anions	Dilution	Reason
✓ 111804	1,2	F Cl NO2 Br NO3 (PO4) (SO4)	20x	dark brown color
✓ 111806	1	F (Cl) NO2 Br (NO3) PO4 (SO4)	1x	rerun
		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		

TestAmerica Laboratories
Initial Calibration Summary Report

Method: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180711-71878.b\Anions_IC11.m

Instrument:	WC_IonChrom11	Lims Location:	280
Lock State:	Initial Calib Locked	Cpnd Order:	Retention Time
Integrator:	Falcon	Last Modified:	12-Jul-2018 14:49:46

No.Compounds:7

Initial Calibration Batches

Ical Batch: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180711-71878.b
Inj Date : 11-Jul-2018 11:45:00, Sublist: chrom-Anions_IC11*sub1

Detector 1: 0005

	Wet - Anions				Wet - Anions 28D			
Compound	b	M1	M2	Err	b	M1	M2	Err
1 Fluoride	-254975	6986032		1.000	-254975	6986032		1.000
2 Chloride	-362699	6244538		0.997	-362699	6244538		0.997
3 Nitrite as N	-201399	107329C		0.999	-201399	107329C		0.999
4 Bromide	49251	1914544		1.000	49251	1914544		1.000
5 Nitrate as N	-224529	1203106		1.000	-224529	1203106		1.000
7 Orthophosphate as P	323014	4134783		1.000	323014	4134783		1.000
6 Sulfate	-174710	411867C		0.997	-174710	411867C		0.997

Panicha R.
7/13/18

TestAmerica Laboratories
Initial Calibration Summary Report

Method: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180711-71878.b\Anions_IC11.m

Instrument:	WC_IonChrom11	Lims Location:	280
Lock State:	Initial Calib Locked	Cpnd Order:	Retention Time
Integrator:	Falcon	Last Modified:	12-Jul-2018 14:49:46

No.Compounds:7

Initial Calibration Batches

Ical Batch: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180711-71878.b
Inj Date : 11-Jul-2018 11:45:00, Sublist: chrom-Anions_IC11*sub1

Detector 1: 0005

	Wet - Anions				Wet - Anions 28D			
Compound	b	M1	M2	Err	b	M1	M2	Err
1 Fluoride	-254975	6986032		1.000	-254975	6986032		1.000
2 Chloride	-362699	6244538		0.997	-362699	6244538		0.997
3 Nitrite as N	-201399	107329(		0.999	-201399	107329(		0.999
4 Bromide	49251	1914544		1.000	49251	1914544		1.000
5 Nitrate as N	-224529	120310(		1.000	-224529	120310(		1.000
7 Orthophosphate as P	323014	4134783		1.000	323014	4134783		1.000
6 Sulfate	-174710	411867(		0.997	-174710	411867(		0.997

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180711-71878.b\0008.d
Lims ID: ICV
Client ID:
Sample Type: ICV
Inject. Date: 11-Jul-2018 13:59:00 ALS Bottle#: 0 Worklist Smp#: 8
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Sample Info: 280-0071878-008
Operator ID: Instrument ID: WC_IonChrom11
Sublist:

Method: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180711-71878.b\Anions_IC11.m
Limit Group: Wet - Anions
Last Update: 12-Jul-2018 14:49:18 Calib Date: 11-Jul-2018 13:37:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180711-71878.b\0007.d

Column 1 : Det: 0005
Process Host: CTX0301

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride	3.559	3.559	0.000	27960937	4.00	4.04	
2 Chloride	5.051	5.051	0.000	490855209	80.0	79.2	
3 Nitrite as N	5.984	5.984	0.000	40185972	4.00	3.76	
4 Bromide	7.626	7.626	0.000	7914052	4.00	4.11	
5 Nitrate as N	8.842	8.842	0.000	46919614	4.00	3.92	
7 Orthophosphate as P	10.792	10.792	0.000	17486446	4.00	4.15	
6 Sulfate	12.859	12.859	0.000	323774758	80.0	79.0	

Reagents:

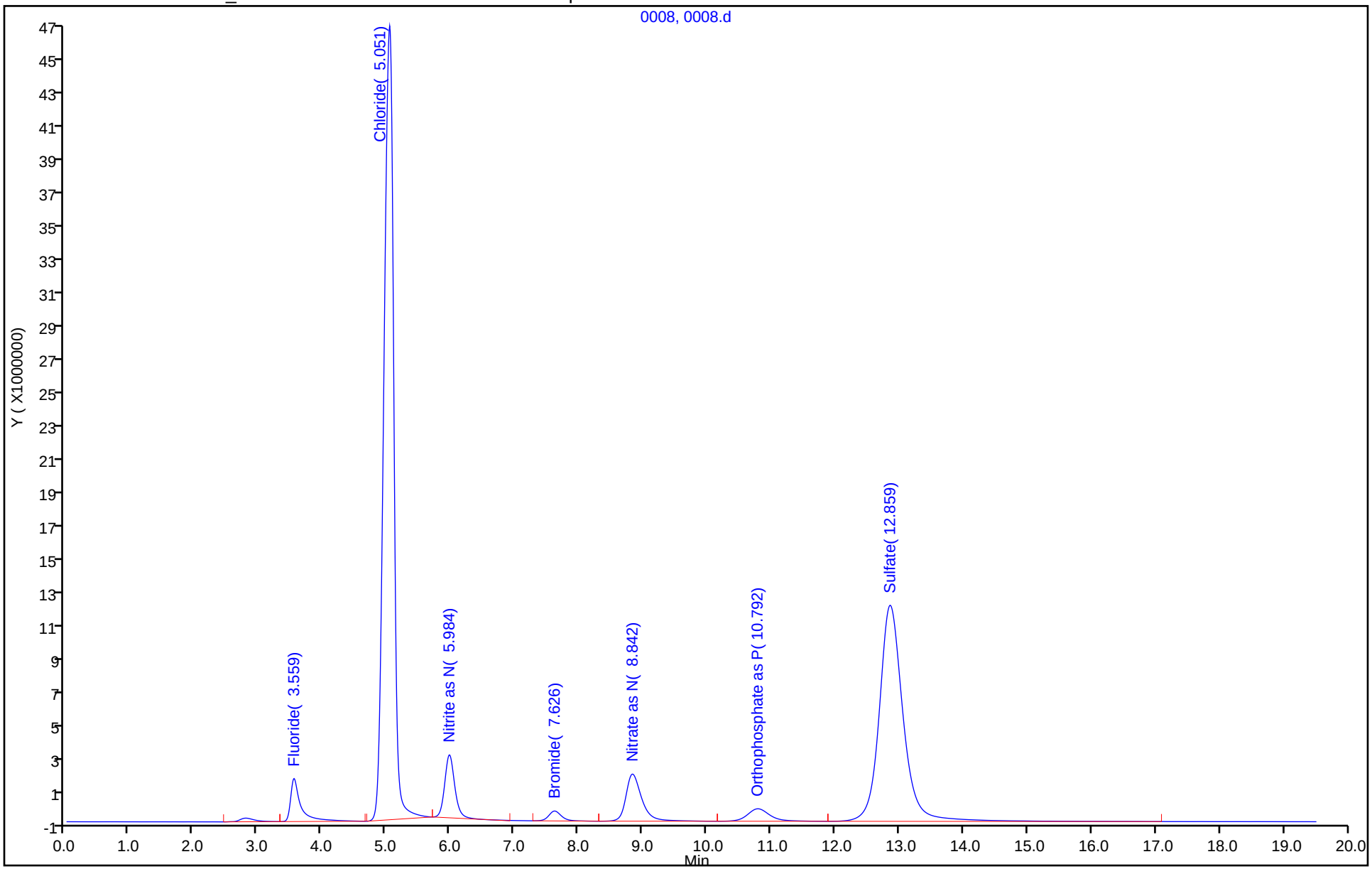
IC CL ICV_00014	Amount Added:	0.40	Units: mL
IC SO4 ICV_00017	Amount Added:	0.40	Units: mL
IC ICV 5_00204	Amount Added:	0.40	Units: mL

Report Date: 12-Jul-2018 14:49:18 Chrom Revision: 2.2 07-Jun-2018 07:41:54

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180711-71878.b\0008.d

Injection Date:	11-Jul-2018 13:59:00	Instrument ID:	WC_IonChrom11	Operator ID:	
Lims ID:	ICV			Worklist Smp#:	8
Client ID:					
Injection Vol:	10.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC11	Limit Group:	Wet - Anions		



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180711-71878.b\0009.d
Lims ID: ICB
Client ID:
Sample Type: ICB
Inject. Date: 11-Jul-2018 14:22:00 ALS Bottle#: 0 Worklist Smp#: 9
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Sample Info: 280-0071878-009
Operator ID: Instrument ID: WC_IonChrom11

Method: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180711-71878.b\Anions_IC11.m
Limit Group: Wet - Anions
Last Update: 12-Jul-2018 14:49:18 Calib Date: 11-Jul-2018 13:37:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180711-71878.b\0007.d

Column 1 : Det: 0005
Process Host: CTX0301

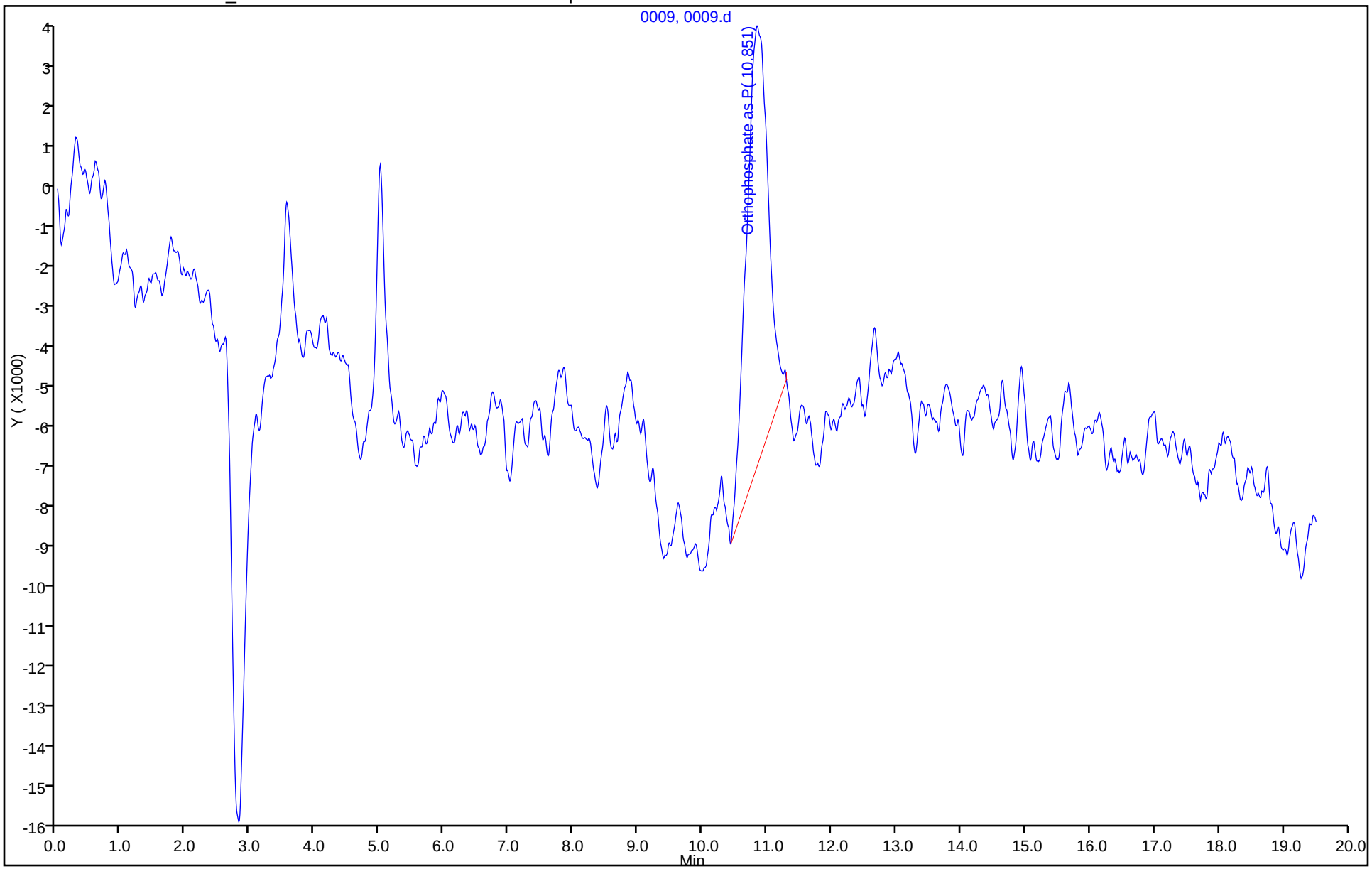
Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride		3.559				ND	
2 Chloride		5.051				ND	
3 Nitrite as N		5.984				ND	
4 Bromide		7.626				ND	
5 Nitrate as N		8.842				ND	
7 Orthophosphate as P	10.851	10.792	0.059	256209		-0.0162	
6 Sulfate		12.859				ND	

Report Date: 12-Jul-2018 14:49:19 Chrom Revision: 2.2 07-Jun-2018 07:41:54

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180711-71878.b\0009.d

Injection Date:	11-Jul-2018 14:22:00	Instrument ID:	WC_IonChrom11	Operator ID:	
Lims ID:	ICB			Worklist Smp#:	9
Client ID:					
Injection Vol:	10.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC11	Limit Group:	Wet - Anions		



TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

IC Instrument Information

422335/422336.

WL: 72004 **Inst ID:** 11 **Analysis Date:** 07/16/18 **Analyst:** TP

Rush	Job No.	Samples	Anions	QC Req	HT Exp
☐	1112017	2	F Cl NO2 Br NO3 PO4 SO4	MS/D 1	
☐	111435	6	F Cl NO2 Br NO3 PO4 SO4	MS/D 7	
☐	111385	3	F Cl NO2 Br NO3 PO4 SO4	MS/D	
☐	111403	2	F Cl NO2 Br NO3 PO4 SO4	MS/D	
☐	111421	2	F Cl NO2 Br NO3 PO4 SO4	MS/D	
☐	111480	3	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
		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		
		F Cl NO2 Br NO3 PO4 SO4		
		F Cl NO2 Br NO3 PO4 SO4		

21

Panida R.
7/18/18

IC Instrument Information

WL: 72004 **Inst ID:** 11 **Analysis Date:** 07/16/18 **Analyst:** TP

Rush	Job No.	Samples	Anions	QC Req	HT Exp
☐	1112017	2	F (Cl) (NO2) Br (NO3) PO4 (SO4)	(MS/D) 1	
☐	111435	6	F (Cl) NO2 Br NO3 PO4 (SO4)	(MS/D) 7	
☐	111385	3	(F) (Cl) NO2 (Br) NO3 PO4 (SO4)	MS/D	
☐	111403	2	F (Cl) NO2 Br NO3 PO4 (SO4)	MS/D	
☐	111421	2	F (Cl) NO2 Br NO3 PO4 (SO4)	MS/D	
☐	111480	3	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
		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		
		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_IonChrom11\20180713-71952.b\Anions_IC11.m
Instrument: WC_IonChrom11
Lock State: Initial Calib Locked
Integrator: Falcon
No.Compounds:7
Lims Location: 280
Cpnd Order: Retention Time
Last Modified: 16-Jul-2018 23:06:22

Initial Calibration Batches

Ical Batch: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180711-71878.b
Inj Date : 11-Jul-2018 11:45:00, Sublist: chrom-Anions_IC11*sub1

Detector 1: 0005

	Wet - Anions				Wet - Anions 28D			
Compound	b	M1	M2	Err	b	M1	M2	Err
1 Fluoride	-254975	6986032		1.000	-254975	6986032		1.000
2 Chloride	-362699	6244538		0.997	-362699	6244538		0.997
3 Nitrite as N	-201399	1073290		0.999	-201399	1073290		0.999
4 Bromide	49251	1914544		1.000	49251	1914544		1.000
5 Nitrate as N	-224529	1203106		1.000	-224529	1203106		1.000
7 Orthophosphate as P	323014	4134783		1.000	323014	4134783		1.000
6 Sulfate	-174710	4118670		0.997	-174710	4118670		0.997

Panida R
7/18/18

TestAmerica Laboratories
Initial Calibration Summary Report

Method: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180713-71952.b\Anions_IC11.m
Instrument: WC_IonChrom11 Lims Location: 280
Lock State: Initial Calib Locked Cpnd Order: Retention Time
Integrator: Falcon Last Modified: 16-Jul-2018 23:06:22
No.Compounds:7

Initial Calibration Batches

Ical Batch: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180711-71878.b
Inj Date : 11-Jul-2018 11:45:00, Sublist: chrom-Anions_IC11*sub1

Detector 1: 0005

	Wet - Anions				Wet - Anions 28D			
Compound	b	M1	M2	Err	b	M1	M2	Err
1 Fluoride	-254975	6986032		1.000	-254975	6986032		1.000
2 Chloride	-362699	6244538		0.997	-362699	6244538		0.997
3 Nitrite as N	-201399	107329(		0.999	-201399	107329(		0.999
4 Bromide	49251	1914544		1.000	49251	1914544		1.000
5 Nitrate as N	-224529	120310(		1.000	-224529	120310(		1.000
7 Orthophosphate as P	323014	4134783		1.000	323014	4134783		1.000
6 Sulfate	-174710	411867(		0.997	-174710	411867(		0.997

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180716-72004.b\0001.d
Lims ID: CCV
Client ID:
Sample Type: CCV
Inject. Date: 16-Jul-2018 12:37:00 ALS Bottle#: 0 Worklist Smp#: 1
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Sample Info: 280-0072004-001
Operator ID: Instrument ID: WC_IonChrom11
Sublist: chrom-Anions_IC11*sub1

Method: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180716-72004.b\Anions_IC11.m
Limit Group: Wet - Anions
Last Update: 17-Jul-2018 07:07:12 Calib Date: 11-Jul-2018 13:37:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180711-71878.b\0007.d

Column 1 : Det: 0005
Process Host: CTX0302

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride	3.559	3.559	0.000	33272676	5.00	4.80	
2 Chloride	5.051	5.051	0.000	594383545	100.0	95.8	
3 Nitrite as N	5.984	5.984	0.000	52388058	5.00	4.90	
4 Bromide	7.634	7.626	0.008	9535055	5.00	4.95	
5 Nitrate as N	8.842	8.842	0.000	58540386	5.00	4.88	
7 Orthophosphate as P	10.684	10.792	-0.108	20926951	5.00	4.98	
6 Sulfate	12.717	12.859	-0.142	381655310	100.0	93.1	

Reagents:

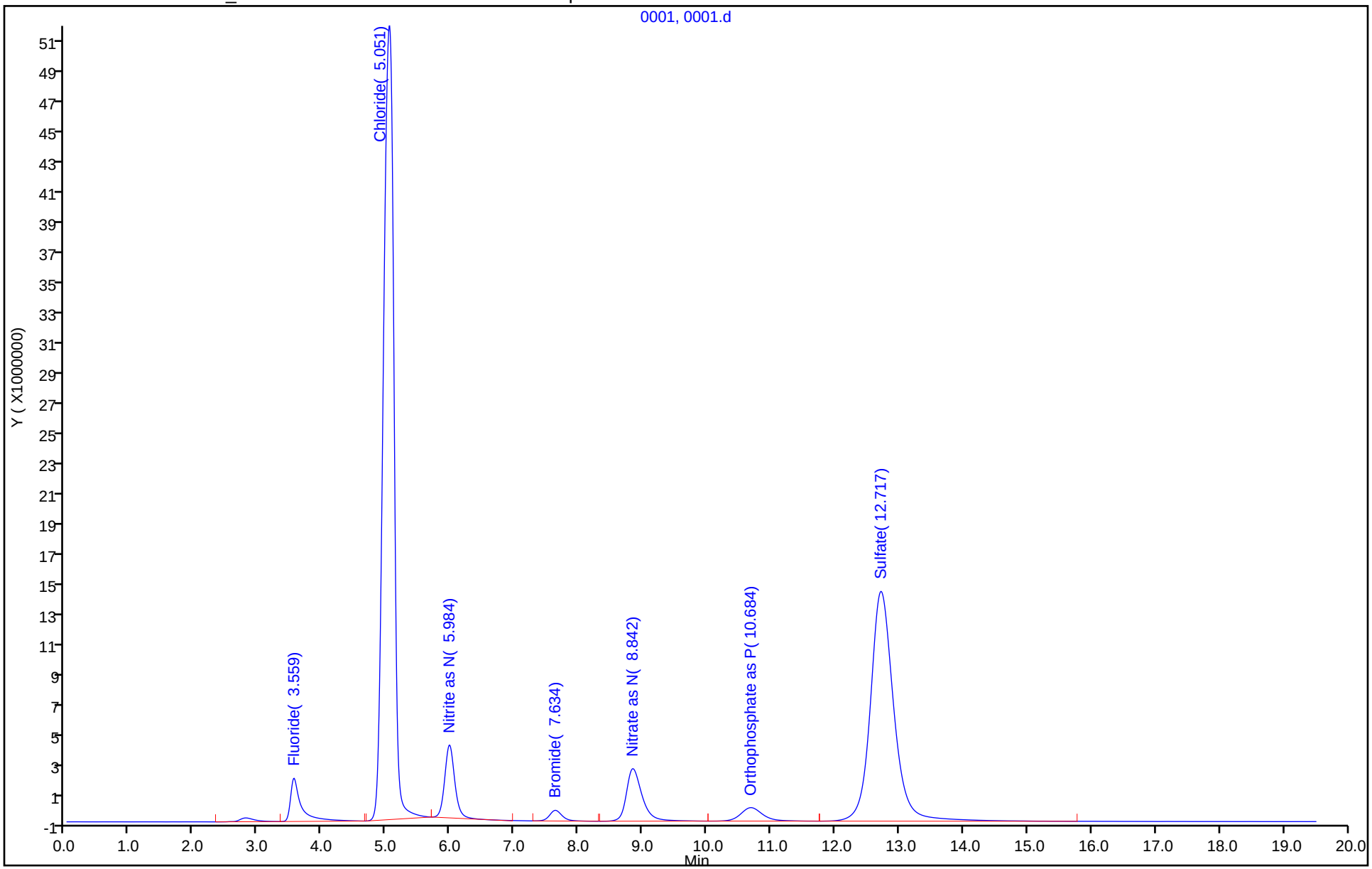
IC LCS_01284 Amount Added: 5.00 Units: mL

Report Date: 17-Jul-2018 07:07:13 Chrom Revision: 2.2 07-Jun-2018 07:41:54

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180716-72004.b\0001.d

Injection Date:	16-Jul-2018 12:37:00	Instrument ID:	WC_IonChrom11	Operator ID:	
Lims ID:	CCV			Worklist Smp#:	1
Client ID:					
Injection Vol:	10.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC11	Limit Group:	Wet - Anions		



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180716-72004.b\0002.d
Lims ID: CCB
Client ID:
Sample Type: CCB
Inject. Date: 16-Jul-2018 12:59:00 ALS Bottle#: 0 Worklist Smp#: 2
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Sample Info: 280-0072004-002
Operator ID: Instrument ID: WC_IonChrom11

Method: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180716-72004.b\Anions_IC11.m
Limit Group: Wet - Anions
Last Update: 17-Jul-2018 07:07:12 Calib Date: 11-Jul-2018 13:37:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180711-71878.b\0007.d

Column 1 : Det: 0005
Process Host: CTX0302

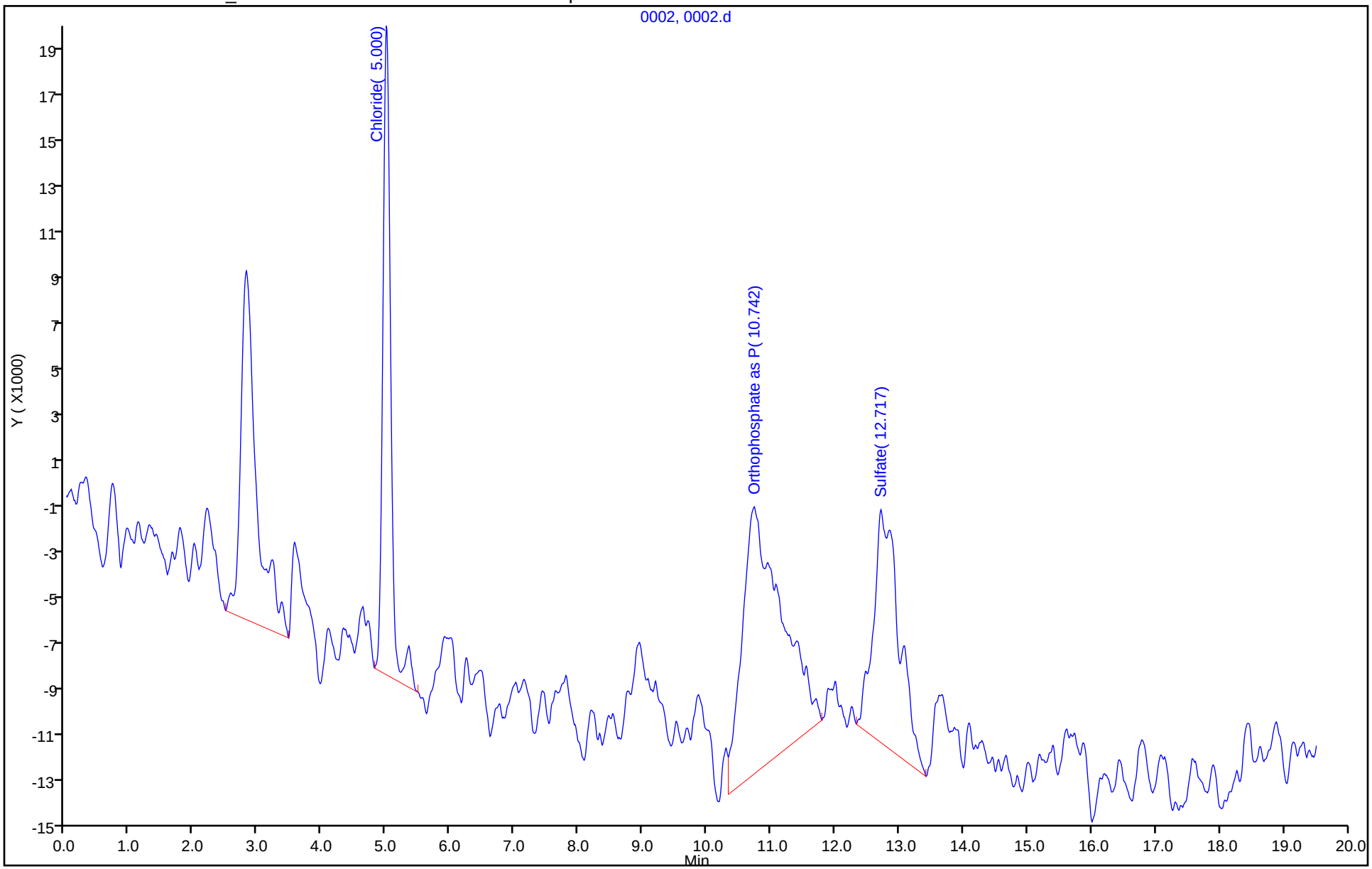
Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride		3.559				ND	
2 Chloride	5.000	5.051	-0.051	238153		0.6190	
3 Nitrite as N		5.984				ND	
4 Bromide		7.626				ND	
5 Nitrate as N		8.842				ND	
7 Orthophosphate as P	10.742	10.792	-0.050	481147		0.0382	
6 Sulfate	12.717	12.859	-0.142	281750		0.4926	

Report Date: 17-Jul-2018 07:07:13 Chrom Revision: 2.2 07-Jun-2018 07:41:54

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180716-72004.b\0002.d

Injection Date:	16-Jul-2018 12:59:00	Instrument ID:	WC_IonChrom11	Operator ID:	
Lims ID:	CCB			Worklist Smp#:	2
Client ID:					
Injection Vol:	10.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC11	Limit Group:	Wet - Anions		



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180716-72004.b\0003.d
Lims ID: MRL
Client ID:
Sample Type: MRL
Inject. Date: 16-Jul-2018 13:21:00 ALS Bottle#: 0 Worklist Smp#: 3
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Sample Info: 280-0072004-003
Operator ID: Instrument ID: WC_IonChrom11

Method: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180716-72004.b\Anions_IC11.m
Limit Group: Wet - Anions
Last Update: 17-Jul-2018 07:07:12 Calib Date: 11-Jul-2018 13:37:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180711-71878.b\0007.d

Column 1 : Det: 0005
Process Host: CTX0302

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride	3.559	3.559	0.000	1292461	0.2000	0.2215	
2 Chloride	5.000	5.051	-0.051	11095352	2.50	2.36	
3 Nitrite as N	5.975	5.984	-0.009	2039289	0.2000	0.2088	
4 Bromide	7.650	7.626	0.024	423563	0.2000	0.1955	
5 Nitrate as N	8.925	8.842	0.083	2343745	0.2000	0.2135	
7 Orthophosphate as P	10.717	10.792	-0.075	1137781	0.2000	0.1971	
6 Sulfate	12.767	12.859	-0.092	8362566	2.50	2.45	

Reagents:

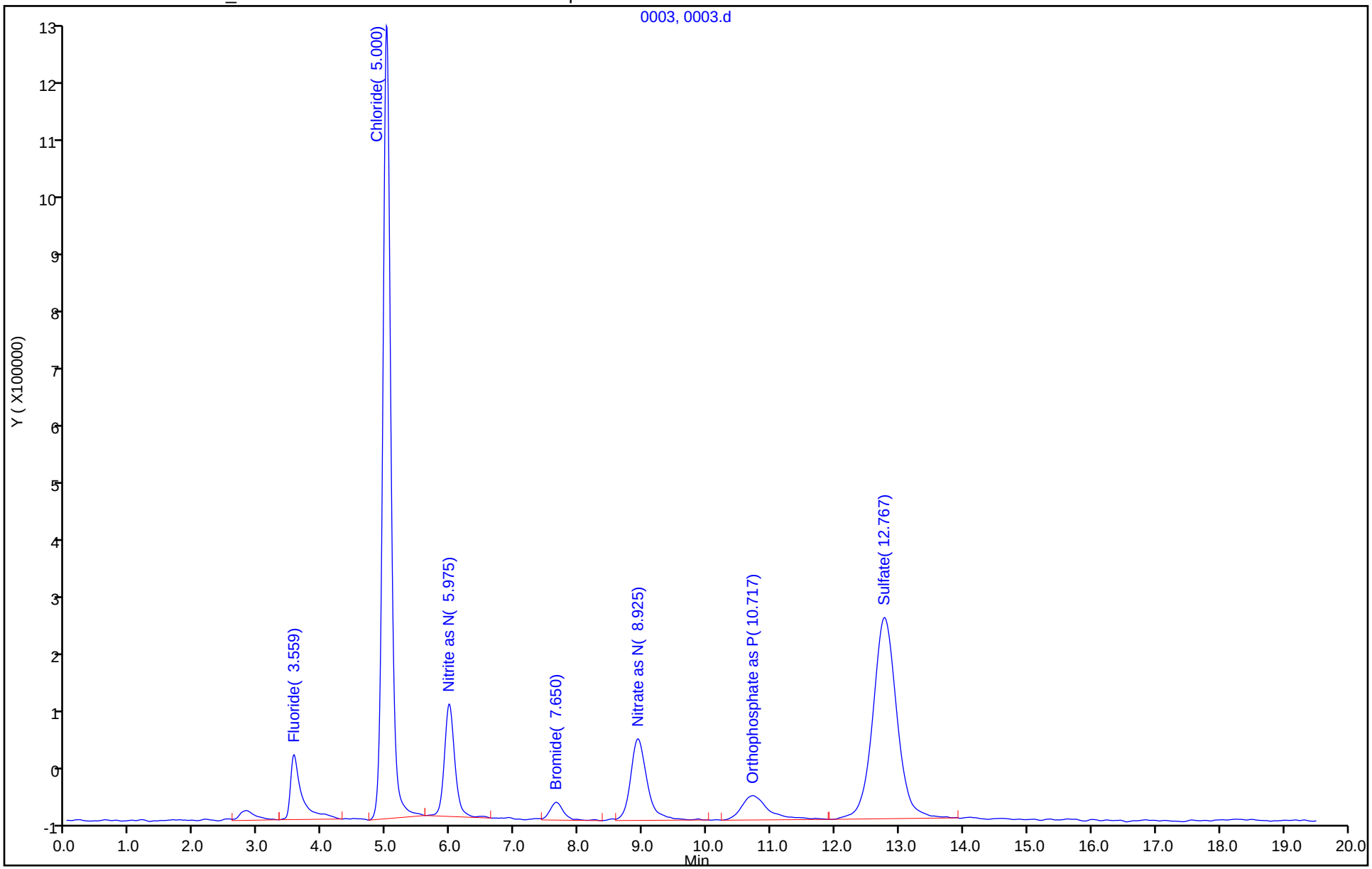
IC CAL cl/so4_00208 Amount Added: 0.05 Units: mL
IC Cal low_00384 Amount Added: 0.02 Units: mL

Report Date: 17-Jul-2018 07:07:14 Chrom Revision: 2.2 07-Jun-2018 07:41:54

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180716-72004.b\0003.d

Injection Date:	16-Jul-2018 13:21:00	Instrument ID:	WC_IonChrom11	Operator ID:	
Lims ID:	MRL			Worklist Smp#:	3
Client ID:					
Injection Vol:	10.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC11	Limit Group:	Wet - Anions		



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180716-72004.b\0004.d
Lims ID: LCS
Client ID:
Sample Type: LCS
Inject. Date: 16-Jul-2018 13:43:00 ALS Bottle#: 0 Worklist Smp#: 4
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Sample Info: 280-0072004-004
Misc. Info.: 4 F
Operator ID: Instrument ID: WC_IonChrom11

Method: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180716-72004.b\Anions_IC11.m
Limit Group: Wet - Anions
Last Update: 17-Jul-2018 07:07:12 Calib Date: 11-Jul-2018 13:37:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180711-71878.b\0007.d

Column 1 : Det: 0005
Process Host: CTX0302

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride	3.559	3.559	0.000	33505209	5.00	4.83	
2 Chloride	5.042	5.051	-0.009	593391290	100.0	95.6	
3 Nitrite as N	5.975	5.984	-0.009	52435771	5.00	4.90	
4 Bromide	7.617	7.626	-0.009	9466635	5.00	4.92	
5 Nitrate as N	8.817	8.842	-0.025	58449470	5.00	4.88	
7 Orthophosphate as P	10.700	10.792	-0.092	21037462	5.00	5.01	
6 Sulfate	12.734	12.859	-0.125	380261084	100.0	92.8	

Reagents:

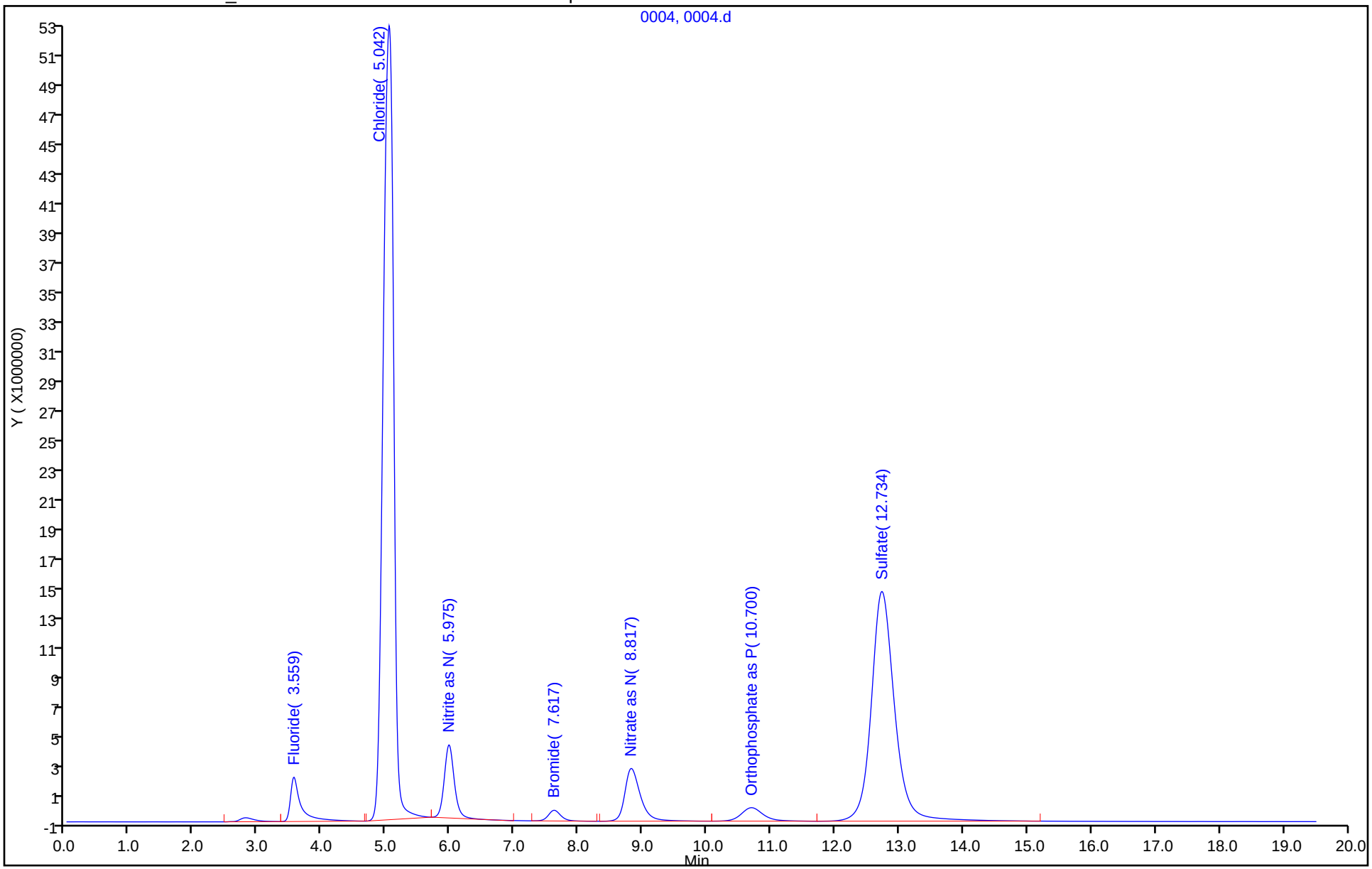
IC LCS_01284 Amount Added: 5.00 Units: mL

Report Date: 17-Jul-2018 07:07:14 Chrom Revision: 2.2 07-Jun-2018 07:41:54

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180716-72004.b\0004.d

Injection Date:	16-Jul-2018 13:43:00	Instrument ID:	WC_IonChrom11	Operator ID:	
Lims ID:	LCS			Worklist Smp#:	4
Client ID:					
Injection Vol:	10.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC11	Limit Group:	Wet - Anions		



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180716-72004.b\0005.d
Lims ID: LCSD
Client ID:
Sample Type: LCSD
Inject. Date: 16-Jul-2018 14:06:00 ALS Bottle#: 0 Worklist Smp#: 5
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Sample Info: 280-0072004-005
Misc. Info.: 5 F
Operator ID: Instrument ID: WC_IonChrom11

Method: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180716-72004.b\Anions_IC11.m
Limit Group: Wet - Anions
Last Update: 17-Jul-2018 07:07:12 Calib Date: 11-Jul-2018 13:37:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180711-71878.b\0007.d

Column 1 : Det: 0005
Process Host: CTX0302

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride	3.559	3.559	0.000	33523133	5.00	4.84	
2 Chloride	5.042	5.051	-0.009	593596150	100.0	95.6	
3 Nitrite as N	5.975	5.984	-0.009	52462429	5.00	4.91	
4 Bromide	7.609	7.626	-0.017	9524555	5.00	4.95	
5 Nitrate as N	8.809	8.842	-0.033	58637876	5.00	4.89	
7 Orthophosphate as P	10.692	10.792	-0.100	21181836	5.00	5.04	
6 Sulfate	12.734	12.859	-0.125	380769712	100.0	92.9	

Reagents:

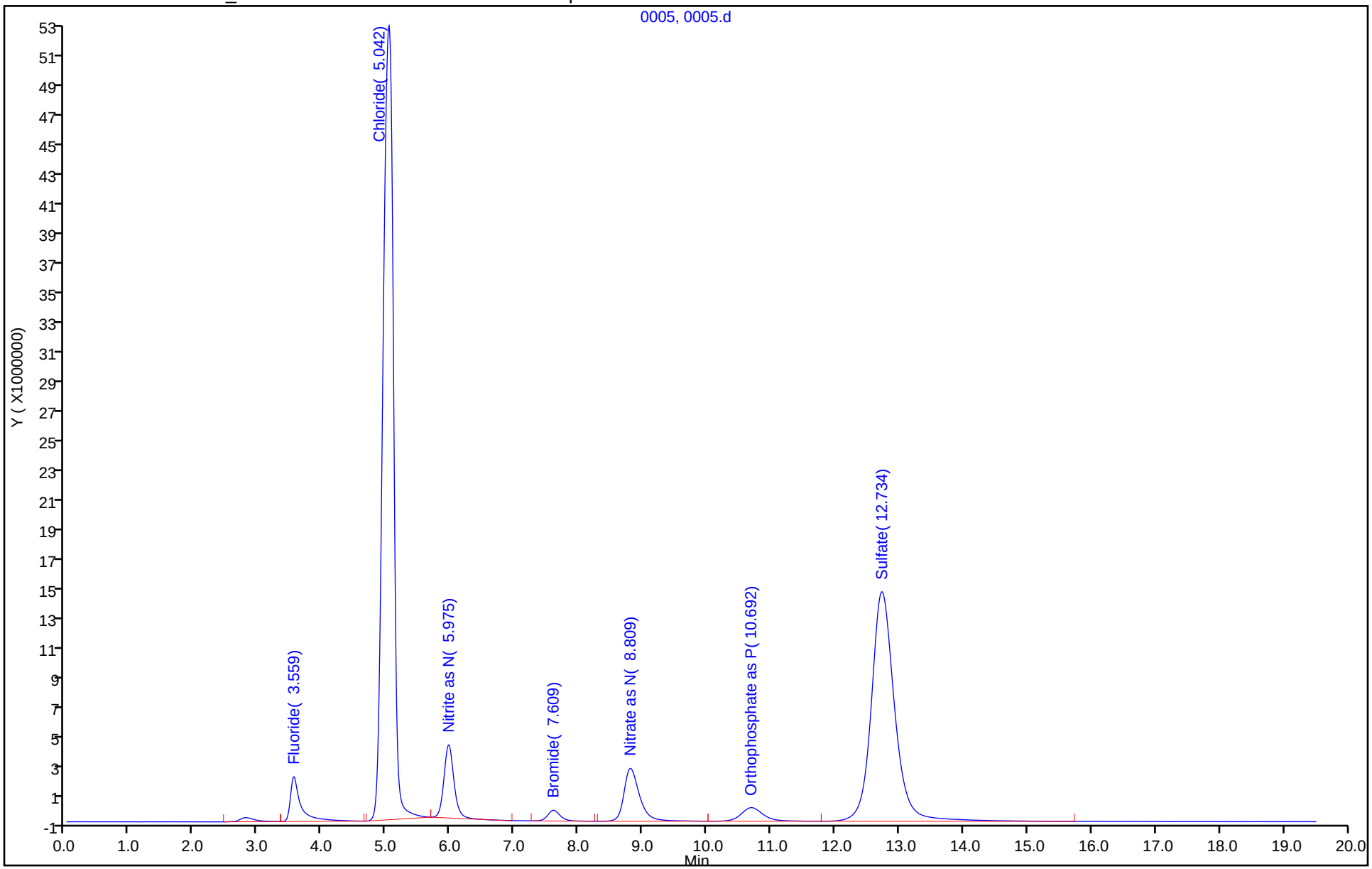
IC LCS_01284 Amount Added: 5.00 Units: mL

Report Date: 17-Jul-2018 07:07:15 Chrom Revision: 2.2 07-Jun-2018 07:41:54

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180716-72004.b\0005.d

Injection Date:	16-Jul-2018 14:06:00	Instrument ID:	WC_IonChrom11	Operator ID:	
Lims ID:	LCSD			Worklist Smp#:	5
Client ID:					
Injection Vol:	10.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC11	Limit Group:	Wet - Anions		



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180716-72004.b\0006.d
Lims ID: MB
Client ID:
Sample Type: MB
Inject. Date: 16-Jul-2018 14:28:00 ALS Bottle#: 0 Worklist Smp#: 6
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Sample Info: 280-0072004-006
Misc. Info.: 6 F
Operator ID: Instrument ID: WC_IonChrom11

Method: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180716-72004.b\Anions_IC11.m
Limit Group: Wet - Anions
Last Update: 17-Jul-2018 07:07:12 Calib Date: 11-Jul-2018 13:37:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180711-71878.b\0007.d

Column 1 : Det: 0005
Process Host: CTX0302

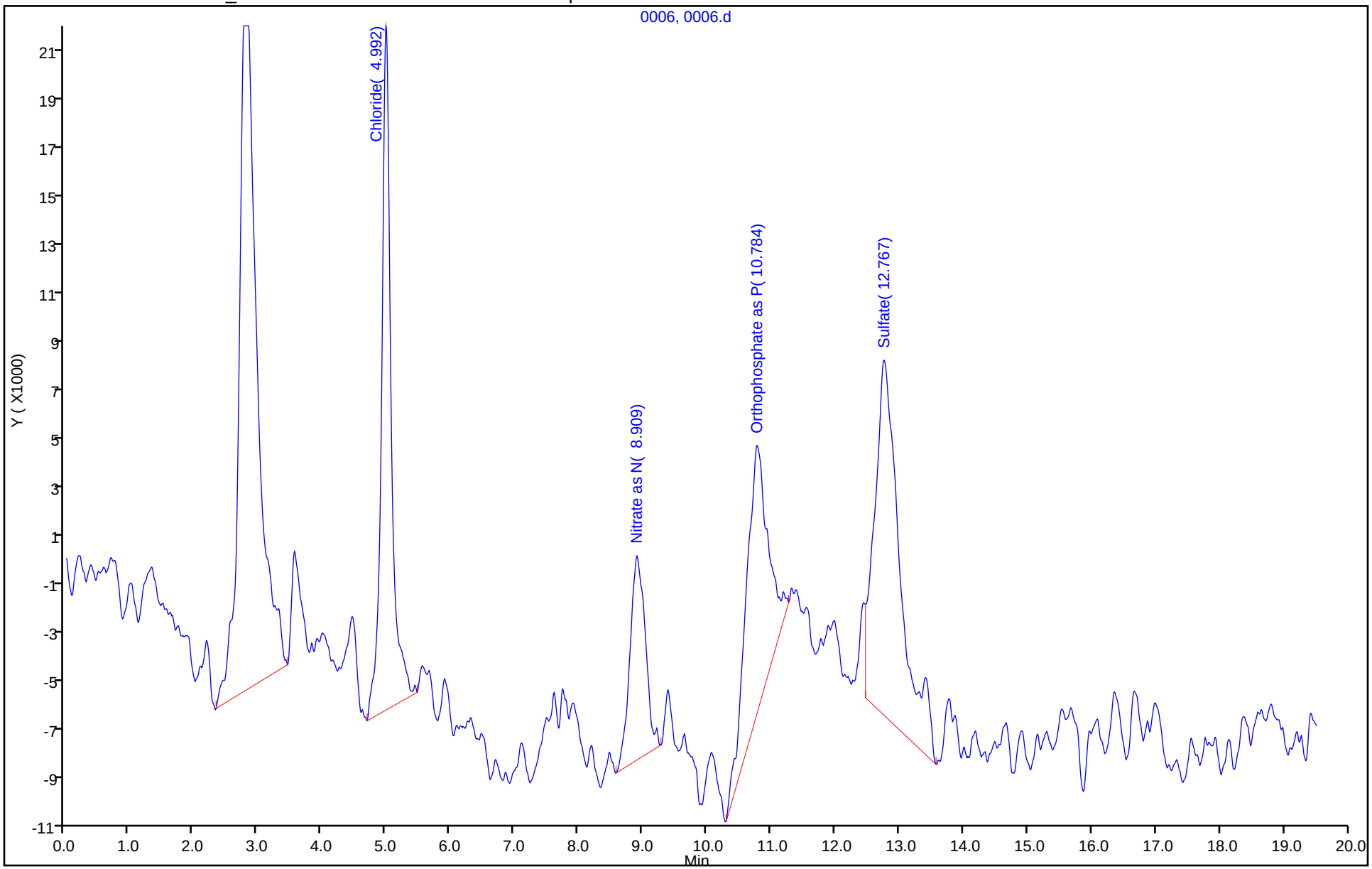
Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride		3.559				ND	
2 Chloride	4.992	5.051	-0.059	287257		0.6268	
3 Nitrite as N		5.984				ND	
4 Bromide		7.626				ND	
5 Nitrate as N	8.909	8.842	0.067	137074		0.0301	
7 Orthophosphate as P	10.784	10.792	-0.008	256425		-0.0161	
6 Sulfate	12.767	12.859	-0.092	395170		0.5201	

Report Date: 17-Jul-2018 07:07:15 Chrom Revision: 2.2 07-Jun-2018 07:41:54

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180716-72004.b\0006.d

Injection Date:	16-Jul-2018 14:28:00	Instrument ID:	WC_IonChrom11	Operator ID:	
Lims ID:	MB			Worklist Smp#:	6
Client ID:					
Injection Vol:	10.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC11	Limit Group:	Wet - Anions		



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180716-72004.b\0017.d
Lims ID: ccv
Client ID:
Sample Type: CCV
Inject. Date: 16-Jul-2018 22:54:00 ALS Bottle#: 0 Worklist Smp#: 17
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Sample Info: 280-0072004-017
Misc. Info.: 27817
Operator ID: Instrument ID: WC_IonChrom11
Sublist: chrom-Anions_IC11*sub1

Method: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180716-72004.b\Anions_IC11.m
Limit Group: Wet - Anions
Last Update: 17-Jul-2018 07:07:20 Calib Date: 11-Jul-2018 13:37:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180711-71878.b\0007.d

Column 1 : Det: 0005
Process Host: CTX0302

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride	3.551	3.559	-0.008	34692681	5.00	5.00	
2 Chloride	5.042	5.051	-0.009	597455390	100.0	96.3	
3 Nitrite as N	5.976	5.984	-0.008	52743891	5.00	4.93	
4 Bromide	7.617	7.626	-0.009	9507414	5.00	4.94	
5 Nitrate as N	8.826	8.842	-0.016	58428151	5.00	4.88	
7 Orthophosphate as P	10.676	10.792	-0.116	21663135	5.00	5.16	
6 Sulfate	12.709	12.859	-0.150	384046078	100.0	93.7	

Reagents:

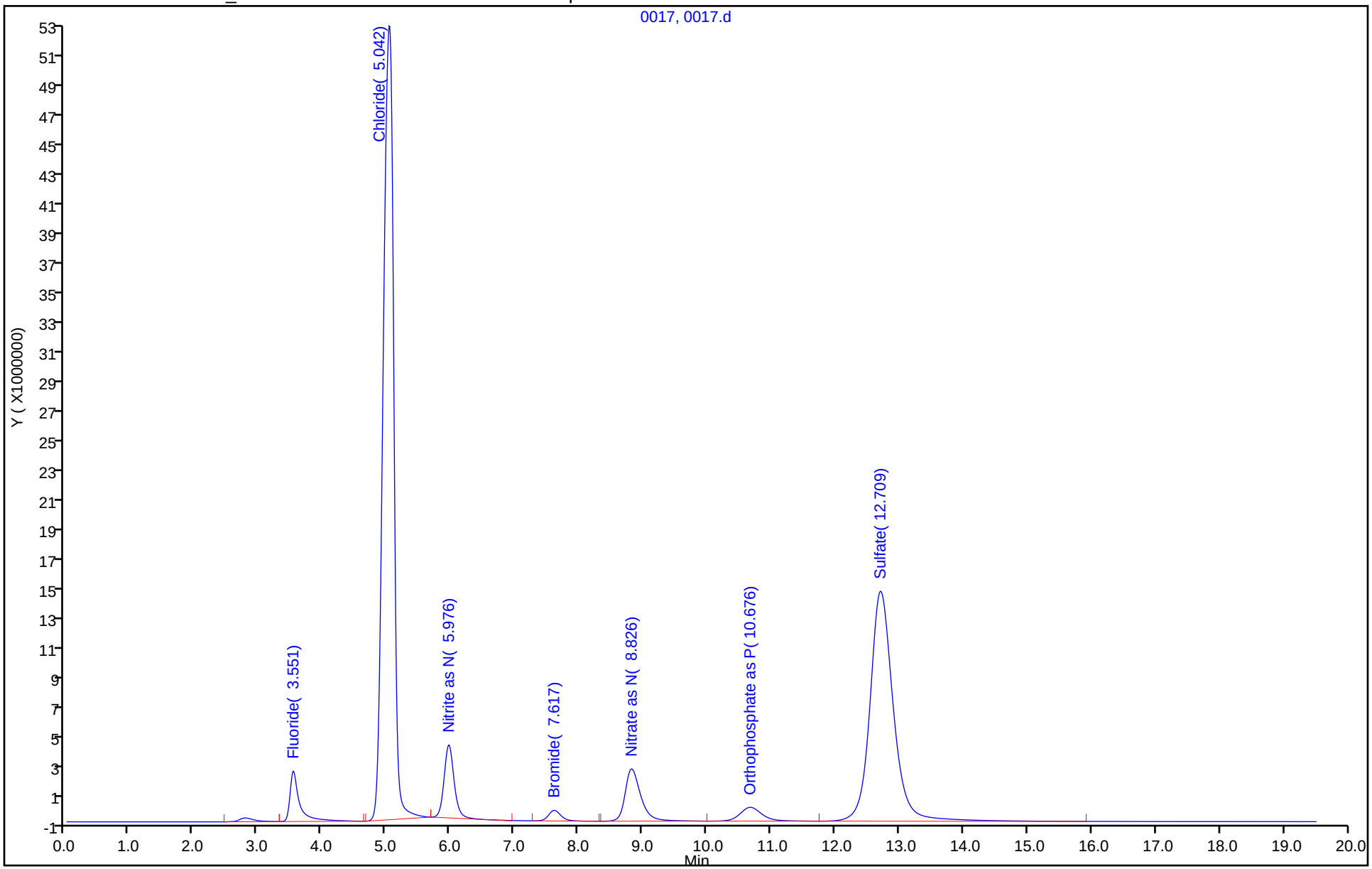
IC LCS_01284 Amount Added: 5.00 Units: mL

Report Date: 17-Jul-2018 07:07:20 Chrom Revision: 2.2 07-Jun-2018 07:41:54

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180716-72004.b\0017.d

Injection Date:	16-Jul-2018 22:54:00	Instrument ID:	WC_IonChrom11	Operator ID:	
Lims ID:	ccv			Worklist Smp#:	17
Client ID:					
Injection Vol:	10.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC11	Limit Group:	Wet - Anions		



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180716-72004.b\0018.d
Lims ID: ccb
Client ID:
Sample Type: CCB
Inject. Date: 16-Jul-2018 23:17:00 ALS Bottle#: 0 Worklist Smp#: 18
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Sample Info: 280-0072004-018
Misc. Info.: 8013
Operator ID: Instrument ID: WC_IonChrom11

Method: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180716-72004.b\Anions_IC11.m
Limit Group: Wet - Anions
Last Update: 17-Jul-2018 07:07:20 Calib Date: 11-Jul-2018 13:37:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180711-71878.b\0007.d

Column 1 : Det: 0005
Process Host: CTX0302

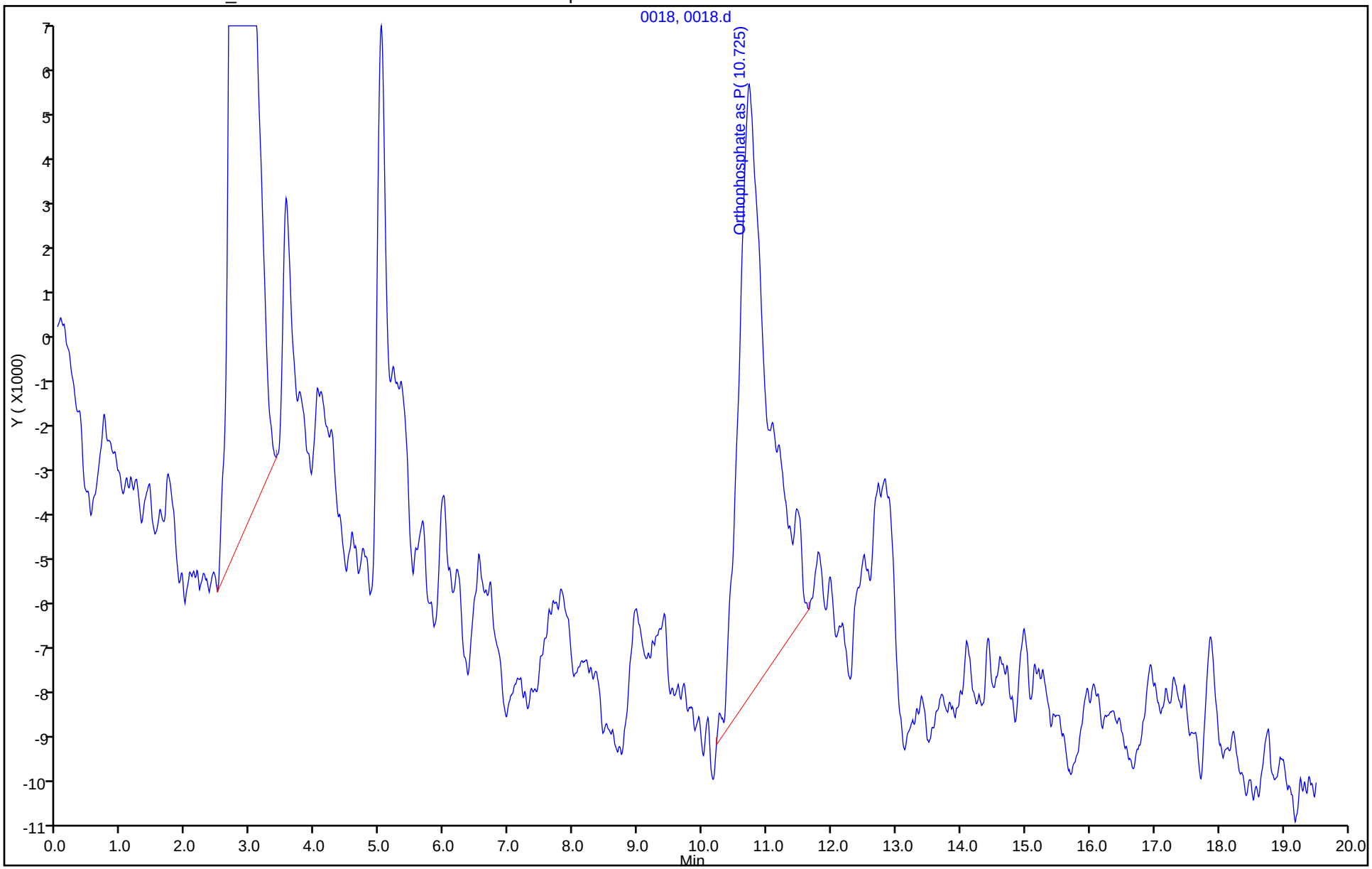
Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride		3.559				ND	
2 Chloride		5.051				ND	
3 Nitrite as N		5.984				ND	
4 Bromide		7.626				ND	
5 Nitrate as N		8.842				ND	
7 Orthophosphate as P	10.725	10.792	-0.067	439781		0.0282	
6 Sulfate		12.859				ND	

Report Date: 17-Jul-2018 07:07:20 Chrom Revision: 2.2 07-Jun-2018 07:41:54

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180716-72004.b\0018.d

Injection Date:	16-Jul-2018 23:17:00	Instrument ID:	WC_IonChrom11	Operator ID:	
Lims ID:	ccb			Worklist Smp#:	18
Client ID:					
Injection Vol:	10.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC11	Limit Group:	Wet - Anions		



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180716-72004.b\0028.d
Lims ID: 280-111421-H-1
Client ID: FBQmw-174-062518-GW
Sample Type: Client
Inject. Date: 17-Jul-2018 03:01:00 ALS Bottle#: 0 Worklist Smp#: 28
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Sample Info: 280-0072004-028
Misc. Info.: 13700 43f
Operator ID: Instrument ID: WC_IonChrom11

Method: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180716-72004.b\Anions_IC11.m
Limit Group: Wet - Anions
Last Update: 03-Oct-2018 17:32:43 Calib Date: 11-Jul-2018 13:37:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180711-71878.b\0007.d

Column 1 : Det: 0005
Process Host: CTX0317

First Level Reviewer: newcomer Date: 03-Oct-2018 17:33:12

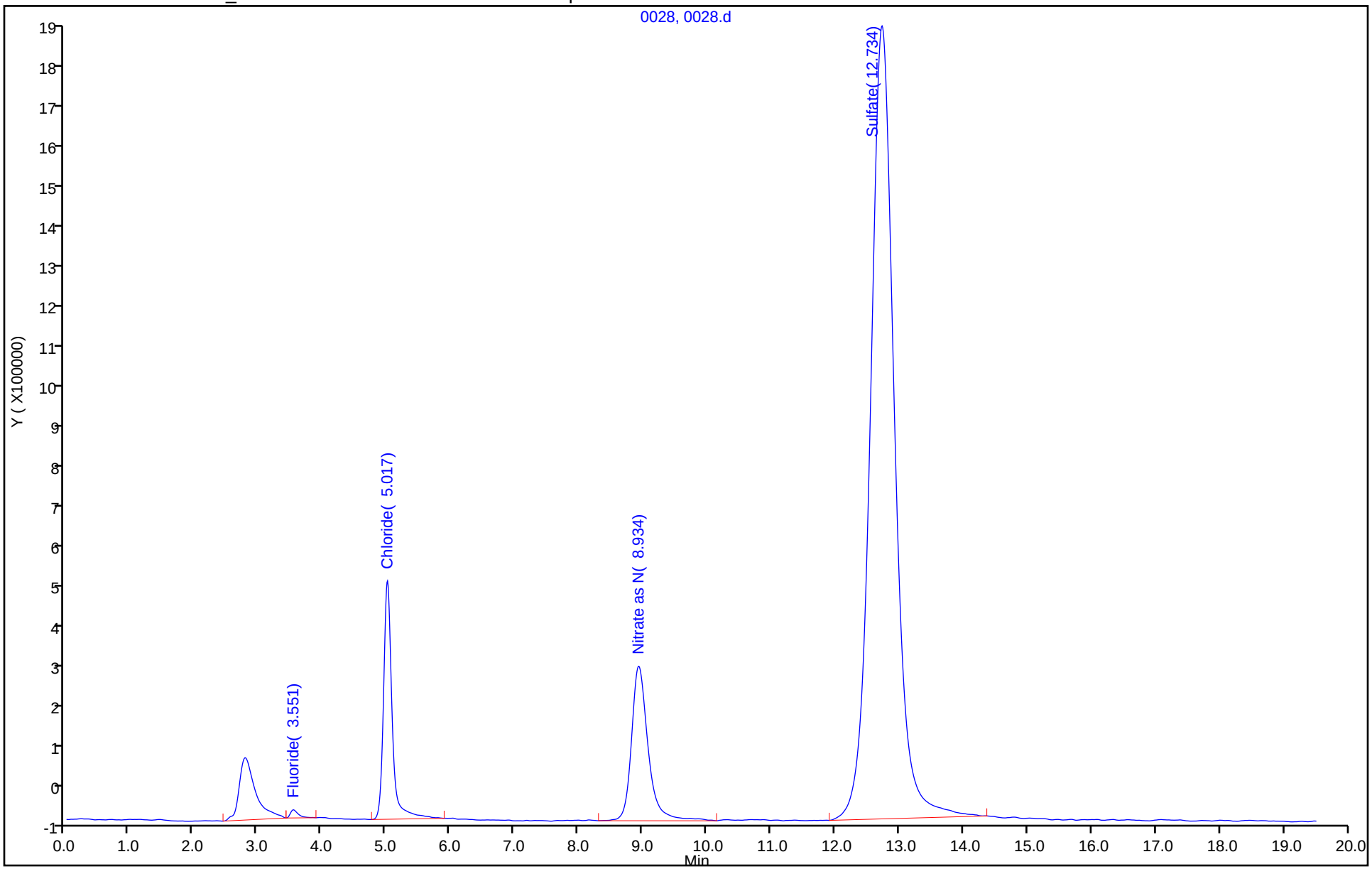
Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ug/ml	Flags
1 Fluoride	3.551	3.559	-0.008	158999	0.0593	
2 Chloride	5.017	5.051	-0.034	5129241	1.40	
3 Nitrite as N		5.984			ND	
4 Bromide		7.626			ND	
5 Nitrate as N	8.934	8.842	0.092	6462267	0.5558	
7 Orthophosphate as P		10.792			ND	
6 Sulfate	12.734	12.859	-0.125	47947818	12.1	

Report Date: 03-Oct-2018 17:33:34 Chrom Revision: 2.3 19-Jul-2018 15:14:50

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180716-72004.b\0028.d

Injection Date:	17-Jul-2018 03:01:00	Instrument ID:	WC_IonChrom11	Operator ID:	
Lims ID:	280-111421-H-1	Lab Sample ID:	280-111421-1	Worklist Smp#:	28
Client ID:	FBQmw-174-062518-GW				
Injection Vol:	10.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC11	Limit Group:	Wet - Anions		



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180716-72004.b\0029.d
Lims ID: ccv
Client ID:
Sample Type: CCV
Inject. Date: 17-Jul-2018 03:23:00 ALS Bottle#: 0 Worklist Smp#: 29
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Sample Info: 280-0072004-029
Misc. Info.: 18842
Operator ID: Instrument ID: WC_IonChrom11
Sublist: chrom-Anions_IC11*sub1

Method: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180716-72004.b\Anions_IC11.m
Limit Group: Wet - Anions
Last Update: 17-Jul-2018 07:07:24 Calib Date: 11-Jul-2018 13:37:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180711-71878.b\0007.d

Column 1 : Det: 0005
Process Host: CTX0302

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride	3.542	3.559	-0.017	34756586	5.00	5.01	
2 Chloride	5.059	5.051	0.008	595341471	100.0	95.9	
3 Nitrite as N	5.992	5.984	0.008	52620997	5.00	4.92	
4 Bromide	7.659	7.626	0.033	9514452	5.00	4.94	
5 Nitrate as N	8.875	8.842	0.033	58113184	5.00	4.85	
7 Orthophosphate as P	10.659	10.792	-0.133	21214301	5.00	5.05	
6 Sulfate	12.684	12.859	-0.175	383071284	100.0	93.4	

Reagents:

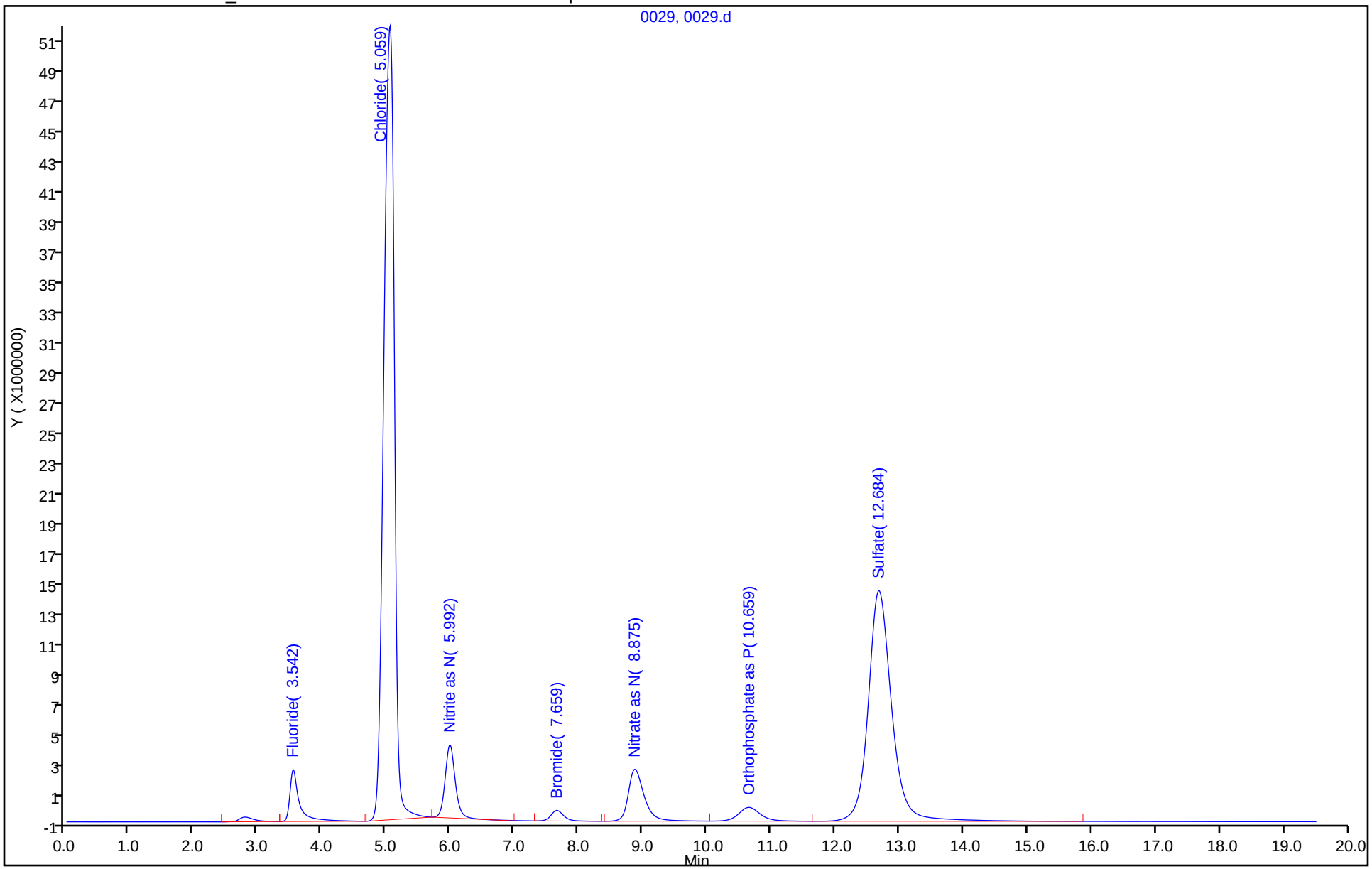
IC LCS_01284 Amount Added: 5.00 Units: mL

Report Date: 17-Jul-2018 07:07:24 Chrom Revision: 2.2 07-Jun-2018 07:41:54

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180716-72004.b\0029.d

Injection Date:	17-Jul-2018 03:23:00	Instrument ID:	WC_IonChrom11	Operator ID:	
Lims ID:	ccv			Worklist Smp#:	29
Client ID:					
Injection Vol:	10.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC11	Limit Group:	Wet - Anions		



TestAmerica Denver
Target Compound Quantitation Report

Data File:	\\ChromNA\Denver\ChromData\WC_IonChrom11\20180716-72004.b\0030.d				
Lims ID:	ccb				
Client ID:					
Sample Type:	CCB				
Inject. Date:	17-Jul-2018 03:46:00	ALS Bottle#:	0	Worklist Smp#:	30
Injection Vol:	10.0 ul	Dil. Factor:	1.0000		
Sample Info:	280-0072004-030				
Misc. Info.:	11018				
Operator ID:		Instrument ID:	WC_IonChrom11		
Method:	\\ChromNA\Denver\ChromData\WC_IonChrom11\20180716-72004.b\Anions_IC11.m				
Limit Group:	Wet - Anions				
Last Update:	17-Jul-2018 07:07:24	Calib Date:	11-Jul-2018 13:37:00		
Integrator:	Falcon				
Quant Method:	External Standard	Quant By:	Initial Calibration		
Last ICal File:	\\ChromNA\Denver\ChromData\WC_IonChrom11\20180711-71878.b\0007.d				
Column 1 :			Det: 0005		
Process Host:	CTX0302				

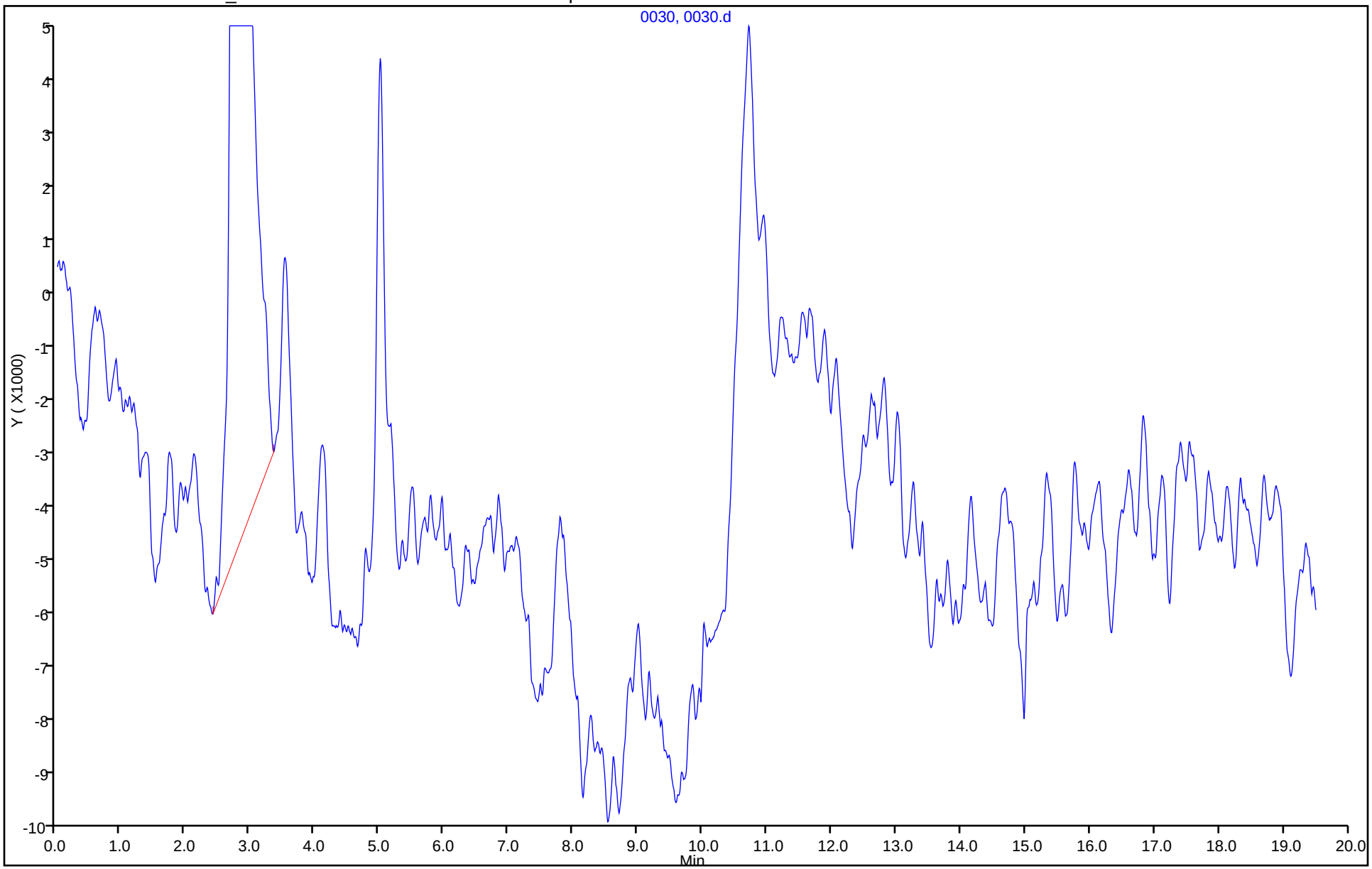
Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride		3.559				ND	
2 Chloride		5.051				ND	
3 Nitrite as N		5.984				ND	
4 Bromide		7.626				ND	
5 Nitrate as N		8.842				ND	
7 Orthophosphate as P		10.792				ND	
6 Sulfate		12.859				ND	

Report Date: 17-Jul-2018 07:07:25 Chrom Revision: 2.2 07-Jun-2018 07:41:54

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180716-72004.b\0030.d

Injection Date:	17-Jul-2018 03:46:00	Instrument ID:	WC_IonChrom11	Operator ID:	
Lims ID:	ccb			Worklist Smp#:	30
Client ID:					
Injection Vol:	10.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC11	Limit Group:	Wet - Anions		



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180716-72004.b\0031.d
Lims ID: 280-111421-C-2
Client ID: FBQmw-175-062518-GW
Sample Type: Client
Inject. Date: 17-Jul-2018 04:08:00 ALS Bottle#: 0 Worklist Smp#: 31
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Sample Info: 280-0072004-031
Misc. Info.: 31445 70f
Operator ID: Instrument ID: WC_IonChrom11

Method: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180716-72004.b\Anions_IC11.m
Limit Group: Wet - Anions
Last Update: 03-Oct-2018 17:32:43 Calib Date: 11-Jul-2018 13:37:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180711-71878.b\0007.d

Column 1 : Det: 0005
Process Host: CTX0317

First Level Reviewer: newcomer Date: 03-Oct-2018 17:33:26

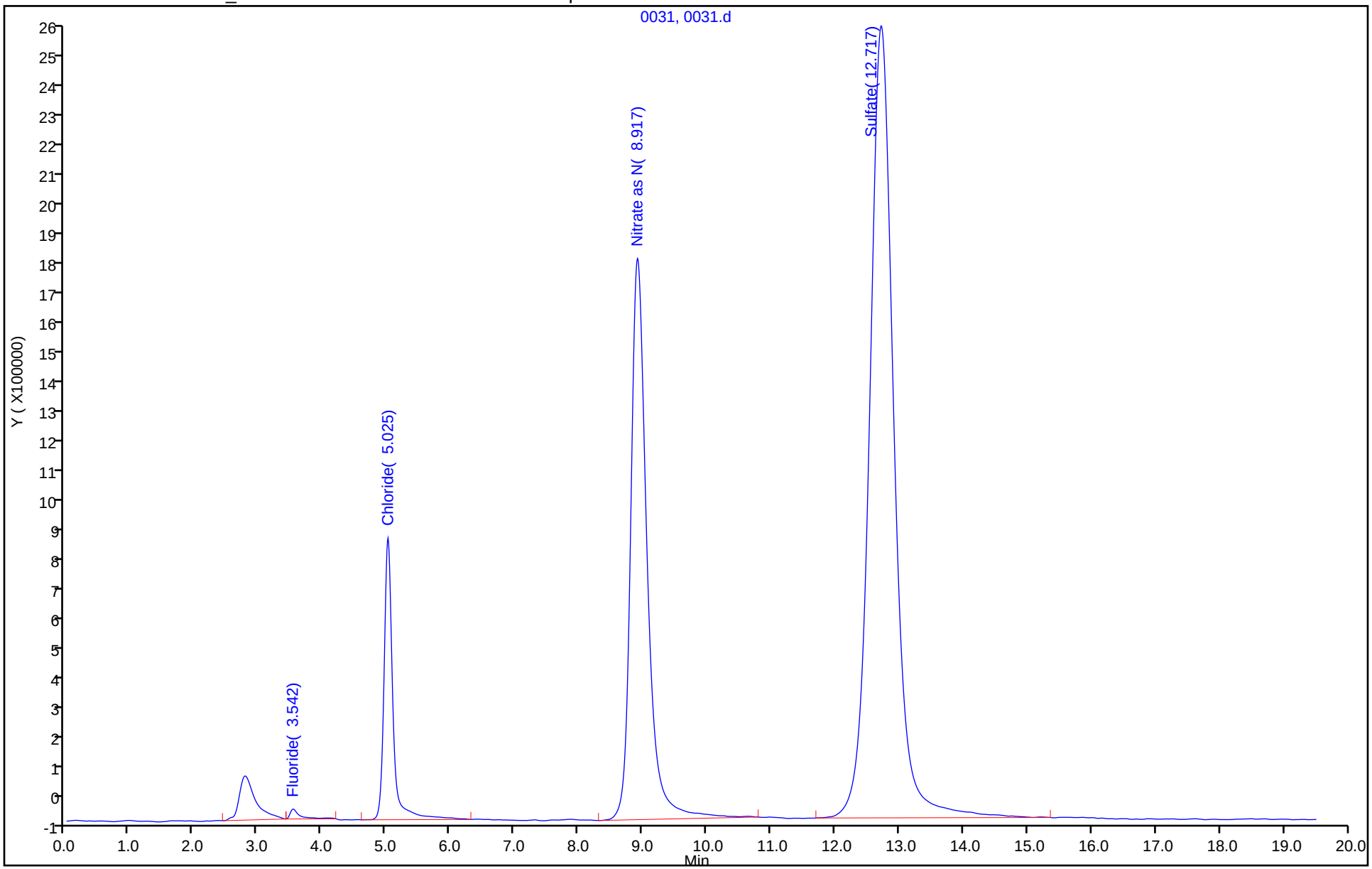
Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ug/ml	Flags
1 Fluoride	3.542	3.559	-0.017	351354	0.0868	
2 Chloride	5.025	5.051	-0.026	8723023	1.98	
3 Nitrite as N		5.984			ND	
4 Bromide		7.626			ND	
5 Nitrate as N	8.917	8.842	0.075	32451909	2.72	
7 Orthophosphate as P		10.792			ND	
6 Sulfate	12.717	12.859	-0.142	68000064	16.9	

Report Date: 03-Oct-2018 17:33:35 Chrom Revision: 2.3 19-Jul-2018 15:14:50

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180716-72004.b\0031.d

Injection Date:	17-Jul-2018 04:08:00	Instrument ID:	WC_IonChrom11	Operator ID:	
Lims ID:	280-111421-C-2	Lab Sample ID:	280-111421-2	Worklist Smp#:	31
Client ID:	FBQmw-175-062518-GW				
Injection Vol:	10.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC11	Limit Group:	Wet - Anions		



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180716-72004.b\0035.d
Lims ID: ccv
Client ID:
Sample Type: CCV
Inject. Date: 17-Jul-2018 05:38:00 ALS Bottle#: 0 Worklist Smp#: 35
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Sample Info: 280-0072004-035
Misc. Info.: 4074
Operator ID: Instrument ID: WC_IonChrom11
Sublist: chrom-Anions_IC11*sub1

Method: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180716-72004.b\Anions_IC11.m
Limit Group: Wet - Anions
Last Update: 17-Jul-2018 07:07:26 Calib Date: 11-Jul-2018 13:37:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180711-71878.b\0007.d

Column 1 : Det: 0005
Process Host: CTX0302

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride	3.542	3.559	-0.017	34840574	5.00	5.02	
2 Chloride	5.059	5.051	0.008	596590009	100.0	96.1	
3 Nitrite as N	5.992	5.984	0.008	52706893	5.00	4.93	
4 Bromide	7.667	7.626	0.041	9502463	5.00	4.94	
5 Nitrate as N	8.884	8.842	0.042	58223566	5.00	4.86	
7 Orthophosphate as P	10.642	10.792	-0.150	21376970	5.00	5.09	
6 Sulfate	12.667	12.859	-0.192	385514145	100.0	94.0	

Reagents:

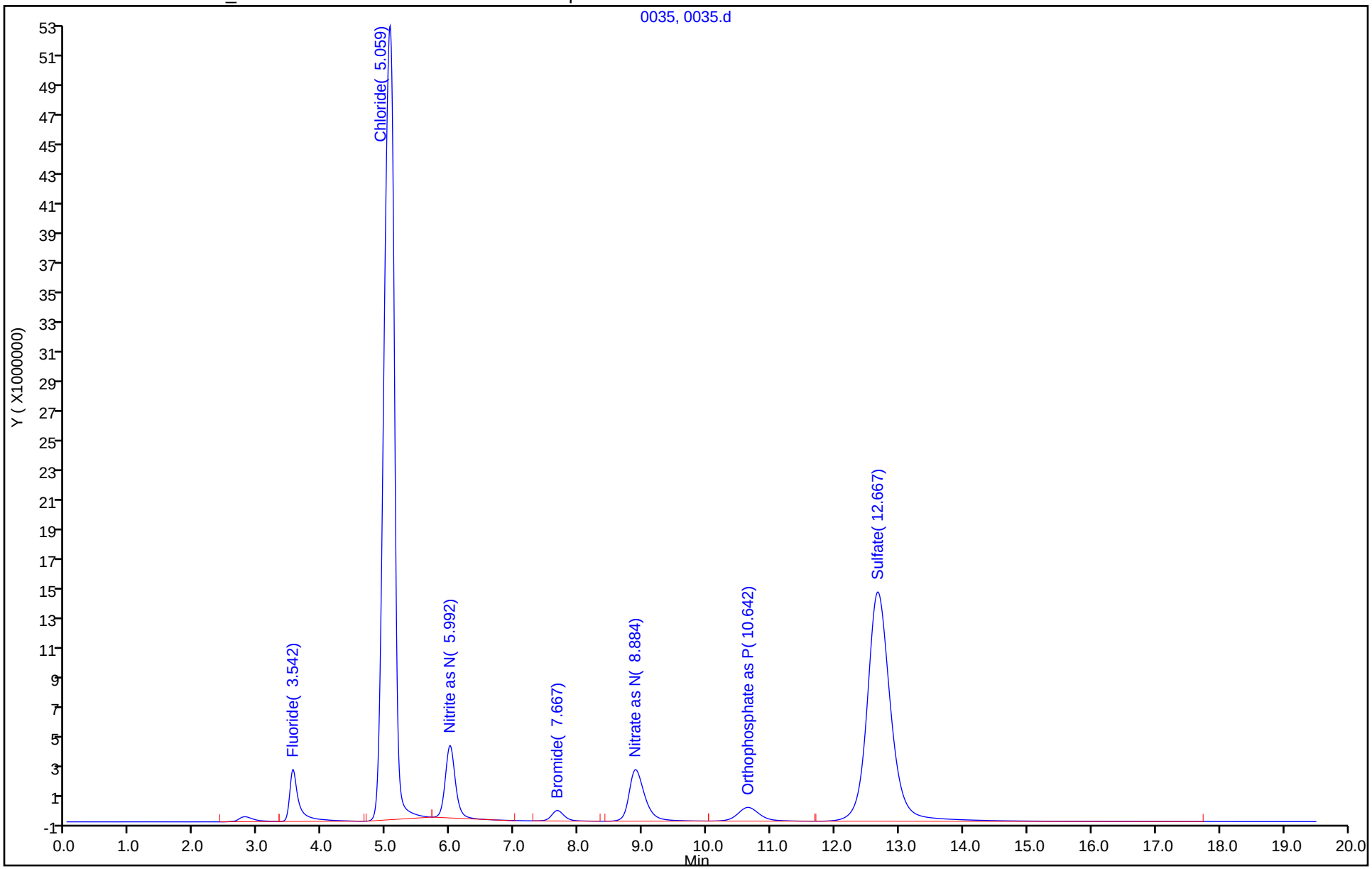
IC LCS_01284 Amount Added: 5.00 Units: mL

Report Date: 17-Jul-2018 07:07:26 Chrom Revision: 2.2 07-Jun-2018 07:41:54

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180716-72004.b\0035.d

Injection Date:	17-Jul-2018 05:38:00	Instrument ID:	WC_IonChrom11	Operator ID:	
Lims ID:	ccv			Worklist Smp#:	35
Client ID:					
Injection Vol:	10.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC11	Limit Group:	Wet - Anions		



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180716-72004.b\0036.d
Lims ID: ccb
Client ID:
Sample Type: CCB
Inject. Date: 17-Jul-2018 06:00:00 ALS Bottle#: 0 Worklist Smp#: 36
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Sample Info: 280-0072004-036
Misc. Info.: 53
Operator ID: Instrument ID: WC_IonChrom11

Method: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180716-72004.b\Anions_IC11.m
Limit Group: Wet - Anions
Last Update: 17-Jul-2018 07:07:26 Calib Date: 11-Jul-2018 13:37:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180711-71878.b\0007.d

Column 1 : Det: 0005
Process Host: CTX0302

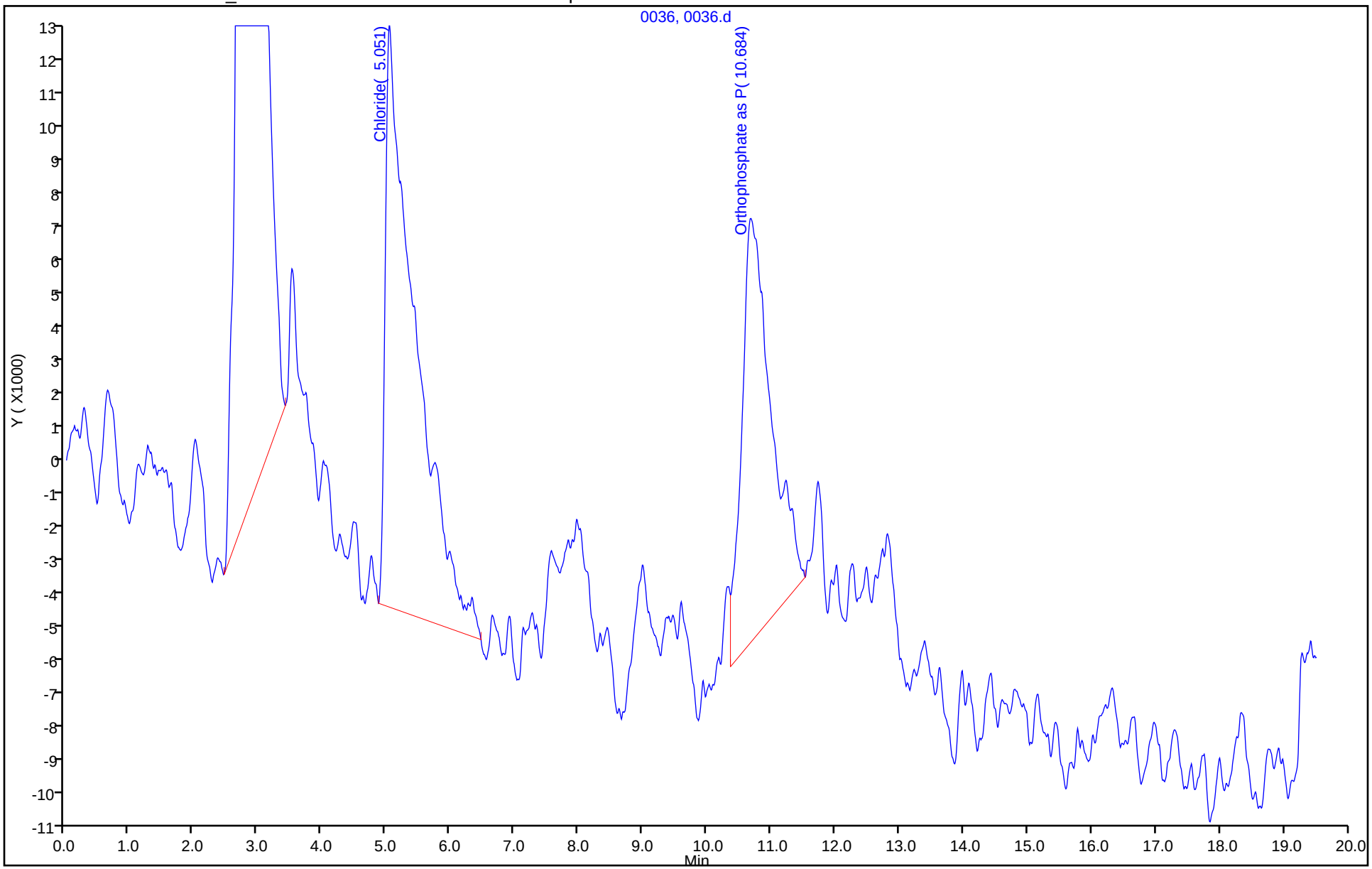
Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride		3.559				ND	
2 Chloride	5.051	5.051	0.000	553004		0.6694	
3 Nitrite as N		5.984				ND	
4 Bromide		7.626				ND	
5 Nitrate as N		8.842				ND	
7 Orthophosphate as P	10.684	10.792	-0.108	390174		0.0162	
6 Sulfate		12.859				ND	

Report Date: 17-Jul-2018 07:07:27 Chrom Revision: 2.2 07-Jun-2018 07:41:54

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20180716-72004.b\0036.d

Injection Date:	17-Jul-2018 06:00:00	Instrument ID:	WC_IonChrom11	Operator ID:	
Lims ID:	ccb			Worklist Smp#:	36
Client ID:					
Injection Vol:	10.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC11	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: KMB / KF	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:

QC dup

Special Instructions/Note:

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 - Anions (Chlorides 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		
KF	~~FBQ~~ FBQmw-174-062518-GW	06/25/18	1340	G	W	N	N				X				X	X						X	X	X				9	B, C
KF	FBQ~~MW~~mw-175-062518-GW	06/25/18	1255	G	W	N	N								X	X						X	X	X				3	B, C
	FBQmw-176-062518-GW	06/25/18	1428	G	W	N	N										X											1	B

dup

280-111421 Chain of Custody

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
	6-25-18/1701	Cardno		6/25/18 1800	TAL
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	6/26/18 - 1525	Cardno		6/27/18 0415	TA Denver
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: 1.6, 1.3, 0.4, 3.8, 3.2, 0.3, 2.3, 1.6°C

IR#8 CF. 0.0

10/04/2018

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: KF & KMB	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	PO #:			
Phone: 434-906-2085	WO #: 076003.009.011			
Email: Danyelle.Phillips@cardno-gs.com	Project #: 28014271			
Project Name: Ravenna, OH -	SSOW#:			
Site: Ravenna				

Analysis Requested

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=wastefoil, 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		
LL2mw-247-0626 18-GW	6/26/18	1010	G	W	N	Y					X				X		X	X										21	D, B, MS/MSD
																										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: 6-26-18/1250	Company: Cardno	Received by:	Date/Time: 6/27/18 1400	Company: TAL
Relinquished by:	Date/Time: 6/26/18 - 1850	Company: TAL	Received by:	Date/Time: 6/27/18 0915	Company: TAL DEN
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:

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

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: AJ & CJ / KB & 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:			
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 - dup

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)	9080 - 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	
LL12mw-247-D-062618-GW	06/26/18	1010	G	W	N	N					X				X		X	X							X			7	D,B
LL4mw-193-062618-GW	06/26/18	0833	G	W	N	N											X											1	B
LL10mw-003-062618-GW	6-26-18	1009	G	W	N	MS			X								X	X										9	MS/MSD
												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	Company	Received by	Date/Time	Company
	6-26-18/1250	Cardno			
Charles Gantt	6-26-18 16:00	240	Josh Dhunday	6/27/18 0915	TAden

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

Client Information	Sampler: AJ & CJ	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:

QC dup

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (Wwater, Sssolid, Owwastefoil, 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		
NTAMW-119-062518-GW	06/25/18	1315	G	W			X		X				X		X			X										10	SAMPLED THRU YSI
NTAMW-119-D-062518-GW	06/25/18	1315	G	W			X		X				X		X			X										10	SAMPLED THRU YSI
NTA MW-117-062518 GW	06/25/18	1604	G	W													X											1	
NTAMW-118-062518-GW	6-25-18	1555	G	W													X											1	
TB-062518-02	6-25-18	1200	G	W			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:

	Date/Time	Company	Received by	Date/Time	Company
Relinquished by:	6-25-18/1701	Cardno		6/25/18 1800	TAL
Relinquished by:	6/26/18 1532		Received by:	6/27/18 0915	TA Denver
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: JC & SM	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

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (Water, Solid, Oil, etc.)	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)	8060 - 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		
FWGmw-01C-062518-GW	06.25.18	14:23	G	W							X				X			X										6	QC dup
FWGmw-015-062518-GW	062518	14:45	G	W							X				X			X										5	
FWGmw-004-062518-GW	062518	15:48	G	W							X				X			X										5	

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
	6-25-18 / 1701	Cardno		6/25/18 1800	TAL
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Rebuck	6/25/18 1550	CAS	Josh Thomas	6/27/18 0915	TAL
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: JC J CJ	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#:			

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, Owaste/oil, BTeTissue, AeAir)	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)	8465 - 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		
DETmw-003-062618-GW	06.26.18		G	W			X	X					X	X	X	X	X	X										15	dep
DETmw-003-D-062618-GW	06.26.18	0903	G	W	N	M	X	X					X	X	X	X	X	X										15	
~~DA2mw-45-062618-GW~~	06.26.18		G	W							X				X			X										3	dep
~~FWGMW-~~																													
FWGMW-010-062618-GW	06.26.18	1200	G	W	N	N											X												
DETmw-003-062618-GW	6-26-18	0903	G	W	N	M	X																					3	
LL10mw-003-062618-GW	6-26-18	1009	G	W	N	M	X																					9	MS/MS D
TB-062618-01	6-26-18	0800	G	W	N	N	X																					1	
																													dep

not supposed to be worked out 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:	Date/Time:	Company	Received by:	Date/Time:	Company
	6-26-18/1250	Cardno		6-26-18 1530	A/O
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	6-26-18 1600	A/O		6/27/18 0915	TA Denver
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

Page 125 of 128

10/04/2018

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: 280-74694-24755.3 1 of 1
Client Contact: Pei Geng	Phone: 434-906-2085	E-Mail: patrick.mcentee@testamericainc.com		Page: Page 3 of 11
Company: Laboratory Data Consultants, Inc.				Job #:
Address: 2701 Loker Ave. West Suite 220	Due Date Requested:			
City: Carlsbad	TAT Requested (days):			
State, Zip: CA, 92010				
Phone:	PO #: 0091979			
Email: pgeng@lab-data.com	WO #:			
Project Name: Ravenna, OH	Project #: 28014271			
Site: Ravenna	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 - Na2S2O3
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-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_DOD5 - VOCs	8260B - TCLP Volatiles	6860_DOD5 - Perchlorate	9012B_DOD5 - Cyanide	7196A - Hexavalent Chromium	9034 - Sulfide	SVOCs List 4 8270D	Total Metals 6010C/6020A/7470A	Ferrous/Ferric 8330B	PCBs 8082A	Pesticides 8081B	PAHs 8270D SIM	SVOCs List 1 8270D	Total Number of containers	Special Instructions/Note:
			Preservation Code:				A	N	N	B	N	CB	V	D	N	N	N	N	N		
DA2mw-115-062618-GW	6-26-18	0903	G	Water	N	N				X			X	X	X					6	
DETmw-003-062818-GW	6-26-18	0903	G	Water	N	N				X				X	X	X	X	X	X	12	
				Water																	
				Water																	
				Water																	
				Water																	
				Water																	
				Water																	
				Water																	
				Water																	
				Water																	

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
	6-26-18/1250	Cardno		6/26/18 1400	TA/ZLO
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	6/26/18 - 1608	ZLS		6/27/18 0915	TA Denver
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:

Ver: 08/04/2016

10/04/2018

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: ANR / CMJ	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: Page:
Company: Cardno TEC, Inc				Job #:
Address: 1658 Cole Boulevard Suite 190	Due Date Requested:			
City: Golden	TAT Requested (days):			
State, Zip: CO, 80401				
Phone: 434-906-2085	PO #:			
Email: Danyelle.Phillips@cardno-gs.com	WO #: 076003.009.011			
Project Name: Ravenna, OH	TestAmerica Project #: 28014271			
Site: Ravenna	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 - Na2S2O3
G - Amchlor	S - H2SO4
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I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	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)	SVOCs (full) (8270D)	Explosives/Propellants (8330B)	Perchlorate (6860)	Nitroguanidine (8330)	Nitrocellulose (353.2)	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N	N	N	N	N		
NTAmw-120-062618-GW	6/26/18	0847	G	W	Y	N	X	X	X	X	X	8	Perchlorate only
NTAmw-120-D-062618-GW	6/26/18	0847	G	W	Y	N	X	X	X	X	X	8	Perchlorate only

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
1		6-26-18/1250	Cardno		6/26/18 1400	TA Denver
2		6/26/18 1530	TA Denver		6/27/18 0915	TA Denver
3						

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

10/04/2018

Login Sample Receipt Checklist

Client: Cardno GS, Inc

Job Number: 280-111421-2

Login Number: 111421

List Source: TestAmerica Denver

List Number: 1

Creator: Rhoades, Joseph P

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.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	False	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	