ANALYTICAL REPORT

Job Number: 280-88669-1

Job Description: Gold King Mine, CO - A85M

For:
TechLaw, Inc.
1299 Washington Ave., Suite 270
Golden, CO 80401

Attention: Ms. Nikki Thomsen

Approved for release.
Jessica H DeHerrera
Project Manager I
10/20/2016 4:53 PM

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10/20/2016

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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CASE NARRATIVE

Client: TechLaw, Inc.

Project: Gold King Mine, CO - A85M

Report Number: 280-88669-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

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 09/28/2016; the samples arrived in good condition, properly preserved and on ice. The temperature of the cooler at receipt was 2.9º C.

The Chain-of-Custody requests MS/MSD analysis for sample CCO2D (280-88669-2). Please note that pH is not a spiked analysis; therefore, MS/MSD cannot be performed for this method.

The Chain-of-Custody requests rush turnaround times of 24 and 48 hours. Per discussion with Scott Walker on 9/28/2016, the samples requested a rush turnaround time due to the short hold analyses; however, a rush turnaround time was not actually needed. Therefore, the short hold analyses were logged in on a standard turnaround time.

HEXAVALENT CHROMIUM
Sample CCO2D (280-88669-1) was analyzed for hexavalent chromium in accordance with SM19 3500 CR D. The samples were analyzed on 09/28/2016.

Cr (VI) failed the recovery criteria low for the MS of sample CCO2D-MS (280-88669-1) in batch 280-344083. The associated laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) recoveries met acceptance criteria, and the sample results have been flagged accordingly.

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

PH (CORROSIVITY)
Sample CCO2D (280-88669-2) was analyzed for pH (corrosivity) in accordance with EPA SW-846 Method 9045D. The samples were leached on 10/18/2016 and analyzed on 10/18/2016.

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

ANIONS (28 DAYS)
Sample CCO2D (280-88669-3) was analyzed for anions (28 days) in accordance with EPA SW-846 Method 9056A. The samples were leached on 09/29/2016 and analyzed on 09/29/2016.

Chloride and Sulfate were detected in method blank MB 280-344354/3-A at levels that were above the method detection limit but below the reporting limit. The values should be considered estimates, and have been flagged “J”. However, because the result concentrations were less than ½ the respective reporting limits, no corrective action was necessary. If the associated sample reported a result above the MDL and/or RL, the result has been flagged.

Sulfate failed the recovery criteria low for the MS and MSD of sample CCO2D (280-88669-3) in batch 280-344269. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample and laboratory control sample duplicate (LCS/LCSD) recoveries were within acceptance limits.

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

ANIONS (48 HOURS)
Sample CCO2D (280-88669-3) was analyzed for anions (48 hours) in accordance with EPA SW-846 Method 9056A. The samples were leached on 09/29/2016 and analyzed on 09/29/2016.

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

SAMPLE SUMMARY

Client: TechLaw, Inc. Job Number: 280-88669-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
280-88669-1	CCO2D	Water	09/27/2016 1057	09/28/2016 0655
280-88669-1MS	CCO2D-MS	Water	09/27/2016 1057	09/28/2016 0655
280-88669-1MSD	CCO2D-MSD	Water	09/27/2016 1057	09/28/2016 0655
280-88669-2	CCO2D	Solid	09/27/2016 1130	09/28/2016 0655
280-88669-3	CCO2D	Solid	09/27/2016 1127	09/28/2016 0655
280-88669-3MS	CCO2D-MS	Solid	09/27/2016 1127	09/28/2016 0655
280-88669-3MSD	CCO2D-MSD	Solid	09/27/2016 1127	09/28/2016 0655

EXECUTIVE SUMMARY - Detections

Client: TechLaw, Inc. Job Number: 280-88669-1

Lab Sample ID Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
280-88669-2	**CCO2D**					
Soluble						
pH adj. to 25 deg C-Soluble		3.9	HF	0.1	SU	9045D
Temperature-Soluble		21.5	HF	1.0	Degrees C	9045D
280-88669-3	**CCO2D**					
Soluble						
Sulfate-Soluble		480	F1 B	49	mg/Kg	9056A

METHOD SUMMARY

Client: TechLaw, Inc. Job Number: 280-88669-1

Description	Lab Location	Method	Preparation Method
Matrix: Solid			
pH	TAL DEN	SW846 9045D	
Deionized Water Leaching Procedure	TAL DEN		ASTM DI Leach
Anions, Ion Chromatography	TAL DEN	SW846 9056A	
Deionized Water Leaching Procedure	TAL DEN		ASTM DI Leach
Matrix: Water			
Chromium, Hexavalent	TAL DEN	SM SM 3500 CR D	

Lab References:

TAL DEN = TestAmerica Denver

Method References:

ASTM = ASTM International

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

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

METHOD / ANALYST SUMMARY

Client: TechLaw, Inc.

Job Number: 280-88669-1

Method	Analyst	Analyst ID
SW846 9045D	Uge, Ikem E	IEU
SW846 9056A	Benson, Alex F	AFB
SM SM 3500 CR D	Lehman, Jeffrey M	JML

General Chemistry

Client Sample ID: **CCO2D**

Lab Sample ID: 280-88669-1 Date Sampled: 09/27/2016 1057
Client Matrix: Water Date Received: 09/28/2016 0655

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Cr (VI)	ND	F1	mg/L	0.0040	0.020	1.0	SM 3500 CR D

Analysis Batch: 280-344083 Analysis Date: 09/28/2016 0926

General Chemistry

Client Sample ID: **CCO2D**

Lab Sample ID: 280-88669-2 Date Sampled: 09/27/2016 1130
Client Matrix: Solid Date Received: 09/28/2016 0655

Analyte	Result	Qual	Units	RL	RL	Dil	Method
pH adj. to 25 deg C-Soluble	3.9	HF	SU	0.1	0.1	1.0	9045D
Analysis Batch: 280-347052	Analysis Date: 10/18/2016 1323					DryWt Corrected: N	
Temperature-Soluble	21.5	HF	Degrees C	1.0	1.0	1.0	9045D
Analysis Batch: 280-347052	Analysis Date: 10/18/2016 1323					DryWt Corrected: N	

General Chemistry

Client Sample ID: **CCO2D**

Lab Sample ID: 280-88669-3 Date Sampled: 09/27/2016 1127
Client Matrix: Solid Date Received: 09/28/2016 0655

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Chloride-Soluble	ND	B	mg/Kg	2.0	30	1.0	9056A
Analysis Batch: 280-344269	Analysis Date: 09/29/2016 1745					DryWt Corrected: N	
Nitrate as N-Soluble	ND		mg/Kg	0.31	4.9	1.0	9056A
Analysis Batch: 280-344268	Analysis Date: 09/29/2016 1745					DryWt Corrected: N	
Nitrite as N-Soluble	ND		mg/Kg	0.33	4.9	1.0	9056A
Analysis Batch: 280-344268	Analysis Date: 09/29/2016 1745					DryWt Corrected: N	
Sulfate-Soluble	480	F1 B	mg/Kg	1.7	49	1.0	9056A
Analysis Batch: 280-344269	Analysis Date: 09/29/2016 1745					DryWt Corrected: N	

Client: TechLaw, Inc.

Job Number: 280-88669-1

Lab Control Sample - Batch: 280-347052

Method: 9045D
Preparation: N/A

Lab Sample ID:	LCS 280-347014/1-A	Analysis Batch:	280-347052	Instrument ID:	No Equipment Assigned
Client Matrix:	Solid	Prep Batch:	N/A	Lab File ID:	N/A
Dilution:	1.0	Leach Batch:	280-347014	Initial Weight/Volume:	1 mL
Analysis Date:	10/18/2016 1323	Units:	SU	Final Weight/Volume:	1 mL
Prep Date:	N/A				
Leach Date:	10/18/2016 0936				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
pH adj. to 25 deg C-Soluble	7.00	7.0	100	97 - 103	

Client: TechLaw, Inc. Job Number: 280-88669-1

Method Blank - Batch: 280-344268 **Method: 9056A**
Preparation: N/A

Lab Sample ID:	MB 280-344354/3-A	Analysis Batch:	280-344268	Instrument ID:	WC_IonChrom6
Client Matrix:	Solid	Prep Batch:	N/A	Lab File ID:	09.0000.d
Dilution:	1.0	Leach Batch:	280-344354	Initial Weight/Volume:	5 mL
Analysis Date:	09/29/2016 1727	Units:	mg/Kg	Final Weight/Volume:	5 mL
Prep Date:	N/A				
Leach Date:	09/29/2016 1422				

Analyte	Result	Qual	MDL	RL
Nitrate as N-Soluble	ND		0.31	5.0
Nitrite as N-Soluble	ND		0.33	5.0

Method Reporting Limit Check - Batch: 280-344268 **Method: 9056A**
Preparation: N/A

Lab Sample ID:	MRL 280-344268/3	Analysis Batch:	280-344268	Instrument ID:	WC_IonChrom6
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	03.0000.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	09/29/2016 1004	Units:	mg/L	Final Weight/Volume:	5 mL
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Nitrate as N-Soluble	0.200	0.212	106	50 - 150	J
Nitrite as N-Soluble	0.200	0.185	92	50 - 150	J

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 280-344268 **Method: 9056A**
Preparation: N/A

LCS Lab Sample ID:	LCS 280-344354/1-A	Analysis Batch:	280-344268	Instrument ID:	WC_IonChrom6
Client Matrix:	Solid	Prep Batch:	N/A	Lab File ID:	07.0000.d
Dilution:	1.0	Leach Batch:	280-344354	Initial Weight/Volume:	5 mL
Analysis Date:	09/29/2016 1652	Units:	mg/Kg	Final Weight/Volume:	5 mL
Prep Date:	N/A				25 uL
Leach Date:	09/29/2016 1422				

LCSD Lab Sample ID:	LCSD 280-344354/2-A	Analysis Batch:	280-344268	Instrument ID:	WC_IonChrom6
Client Matrix:	Solid	Prep Batch:	N/A	Lab File ID:	08.0000.d
Dilution:	1.0	Leach Batch:	280-344354	Initial Weight/Volume:	5 mL
Analysis Date:	09/29/2016 1710	Units:	mg/Kg	Final Weight/Volume:	5 mL
Prep Date:	N/A				25 uL
Leach Date:	09/29/2016 1422				

	% Rec.						
Analyte	LCS	LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Nitrate as N-Soluble	101	101	90 - 110	0	10		
Nitrite as N-Soluble	101	102	90 - 110	1	10		

Client: TechLaw, Inc.

Job Number: 280-88669-1

Laboratory Control/
Laboratory Duplicate Data Report - Batch: 280-344268

Method: 9056A
Preparation: N/A

LCS Lab Sample ID:	LCS 280-344354/1-A	Units: mg/Kg	LCSD Lab Sample ID:	LCSD 280-344354/2-A
Client Matrix:	Solid		Client Matrix:	Solid
Dilution:	1.0		Dilution:	1.0
Analysis Date:	09/29/2016 1652		Analysis Date:	09/29/2016 1710
Prep Date:	N/A		Prep Date:	N/A
Leach Date:	09/29/2016 1422		Leach Date:	09/29/2016 1422

Analyte	LCS Spike Amount	LCSD Spike Amount	LCS Result/Qual	LCSD Result/Qual
Nitrate as N-Soluble	50.0	50.0	50.4	50.6
Nitrite as N-Soluble	50.0	50.0	50.5	51.2

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 280-344268

Method: 9056A
Preparation: N/A

MS Lab Sample ID:	280-88669-3	Analysis Batch:	280-344268	Instrument ID:	WC_IonChrom6
Client Matrix:	Solid	Prep Batch:	N/A	Lab File ID:	12.0000.d
Dilution:	1.0	Leach Batch:	280-344354	Initial Weight/Volume:	5 mL
Analysis Date:	09/29/2016 1820			Final Weight/Volume:	5 mL
Prep Date:	N/A				25 uL
Leach Date:	09/29/2016 1422				

MSD Lab Sample ID:	280-88669-3	Analysis Batch:	280-344268	Instrument ID:	WC_IonChrom6
Client Matrix:	Solid	Prep Batch:	N/A	Lab File ID:	13.0000.d
Dilution:	1.0	Leach Batch:	280-344354	Initial Weight/Volume:	5 mL
Analysis Date:	09/29/2016 1838			Final Weight/Volume:	5 mL
Prep Date:	N/A				25 uL
Leach Date:	09/29/2016 1422				

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Nitrate as N-Soluble	87	96	80 - 120	9	20		
Nitrite as N-Soluble	81	93	80 - 120	13	20		

Client: TechLaw, Inc.

Job Number: 280-88669-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 280-344268

Method: 9056A
Preparation: N/A

MS Lab Sample ID:	280-88669-3	Units: mg/Kg	MSD Lab Sample ID:	280-88669-3
Client Matrix:	Solid		Client Matrix:	Solid
Dilution:	1.0		Dilution:	1.0
Analysis Date:	09/29/2016 1820		Analysis Date:	09/29/2016 1838
Prep Date:	N/A		Prep Date:	N/A
Leach Date:	09/29/2016 1422		Leach Date:	09/29/2016 1422

Analyte	Sample Result/Qual	MS Spike Amount	MSD Spike Amount	MS Result/Qual	MSD Result/Qual
Nitrate as N-Soluble	ND	48.9	48.6	42.8	46.6
Nitrite as N-Soluble	ND	48.9	48.6	39.8	45.2

Duplicate - Batch: 280-344268

Method: 9056A
Preparation: N/A

Lab Sample ID:	280-88669-3	Analysis Batch:	280-344268	Instrument ID:	WC_IonChrom6
Client Matrix:	Solid	Prep Batch:	N/A	Lab File ID:	11.0000.d
Dilution:	1.0	Leach Batch:	280-344354	Initial Weight/Volume:	5 mL
Analysis Date:	09/29/2016 1803	Units:	mg/Kg	Final Weight/Volume:	5 mL
Prep Date:	N/A				25 uL
Leach Date:	09/29/2016 1422				

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Nitrate as N-Soluble	ND	ND	NC	15	
Nitrite as N-Soluble	ND	ND	NC	15	

Client: TechLaw, Inc. Job Number: 280-88669-1

Method Blank - Batch: 280-344269 **Method: 9056A**
Preparation: N/A

Lab Sample ID:	MB 280-344354/3-A	Analysis Batch:	280-344269	Instrument ID:	WC_IonChrom6
Client Matrix:	Solid	Prep Batch:	N/A	Lab File ID:	09.0000.d
Dilution:	1.0	Leach Batch:	280-344354	Initial Weight/Volume:	5 mL
Analysis Date:	09/29/2016 1727	Units:	mg/Kg	Final Weight/Volume:	5 mL
Prep Date:	N/A				
Leach Date:	09/29/2016 1422				

Analyte	Result	Qual	MDL	RL
Chloride-Soluble	3.55	J	2.0	30
Sulfate-Soluble	4.16	J	1.7	50

Method Reporting Limit Check - Batch: 280-344269 **Method: 9056A**
Preparation: N/A

Lab Sample ID:	MRL 280-344269/3	Analysis Batch:	280-344269	Instrument ID:	WC_IonChrom6
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	03.0000.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	09/29/2016 1004	Units:	mg/L	Final Weight/Volume:	5 mL
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Chloride-Soluble	2.50	2.52	101	50 - 150	J
Sulfate-Soluble	2.50	2.51	101	50 - 150	J

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 280-344269 **Method: 9056A**
Preparation: N/A

LCS Lab Sample ID:	LCS 280-344354/1-A	Analysis Batch:	280-344269	Instrument ID:	WC_IonChrom6
Client Matrix:	Solid	Prep Batch:	N/A	Lab File ID:	07.0000.d
Dilution:	1.0	Leach Batch:	280-344354	Initial Weight/Volume:	5 mL
Analysis Date:	09/29/2016 1652	Units:	mg/Kg	Final Weight/Volume:	5 mL
Prep Date:	N/A				25 uL
Leach Date:	09/29/2016 1422				

LCSD Lab Sample ID:	LCSD 280-344354/2-A	Analysis Batch:	280-344269	Instrument ID:	WC_IonChrom6
Client Matrix:	Solid	Prep Batch:	N/A	Lab File ID:	08.0000.d
Dilution:	1.0	Leach Batch:	280-344354	Initial Weight/Volume:	5 mL
Analysis Date:	09/29/2016 1710	Units:	mg/Kg	Final Weight/Volume:	5 mL
Prep Date:	N/A				25 uL
Leach Date:	09/29/2016 1422				

	% Rec.						
Analyte	LCS	LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Chloride-Soluble	102	102	90 - 110	0	10	B	B
Sulfate-Soluble	102	102	90 - 110	0	10	B	B

Client: TechLaw, Inc.

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Laboratory Control/
Laboratory Duplicate Data Report - Batch: 280-344269

Method: 9056A
Preparation: N/A

LCS Lab Sample ID:	LCS 280-344354/1-A	Units: mg/Kg	LCSD Lab Sample ID:	LCSD 280-344354/2-A
Client Matrix:	Solid		Client Matrix:	Solid
Dilution:	1.0		Dilution:	1.0
Analysis Date:	09/29/2016 1652		Analysis Date:	09/29/2016 1710
Prep Date:	N/A		Prep Date:	N/A
Leach Date:	09/29/2016 1422		Leach Date:	09/29/2016 1422

Analyte	LCS Spike Amount	LCSD Spike Amount	LCS Result/Qual		LCSD Result/Qual	
Chloride-Soluble	999	1000	1020	B	1020	B
Sulfate-Soluble	999	1000	1020	B	1020	B

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 280-344269

Method: 9056A
Preparation: N/A

MS Lab Sample ID:	280-88669-3	Analysis Batch:	280-344269	Instrument ID:	WC_IonChrom6
Client Matrix:	Solid	Prep Batch:	N/A	Lab File ID:	12.0000.d
Dilution:	1.0	Leach Batch:	280-344354	Initial Weight/Volume:	5 mL
Analysis Date:	09/29/2016 1820			Final Weight/Volume:	5 mL
Prep Date:	N/A				25 uL
Leach Date:	09/29/2016 1422				

MSD Lab Sample ID:	280-88669-3	Analysis Batch:	280-344269	Instrument ID:	WC_IonChrom6
Client Matrix:	Solid	Prep Batch:	N/A	Lab File ID:	13.0000.d
Dilution:	1.0	Leach Batch:	280-344354	Initial Weight/Volume:	5 mL
Analysis Date:	09/29/2016 1838			Final Weight/Volume:	5 mL
Prep Date:	N/A				25 uL
Leach Date:	09/29/2016 1422				

Analyte	% Rec. MS	% Rec. MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Chloride-Soluble	85	95	80 - 120	11	20	B	B
Sulfate-Soluble	65	69	80 - 120	1	20	F1 B	F1 B

Client: TechLaw, Inc.

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Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 280-344269

Method: 9056A
Preparation: N/A

MS Lab Sample ID:	280-88669-3	Units: mg/Kg	MSD Lab Sample ID:	280-88669-3
Client Matrix:	Solid		Client Matrix:	Solid
Dilution:	1.0		Dilution:	1.0
Analysis Date:	09/29/2016 1820		Analysis Date:	09/29/2016 1838
Prep Date:	N/A		Prep Date:	N/A
Leach Date:	09/29/2016 1422		Leach Date:	09/29/2016 1422

Analyte	Sample Result/Qual	MS Spike Amount	MSD Spike Amount	MS Result/Qual		MSD Result/Qual	
Chloride-Soluble	ND	244	243	207	B	231	B
Sulfate-Soluble	480	244	243	635	F1 B	644	F1 B

Duplicate - Batch: 280-344269

Method: 9056A
Preparation: N/A

Lab Sample ID:	280-88669-3	Analysis Batch:	280-344269	Instrument ID:	WC_IonChrom6
Client Matrix:	Solid	Prep Batch:	N/A	Lab File ID:	11.0000.d
Dilution:	1.0	Leach Batch:	280-344354	Initial Weight/Volume:	5 mL
Analysis Date:	09/29/2016 1803	Units:	mg/Kg	Final Weight/Volume:	5 mL
Prep Date:	N/A				25 uL
Leach Date:	09/29/2016 1422				

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Chloride-Soluble	ND	ND	NC	10	B
Sulfate-Soluble	480	462	3	10	B

Client: TechLaw, Inc. Job Number: 280-88669-1

Method Blank - Batch: 280-344083 **Method: SM 3500 CR D**
Preparation: N/A

Lab Sample ID:	MB 280-344164/3-A	Analysis Batch:	280-344083	Instrument ID:	WC_HSPEC_CR_B_D
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	N/A
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	10 mL
Analysis Date:	09/28/2016 0811	Units:	mg/L	Final Weight/Volume:	10 mL
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Cr (VI)	ND		0.0040	0.020

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 280-344083 **Method: SM 3500 CR D**
Preparation: N/A

LCS Lab Sample ID:	LCS 280-344164/1-A	Analysis Batch:	280-344083	Instrument ID:	WC_HSPEC_CR_B_D
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	N/A
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	10 mL
Analysis Date:	09/28/2016 0811	Units:	mg/L	Final Weight/Volume:	10 mL
Prep Date:	N/A				
Leach Date:	N/A				
LCSD Lab Sample ID:	LCSD 280-344164/2-A	Analysis Batch:	280-344083	Instrument ID:	WC_HSPEC_CR_B_D
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	N/A
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	10 mL
Analysis Date:	09/28/2016 0811	Units:	mg/L	Final Weight/Volume:	10 mL
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	% Rec. LCS	% Rec. LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Cr (VI)	101	102	85 - 115	1	20		

Laboratory Control/
Laboratory Duplicate Data Report - Batch: 280-344083 **Method: SM 3500 CR D**
Preparation: N/A

LCS Lab Sample ID:	LCS 280-344164/1-A	Units:	mg/L	LCSD Lab Sample ID:	LCSD 280-344164/2-A
Client Matrix:	Water			Client Matrix:	Water
Dilution:	1.0			Dilution:	1.0
Analysis Date:	09/28/2016 0811			Analysis Date:	09/28/2016 0811
Prep Date:	N/A			Prep Date:	N/A
Leach Date:	N/A			Leach Date:	N/A

Analyte	LCS Spike Amount	LCSD Spike Amount	LCS Result/Qual	LCSD Result/Qual
Cr (VI)	0.100	0.100	0.101	0.102

Client: TechLaw, Inc. Job Number: 280-88669-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 280-344083

Method: SM 3500 CR D
Preparation: N/A

MS Lab Sample ID:	280-88669-1	Analysis Batch:	280-344083	Instrument ID:	WC_HSPEC_CR_B_D
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	N/A
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	10 mL
Analysis Date:	09/28/2016 0926			Final Weight/Volume:	10 mL
Prep Date:	N/A				
Leach Date:	N/A				

MSD Lab Sample ID:	280-88669-1	Analysis Batch:	280-344083	Instrument ID:	WC_HSPEC_CR_B_D
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	N/A
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	10 mL
Analysis Date:	09/28/2016 0926			Final Weight/Volume:	10 mL
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	% Rec. MS	% Rec. MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Cr (VI)	60	64	85 - 115	5	20	F1	

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 280-344083

Method: SM 3500 CR D
Preparation: N/A

MS Lab Sample ID:	280-88669-1	Units:	mg/L	MSD Lab Sample ID:	280-88669-1
Client Matrix:	Water			Client Matrix:	Water
Dilution:	1.0			Dilution:	1.0
Analysis Date:	09/28/2016 0926			Analysis Date:	09/28/2016 0926
Prep Date:	N/A			Prep Date:	N/A
Leach Date:	N/A			Leach Date:	N/A

Analyte	Sample Result/Qual	MS Spike Amount	MSD Spike Amount	MS Result/Qual	MSD Result/Qual
Cr (VI)	ND	0.100		0.0603 F1	0.0637

Duplicate - Batch: 280-344083

Method: SM 3500 CR D
Preparation: N/A

Lab Sample ID:	280-88669-1	Analysis Batch:	280-344083	Instrument ID:	WC_HSPEC_CR_B_D
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	N/A
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	10 mL
Analysis Date:	09/28/2016 0926	Units:	mg/L	Final Weight/Volume:	10 mL
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Cr (VI)	ND	ND	NC	20	

DATA REPORTING QUALIFIERS

Client: TechLaw, Inc. Job Number: 280-88669-1

Lab Section	Qualifier	Description
General Chemistry		
	B	Compound was found in the blank and sample.
	HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.
	F1	MS and/or MSD Recovery is outside acceptance limits.
	J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Client: TechLaw, Inc. Job Number: 280-88669-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
General Chemistry					
Analysis Batch:280-344083					
LCS 280-344164/1-A	Lab Control Sample	T	Water	SM 3500 CR D	
LCSD 280-344164/2-A	Lab Control Sample Duplicate	T	Water	SM 3500 CR D	
MB 280-344164/3-A	Method Blank	T	Water	SM 3500 CR D	
280-88669-1	CCO2D	T	Water	SM 3500 CR D	
280-88669-1DU	Duplicate	T	Water	SM 3500 CR D	
280-88669-1MS	Matrix Spike	T	Water	SM 3500 CR D	
280-88669-1MSD	Matrix Spike Duplicate	T	Water	SM 3500 CR D	
Analysis Batch:280-344268					
LCS 280-344354/1-A	Lab Control Sample	S	Solid	9056A	
LCSD 280-344354/2-A	Lab Control Sample Duplicate	S	Solid	9056A	
MB 280-344354/3-A	Method Blank	S	Solid	9056A	
280-88669-3	CCO2D	S	Solid	9056A	
280-88669-3DU	Duplicate	S	Solid	9056A	
280-88669-3MS	Matrix Spike	S	Solid	9056A	
280-88669-3MSD	Matrix Spike Duplicate	S	Solid	9056A	
Analysis Batch:280-344269					
LCS 280-344354/1-A	Lab Control Sample	S	Solid	9056A	
LCSD 280-344354/2-A	Lab Control Sample Duplicate	S	Solid	9056A	
MB 280-344354/3-A	Method Blank	S	Solid	9056A	
280-88669-3	CCO2D	S	Solid	9056A	
280-88669-3DU	Duplicate	S	Solid	9056A	
280-88669-3MS	Matrix Spike	S	Solid	9056A	
280-88669-3MSD	Matrix Spike Duplicate	S	Solid	9056A	
Prep Batch: 280-344354					
LCS 280-344354/1-A	Lab Control Sample	S	Solid	DI Leach	
LCSD 280-344354/2-A	Lab Control Sample Duplicate	S	Solid	DI Leach	
MB 280-344354/3-A	Method Blank	S	Solid	DI Leach	
280-88669-3	CCO2D	S	Solid	DI Leach	
280-88669-3DU	Duplicate	S	Solid	DI Leach	
280-88669-3MS	Matrix Spike	S	Solid	DI Leach	
280-88669-3MSD	Matrix Spike Duplicate	S	Solid	DI Leach	
Prep Batch: 280-347014					
LCS 280-347014/1-A	Lab Control Sample	S	Solid	DI Leach	
280-88669-2	CCO2D	S	Solid	DI Leach	
Analysis Batch:280-347052					
LCS 280-347014/1-A	Lab Control Sample	S	Solid	9045D	
280-88669-2	CCO2D	S	Solid	9045D	

Client: TechLaw, Inc.

Job Number: 280-88669-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch

Report Basis
S = Soluble
T = Total

Client: TechLaw, Inc. Job Number: 280-88669-1

Laboratory Chronicle

Lab ID: 280-88669-1 **Client ID: CCO2D**

Sample Date/Time: 09/27/2016 10:57 Received Date/Time: 09/28/2016 06:55

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
A:SM 3500 CR D	280-88669-A-1		280-344083		09/28/2016 09:26	1	TAL DEN	JML

Lab ID: 280-88669-1 **Client ID: CCO2D-MS**

Sample Date/Time: 09/27/2016 10:57 Received Date/Time: 09/28/2016 06:55

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
A:SM 3500 CR D	280-88669-A-1 MS		280-344083		09/28/2016 09:26	1	TAL DEN	JML

Lab ID: 280-88669-1 **Client ID: CCO2D-MSD**

Sample Date/Time: 09/27/2016 10:57 Received Date/Time: 09/28/2016 06:55

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
A:SM 3500 CR D	280-88669-A-1 MSD		280-344083		09/28/2016 09:26	1	TAL DEN	JML

Lab ID: 280-88669-1 DU **Client ID: CCO2D**

Sample Date/Time: 09/27/2016 10:57 Received Date/Time: 09/28/2016 06:55

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
A:SM 3500 CR D	280-88669-A-1 DU		280-344083		09/28/2016 09:26	1	TAL DEN	JML

Lab ID: 280-88669-2 **Client ID: CCO2D**

Sample Date/Time: 09/27/2016 11:30 Received Date/Time: 09/28/2016 06:55

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
A:9045D	280-88669-A-2-A		280-347052		10/18/2016 13:23	1	TAL DEN	IEU

Lab ID: 280-88669-3 **Client ID: CCO2D**

Sample Date/Time: 09/27/2016 11:27 Received Date/Time: 09/28/2016 06:55

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
A:9056A	280-88669-A-3-A		280-344268		09/29/2016 17:45	1	TAL DEN	AFB
A:9056A	280-88669-A-3-A		280-344269		09/29/2016 17:45	1	TAL DEN	AFB

Client: TechLaw, Inc. Job Number: 280-88669-1

Laboratory Chronicle

Lab ID: 280-88669-3 **Client ID: CCO2D-MS**

Sample Date/Time: 09/27/2016 11:27 Received Date/Time: 09/28/2016 06:55

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
A:9056A	280-88669-B-3-A MS		280-344268		09/29/2016 18:20	1	TAL DEN	AFB
A:9056A	280-88669-B-3-A MS		280-344269		09/29/2016 18:20	1	TAL DEN	AFB

Lab ID: 280-88669-3 **Client ID: CCO2D-MSD**

Sample Date/Time: 09/27/2016 11:27 Received Date/Time: 09/28/2016 06:55

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
A:9056A	280-88669-C-3-A MSD		280-344268		09/29/2016 18:38	1	TAL DEN	AFB
A:9056A	280-88669-C-3-A MSD		280-344269		09/29/2016 18:38	1	TAL DEN	AFB

Lab ID: 280-88669-3 DU **Client ID: CCO2D**

Sample Date/Time: 09/27/2016 11:27 Received Date/Time: 09/28/2016 06:55

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
A:9056A	280-88669-A-3-B DU		280-344268		09/29/2016 18:03	1	TAL DEN	AFB
A:9056A	280-88669-A-3-B DU		280-344269		09/29/2016 18:03	1	TAL DEN	AFB

Lab ID: MB **Client ID: N/A**

Sample Date/Time: N/A Received Date/Time: N/A

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
A:9056A	MB 280-344354/3-A		280-344268		09/29/2016 17:27	1	TAL DEN	AFB
A:9056A	MB 280-344354/3-A		280-344269		09/29/2016 17:27	1	TAL DEN	AFB
A:SM 3500 CR D	MB 280-344164/3-A		280-344083		09/28/2016 08:11	1	TAL DEN	JML

Lab ID: LCS **Client ID: N/A**

Sample Date/Time: N/A Received Date/Time: N/A

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
A:9045D	LCS 280-347014/1-A		280-347052		10/18/2016 13:23	1	TAL DEN	IEU
A:9056A	LCS 280-344354/1-A		280-344268		09/29/2016 16:52	1	TAL DEN	AFB
A:9056A	LCS 280-344354/1-A		280-344269		09/29/2016 16:52	1	TAL DEN	AFB
A:SM 3500 CR D	LCS 280-344164/1-A		280-344083		09/28/2016 08:11	1	TAL DEN	JML

Client: TechLaw, Inc. Job Number: 280-88669-1

Laboratory Chronicle

Lab ID: LCSD **Client ID: N/A**

Sample Date/Time: N/A Received Date/Time: N/A

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
A:9056A	LCSD 280-344354/2-A		280-344268		09/29/2016 17:10	1	TAL DEN	AFB
A:9056A	LCSD 280-344354/2-A		280-344269		09/29/2016 17:10	1	TAL DEN	AFB
A:SM 3500 CR D	LCSD 280-344164/2-A		280-344083		09/28/2016 08:11	1	TAL DEN	JML

Lab ID: MRL **Client ID: N/A**

Sample Date/Time: N/A Received Date/Time: N/A

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
A:9056A	MRL 280-344268/3		280-344268		09/29/2016 10:04	1	TAL DEN	AFB
A:9056A	MRL 280-344269/3		280-344269		09/29/2016 10:04	1	TAL DEN	AFB

Lab References:
TAL DEN = TestAmerica Denver

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-88669-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
CR6 ICV int_01127	09/29/16	09/28/16	Di Water, Lot na	100 mL	Cr6 ICV Std_00017	0.1 mL	Cr (VI)	1 mg/L
.Cr6 ICV Std_00017	04/30/21		Hach, Lot A6103		(Purchased Reagent)		Cr (VI)	1000 mg/L
CR6 Int cal_00721	09/29/16	09/28/16	Di Water, Lot na	100 mL	CR6 Cal std_00007	0.1 mL	Cr (VI)	1 mg/L
.CR6 Cal std_00007	04/30/19		ERA, Lot 040416		(Purchased Reagent)		Cr (VI)	1000 mg/L
CR6 spike sou_00738	09/29/16	09/28/16	Di Water, Lot na	100 mL	Cr6 ICV Std_00017	1 mL	Cr (VI)	10 mg/L
.Cr6 ICV Std_00017	04/30/21		Hach, Lot A6103		(Purchased Reagent)		Cr (VI)	1000 mg/L
IC CAL cl/so4_00114	09/07/16	08/31/16	Di Water, Lot na	100 mL	IC CL cal_00045	25 mL	Chloride	250 mg/L
					IC sulfatecal_00042	25 mL	Sulfate	250 mg/L
.IC CL cal_00045	07/30/17		SPEX CertiPrep, Lot 3-170CL-2X		(Purchased Reagent)		Chloride	1000 mg/L
.IC sulfatecal_00042	08/30/17		SPEX CertiPrep, Lot 3-177SO4-2X		(Purchased Reagent)		Sulfate	1000 mg/L
IC CAL cl/so4_00118	09/30/16	09/23/16	Di Water, Lot na	100 mL	IC CL cal_00045	25 mL	Chloride	250 mg/L
					IC sulfatecal_00042	25 mL	Sulfate	250 mg/L
.IC CL cal_00045	07/30/17		SPEX CertiPrep, Lot 3-170CL-2X		(Purchased Reagent)		Chloride	1000 mg/L
.IC sulfatecal_00042	08/30/17		SPEX CertiPrep, Lot 3-177SO4-2X		(Purchased Reagent)		Sulfate	1000 mg/L
IC Cal low_00226	09/07/16	08/31/16	Di Water, Lot NA	100 mL	IC Br cal_00012	5 mL	Bromide	50 mg/L
					IC FL cal_00010	5 mL	Fluoride	50 mg/L
					IC N02 CAL_00037	5 mL	Nitrite as N	50 mg/L
					IC N03 cal_00014	5 mL	Nitrate as N	50 mg/L
					IC P04 cal_00015	5 mL	Orthophosphate as P	50 mg/L
.IC Br cal_00012	12/31/16		Ricca, Lot 1507818		(Purchased Reagent)		Bromide	1000 mg/L
.IC FL cal_00010	09/30/17		Ricca, Lot 4604574		(Purchased Reagent)		Fluoride	1000 mg/L
.IC N02 CAL_00037	12/31/16		RICCA, Lot 1606C23		(Purchased Reagent)		Nitrite as N	1000 ppm
.IC N03 cal_00014	03/31/17		Ricca, Lot 4509B38		(Purchased Reagent)		Nitrate as N	1000 mg/L
.IC P04 cal_00015	01/31/18		RICCA, Lot 4602878		(Purchased Reagent)		Orthophosphate as P	1000 mg/L
IC Cal low_00233	10/05/16	09/28/16	Di Water, Lot NA	100 mL	IC Br cal_00012	5 mL	Bromide	50 mg/L
					IC FL cal_00010	5 mL	Fluoride	50 mg/L
					IC N02 CAL_00037	5 mL	Nitrite as N	50 mg/L
					IC N03 cal_00014	5 mL	Nitrate as N	50 mg/L
							Nitrate as NO3	221.34 mg/L
					IC P04 cal_00015	5 mL	Orthophosphate as P	50 mg/L
					N02asNO2_00043	5 mL	Nitrite as NO2	164.509 mg/L
.IC Br cal_00012	12/31/16		Ricca, Lot 1507818		(Purchased Reagent)		Bromide	1000 mg/L
.IC FL cal_00010	09/30/17		Ricca, Lot 4604574		(Purchased Reagent)		Fluoride	1000 mg/L
.IC N02 CAL_00037	12/31/16		RICCA, Lot 1606C23		(Purchased Reagent)		Nitrite as N	1000 ppm
.IC N03 cal_00014	03/31/17		Ricca, Lot 4509B38		(Purchased Reagent)		Nitrate as N	1000 mg/L
							Nitrate as NO3	4426.8 mg/L
.IC P04 cal_00015	01/31/18		RICCA, Lot 4602878		(Purchased Reagent)		Orthophosphate as P	1000 mg/L
.N02asNO2_00043	12/31/16		RICCA, Lot 1606C23		(Purchased Reagent)		Nitrite as NO2	3290.19 mg/L
IC CL cal_00045	07/30/17		SPEX CertiPrep, Lot 3-170CL-2X		(Purchased Reagent)		Chloride	1000 mg/L
IC CL ICV_00013	07/31/17		ERA, Lot 280615		(Purchased Reagent)		Chloride	1000 mg/L
IC ICV 5_00154	09/08/16	09/01/16	Di Water, Lot na	10 mL	IC NO2 ICV_00010	0.5 mL	Nitrite as N	50 mg/L
					IC NO3 ICV_00010	0.5 mL	Nitrate as N	50 mg/L
.IC NO2 ICV_00010	01/31/17		ERA, Lot 030115		(Purchased Reagent)		Nitrite as N	1000 mg/L
.IC NO3 ICV_00010	11/30/17		ERA, Lot 031115		(Purchased Reagent)		Nitrate as N	1000 mg/L

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-88669-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
IC LCS_00703	09/30/16	09/29/16	Di Water, Lot 27	200 mL	IC Cal low_00233	20 mL	Nitrite as N	5 mg/L
							Nitrate as N	5 mg/L
					IC CL cal_00045	20 mL	Chloride	100 mg/L
					IC sulfatecal_00042	20 mL	Sulfate	100 mg/L
.IC Cal low_00233	10/05/16	09/28/16	Di Water, Lot NA	100 mL	IC N02 CAL_00037	5 mL	Nitrite as N	50 mg/L
					IC N03 cal_00014	5 mL	Nitrate as N	50 mg/L
..IC N02 CAL_00037	12/31/16	RICCA, Lot 1606C23			(Purchased Reagent)		Nitrite as N	1000 ppm
..IC N03 cal_00014	03/31/17	Ricca, Lot 4509B38			(Purchased Reagent)		Nitrate as N	1000 mg/L
.IC CL cal_00045	07/30/17	SPEX CertiPrep, Lot 3-170CL-2X			(Purchased Reagent)		Chloride	1000 mg/L
.IC sulfatecal_00042	08/30/17	SPEX CertiPrep, Lot 3-177SO4-2X			(Purchased Reagent)		Sulfate	1000 mg/L
IC SO4 ICV_00016	10/31/17	ERA, Lot 211015			(Purchased Reagent)		Sulfate	1000 mg/L
IC sulfatecal_00042	08/30/17	SPEX CertiPrep, Lot 3-177SO4-2X			(Purchased Reagent)		Sulfate	1000 mg/L
ICMS/MSD WEEK_00421	10/01/16	09/27/16	Di Water, Lot NA	20 mL	IC SPK 6 ANIO_00017	10 mL	Bromide	499.962 mg/L
							Na	2711.76 mg/L
							Chloride	2499.92 mg/L
							Fluoride	499.957 mg/L
							Nitrate as N	499.995 mg/L
							Nitrate as NO3	2213.27 mg/L
							Orthophosphate as P	500.069 mg/L
							Sulfate	2500.26 mg/L
							Orthophosphorus as PO4	1533.31 mg/L
					IC SPK N02SOL_00009	10 mL	Na	2711.76 mg/L
							Nitrite as N	499.973 mg/L
							Nitrite as NO2	1645.01 mg/L
.IC SPK 6 ANIO_00017	10/02/16	01/19/16	Di Water, Lot NA	1000 mL	IC MS/MSD Br_00003	1.2877 g	Bromide	999.925 mg/L
							Na	1497.86 mg/L
					IC MS/MSD CL_00002	8.2424 g	Chloride	4999.84 mg/L
					IC MS/MSD F_00002	2.21 g	Fluoride	999.914 mg/L
							Na	1497.86 mg/L
					IC MS/MSD N03_00003	6.0679 g	Nitrate as N	999.99 mg/L
							Nitrate as NO3	4426.53 mg/L
					IC MS/MSD P04_00002	4.3937 g	Orthophosphate as P	1000.14 mg/L
					IC MS/MSD S04_00005	9.0704 g	Sulfate	5000.51 mg/L
					ICMS/SD OrP04_00003	4.3937 g	Orthophosphorus as PO4	3066.63 mg/L
..IC MS/MSD Br_00003	09/29/21	FISHER, Lot 110569			(Purchased Reagent)		Bromide	0.77652 g/g
							Na	0.22348 g/g
..IC MS/MSD CL_00002	01/13/21	FISHER, Lot 091363			(Purchased Reagent)		Chloride	0.6066 g/g
..IC MS/MSD F_00002	09/29/21	FISHER, Lot 110901			(Purchased Reagent)		Fluoride	0.45245 g/g
							Na	0.54755 g/g
..IC MS/MSD N03_00003	10/02/16	FISHER, Lot 035600			(Purchased Reagent)		Nitrate as N	0.1648 g/g
							Nitrate as NO3	0.7295 g/g
..IC MS/MSD P04_00002	09/06/22	FISHER, Lot 112841			(Purchased Reagent)		Orthophosphate as P	0.22763 g/g
..IC MS/MSD S04_00005	09/29/20	FISHER, Lot 147276			(Purchased Reagent)		Sulfate	0.5513 g/g
..ICMS/SD OrP04_00003	09/06/22	FISHER, Lot 112841			(Purchased Reagent)		Orthophosphorus as PO4	0.69796 g/g
.IC SPK N02SOL_00009	12/24/16	12/24/15	Di Water, Lot na	500 mL	IC MS/MSD N02_00001	2.4628 g	Na	3925.65 mg/L
							Nitrite as N	999.946 mg/L
					ICMS/SDN02NO2_00001	2.4628 g	Nitrite as NO2	3290.01 mg/L

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-88669-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..IC MS/MSD N02_00001	06/09/17		fisher, Lot 041304		(Purchased Reagent)		Na	0.79699 g/g
							Nitrite as N	0.20301 g/g
..ICMS/SDN02NO2_00001	06/09/17		fisher, Lot 041304		(Purchased Reagent)		Nitrite as NO2	0.667941 g/g
pH 7.0 Buffer_00185	06/30/17		SPEX, Lot 23-17VYX		(Purchased Reagent)		pH adj. to 25 deg C	7 SU
pH 7.0 ICV_00067	06/30/18		Fisher, Lot 164224		(Purchased Reagent)		pH adj. to 25 deg C	7 SU

ERA

A Waters Company

Certificate of Analysis

PRODUCT:	1000 mg/L Hexavalent Chromium
CATALOG NUMBER:	019
LOT NUMBER:	040416
ISSUE DATE:	April 14, 2016
REVISION DATE:	Original
STARTING MATERIAL:	Potassium Dichromate ($K_2Cr_2O_7$)
CERTIFIED CONCENTRATION[1]:	1000 mg/L
UNCERTAINTY[2]:	0.6%
MATRIX:	18 megohm deionized water
DENSITY:	1.0001 ± 0.0008 g/mL at 21.5°C and 758 mm Hg
TRACEABILITY[3]:	101%
NIST/SRM:	SRM 136f Potassium Dichromate
VERIFICATION METHOD:	Spectrophotometry
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 4/2019**. 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

Certificate of Analysis List

For request number 806710

Catalog Number Entered	Lot Number Entered	Related Catalog Number	Related Lot Code	Description
1466442 1000	6103	N/A	N/A	Chromium Reference Standard Solution

Total Enclosures: 1

HACH COMPANY

P.O.Box 389
Loveland, CO 80539
(970) 669-3050

An ISO 9001 Certified Company

Certificate of Analysis

COMMODITY:**Chromium Reference Standard Solution 1000**
COMMODITY NUMBER: **14664-42** MANUFACTURE DATE: **4/12/2016** DATE OF ANALYSIS: **4/12/2016**
LOT NUMBER: **A6103**

TEST	*SPECIFICATIONS*	*RESULTS*
Hexavalent Chromium Concentration	995 to 1005 ppm	1000.0 ppm
pH of the solution	12 to 14	12.4

The expiration date is Apr 2021

The item 1466442 is traceable to NIST standards SRM 136f Potassium Dichromate LOT N/A.

Certified by _____

Scott Als
Analytical Services Chemist

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

Bromide Standard, 1000 ppm Br^-

Lot Number: 1507818 **Product Number:** 1180

Manufacture Date: JUL 08, 2015
Expiration Date: DEC 2016

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
Sodium Bromide	7647-15-6	High Purity

Test	Specification	Result
Appearance	Colorless liquid	Passed
Bromide (Br)	995-1005 ppm	1000 ppm

Specification	Reference
Bromide Solution, Standard (1 mL = 1 mg Br-)	ASTM (D 3869 D)
Standard Bromide Solution, 1000 mg/L	APHA (4110 B)
Bromide Stock Solution (1.00 mL = 1.00 mg Br-)	EPA (SW-846) (9056)
Sodium Bromide Standard Solution, 1000 mg/L	ASTM (D 1246)
Bromide Stock Solution (1.00 mL = 1.00 mg Br?)	ASTM (D 4327)

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)
1180-4	120 mL natural poly	18 months
1180-8	250 mL natural poly	18 months
1180-16	500 mL natural poly	18 months

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

Katie Schnur
Quality Control Manager

This Certificate of Analysis is designed to comply with ISO Guide 31 "Reference Materials -- Contents of Certificates and Labels."

Certificate # L2387 Testing

Reference Materials Producer
Cert #2495.01

SPEXertificate®

Certificate of Reference Material

Chemical Testing
Cert #2495.02

Catalog Number: AS-CL9-2X **Lot No.** 3-170CL-2X

Description: 1000 µg/mL Chloride

Matrix: H_2O

This **Ion Chromatography** Certified Reference Material, CRM, is intended primarily for use as a calibration standard or quality control standard for ion chromatography instrumentation. It can be employed in USEPA, ASTM and other methods relevant to the certified properties listed below.

Certified Value: 1003 µg/mL ±5 µg/mL

Certified Value is Traceable to: 3182*

* - indicates NIST SRM † - indicates SPEX CertiPrep CRM (when NIST SRM is not available) ‡ - prepared gravimetrically

The CRM is prepared gravimetrically using high purity Sodium Chloride, Lot# 07131A. The certified value listed is the average of values obtained by classical wet assay and ion chromatography analysis.

Refer to side 2 for details of measurement uncertainties.

Classical Wet Assay: 1002 µg/mL

Method: Precipitation using Silver Nitrate. Filter, dry and weigh as AgCl.

Instrumental Analysis by Ion Chromatography: 1003 µg/mL

Uncertified Properties

Trace Ionic Impurities in the Actual Solution via IC Analysis:

Element	µg/mL	Element	µg/mL
Br^-	<0.05	NO_3^-	<0.04
F^-	<0.006	$PO4^{-3}$	<0.06
NO_2^-	<0.03	$SO4^{-2}$	<0.05

Balances are calibrated regularly with weight sets traceable to NIST #32856, #32867 and others. This CRM is guaranteed stable and accurate to +/- 0.5% of the certified value. This includes uncertainty components due to preparation, homogeneity by the most precise method, and short-term and long-term stability. This guarantee is valid for a period of one year from the date of certification only when the material is unopened and stored under ambient laboratory conditions.

Date of Certification: JUL - - 2016 Certifying Officer:

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ERA

A Waters Company

Certificate of Analysis

PRODUCT:	1000 mg/L Chloride
CATALOG NUMBER:	047 -125 mL; 988 - 500 mL
LOT NUMBER:	280615
ISSUE DATE:	July 28, 2015
REVISION DATE:	Original
STARTING MATERIAL:	Sodium Chloride (NaCl)
CERTIFIED CONCENTRATION[1]:	1000 mg/L
UNCERTAINTY[2]:	0.6%
MATRIX:	18 megohm deionized water
DENSITY:	0.9988 ± 0.0008 g/mL at 19.4°C and 745 mm Hg
TRACEABILITY[3]:	99.2%
NIST/SRM:	3182 Chloride
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 7/2017**. 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: Tom Widera

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

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Certificate of Analysis

Fluoride Standard, 1000 ppm F^-

Lot Number: 4604574 **Product Number:** 3173

Manufacture Date: APR 04, 2016
Expiration Date: SEP 2017

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.
The concentration is confirmed by Fluoride ISE and is certified traceable to NIST SRM 2203.

Name	CAS#	Grade
Water	7732-18-5	ACS/ASTM/USP/EP
Sodium Fluoride	7681-49-4	High Purity

Test	Specification	Result
Appearance	Colorless liquid	Passed
Fluoride (F)	995-1005 ppm	1000 ppm

Specification	Reference
Fluoride Solution, Stock (1.00 mL = 1.00 mg F)	ASTM (D 5542)
Fluoride Stock Solution (1.00 mL = 1.00 mg F-)	EPA (SW-846) (9056)
Fluoride Calibration Stock Solution (1,000 mg/L F-)	EPA (SW-846) (9214)
Stock Solution, 1.0 mL = 1.0 mg F	EPA (340.3)
Fluoride Solution, Stock (1.00 mL = 1.00 mg F)	ASTM (D 5996)
Fluoride Stock Solution (1.00 mL = 1.00 mg F?)	ASTM (D 4327)
Fluoride Stock Standard Solution (1 mg of F in 1 mL)	ACS (N/A)

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)
3173-4	120 mL natural poly	18 months
3173-32	1 L natural poly	18 months
3173-8	250 mL natural poly	18 months
3173-16	500 mL natural poly	18 months

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

Katie Schnur
Quality Control Manager

This Certificate of Analysis is designed to comply with ISO Guide 31 "Reference Materials -- Contents of Certificates and Labels."

Fisher Scientific
1 Reagent Lane Fairlawn, NJ
07410 201.796.7100
tel 201.796.1329 fax

Certificate of Analysis

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

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Catalog Number	S255	Mfg. Date	3/3/2011
Lot Number	110569		
Description	SODIUM BROMIDE, A.C.S.		
Country of Origin	China	Recommended Retest Date	Mar-2016
Chemical Origin	Inorganic-non animal		

Result name	Units	Specifications	Test Value
APPEARANCE		REPORT	FINE WHITE GRANULATING POWDER
ASSAY	%	>= 99	99.5
BARIUM (Ba)	%	<= 0.002	<0.0020
BROMATE	%	<= 0.001	<0.0010
CALCIUM	%	<= 0.002	<0.0020
CHLORIDE	%	<= 0.2	0.09
HEAVY METALS (as Pb)	ppm	<= 5	<5.0
IDENTIFICATION	PASS/FAIL	= PASS TEST	PASS TEST
INSOLUBLE MATTER	%	<= 0.005	<0.005
IRON (Fe)	ppm	<= 5	<5.0
MAGNESIUM	%	<= 0.001	<0.0010
PH 5% SOLN @ 25 DEG C		Inclusive Between 5.0 8.8	7.1
POTASSIUM (K)	%	<= 0.1	<0.10
SULFATE (SO4)	%	<= 0.002	<0.0020

Lab Manager Fairlawn

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

Fisher Scientific

1 Reagent Lane
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Catalog Number	**S271**	**Mfg. Date**	**5/20/2009**
Lot Number	091363		
Description	**SODIUM CHLORIDE, CERTIFIED A.C.S.**		
Country of Origin	**United States**		
Chemical Origin	**Inorganic-non animal**		
BSE/TSE Comment	No animal products are used as starting raw material ingredients, or used in processing, including lubricants, processing aids, or any other material that might migrate to the finished product.		

Result name	Units	Specifications	Test Value
APPEARANCE		REPORT	FINE WHITE CRYSTALS
ASSAY	%	>= 99.0	99.7
BARIUM (Ba)	PASS/FAIL	= PASS TEST	PASS TEST
BROMIDE	%	<= 0.01	<0.010
CALCIUM	%	<= 0.002	0.0004
CHLORATE & NITRATE	%	<= 0.003	0.0003
HEAVY METALS (as Pb)	ppm	<= 5	<5.0
IDENTIFICATION	PASS/FAIL	= PASS TEST	PASS TEST
INSOLUBLE MATTER	%	<= 0.005	0.001
IODIDE	%	<= 0.002	<0.0020
IRON (Fe)	ppm	<= 2	<2.0
MAGNESIUM	%	<= 0.001	0.0005
PH 5% SOLN @ 25 DEG C		Inclusive Between 5.0 9.0	5.6
PHOSPHATE (PO4)	ppm	<= 5	<5.0
POTASSIUM (K)	%	<= 0.005	0.003
SULFATE (SO4)	%	<= 0.004	<0.0040

Residual Solvents	No Class 1, Class 2, or Class 3 solvents are used in the manufacturing, processing, or subsequent handling of this product.

Lab Manager Fairlawn

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Fisher Scientific
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Catalog Number	S299	Mfg. Date	3/18/2011
Lot Number	110901		
Description	SODIUM FLUORIDE, A.C.S.		
Country of Origin	India	Recommended Retest Date	Mar-2016

Result name	Units	Specifications	Test Value
APPEARANCE		REPORT	FINE WHITE POWDER
ASSAY	%	>= 99	99.2
CHLORIDE	%	<= 0.005	<0.005
HEAVY METALS (as Pb)	%	<= 0.003	<0.0030
IDENTIFICATION	PASS/FAIL	= PASS TEST	PASS TEST
INSOLUBLE MATTER	%	<= 0.02	0.010
IRON (Fe)	%	<= 0.003	<0.0030
LOSS ON DRYING @ 105 C	%	<= 0.3	0.30
POTASSIUM (K)	%	<= 0.02	0.003
SODIUM FLUOSILICATE	%	<= 0.1	0.01
SULFATE (SO4)	%	<= 0.03	<0.030
SULFITE	%	<= 0.005	0.003
TITRATABLE ACID	mEq/g	<= 0.03	0.020
TITRATABLE BASE	mEq/g	<= 0.01	0.001

Lab Manager Fairlawn

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Catalog Number	**S347**	**Mfg. Date**	4/13/2004 0:0:0
Lot Number	**041304**	**Sample Id**	S347..041304.100
Product Description	SODIUM NITRITE, A.C.S.		

Result Name	Units	Specifications	Test Value
INSOLUBLE MATTER	%	0.01 Maximum	0.0010
IDENTIFICATION	PASS/FAIL	Pass test	PASS
HEAVY METALS(AS Pb)	%	0.001 Maximum	0.0004
CHLORIDE	%	0.005 Maximum	0.0040
SULFATE (SO4)	%	0.01 Maximum	0.0060
POTASSIUM	%	0.005 Maximum	0.00040
ASSAY	%	97 Minimum	99.7000
APPEARANCE	REPORT	Yellow-white crystals	YELLOWISH WHITE FINE CRYSTALS
IRON	%	0.001 Maximum	0.00020
CALCIUM IN %	%	0.01 Maximum	0.0002

CERTIFIED BY

Edgar E Hess — Lab Manager Fair Lawn

Joel Boland — Lab Manager BPF

Note: The data listed is valid for all package sizes of this lot of product, expressed as an extension of the catalog number listed above. If there are any questions with this certificate, please call Chemical Services at [illegible]

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Catalog Number	**S343**	**Mfg. Date**	10/16/2003 0:0:0
Lot Number	**035600**	**Sample Id**	S343..035600.B1.
Product Description	SODIUM NITRATE, A.C.S.		

Result Name	Units	Specifications	Test Value
NITRITE	%	0.001 Maximum	<0.00010
MAGNESIUM IN %	%	0.002 Maximum	0.0002
IRON (Fe)	PPM	3 Maximum	0.600
IODATE (IO3) IN PPM	PPM	5 Maximum	<0.5000
INSOLUBLE MATTER	%	0.005 Maximum	0.0010
IDENTIFICATION	PASS/FAIL	Pass test	PASS
PHOSPHATE (PO4)	PPM	5 Maximum	4.000
CHLORIDE	%	0.001 Maximum	0.0010
CALCIUM IN %	%	0.005 Maximum	0.0008
ASSAY	%	99 Minimum	100.1000
APPEARANCE	REPORT	Colorless crystals	WHITE FINE CRYSTALS
SULFATE (SO4)	%	0.003 Maximum	0.0030
PH 5% SOLN @ 25DEG C		5.5 to 8.3	5.50
HEAVY METALS(AS Pb)	PPM	5 Maximum	1.70

CERTIFIED BY

Edgar E Hess
Lab Manager Fair Lawn

Joel Boland
Lab Manager BPF

Note: The data listed is valid for all package sizes of this lot of product, expressed as an extension of the catalog number listed above. If there are any questions with this certificate, please call Chemical Services at [illegible]

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Certificate of Analysis

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

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Catalog Number	**P386**	**Mfg. Date**	**9/19/2011**
Lot Number	**112841**		
Description	**POTASSIUM PHOSPHATE MONOBASIC NF/FCC/EP/BP**		
Country of Origin	**United States**		
Chemical Origin	**Inorganic**		
BSE/TSE Comment	No animal products are used as starting raw material ingredients, or used in processing, including lubricants, processing aids, or any other material that might migrate to the finished product.		

FCC Grade

Result name	Units	Specifications	Test Value
APPEARANCE		REPORT	White crystals
ARSENIC	MG/KG	<= 3	<3
ASSAY	%	>= 98.0	99.7
FLUORIDES	MG/KG	<= 10	<5
IDENTIFICATION (ALL LISTED)	PASS/FAIL	= PASS TEST	PASS TEST
INSOLUBLE SUBSTANCES	%	<= 0.2	<0.20
LEAD (Pb)	MG/KG	<= 2	<2.0
LOSS ON DRYING PER FCC	%	<= 1	<1.0

NF Grade

Result name	Units	Specifications	Test Value
APPEARANCE		REPORT	White crystals
ARSENIC	ppm	<= 3	<3
ASSAY	%	Inclusive Between 98.0 100.5	99.7
ENDOTOXINS	EU/Mg	<= 1	<0.02000
FLUORIDES	%	<= 0.001	<0.0005
HEAVY METALS (as PB)	%	<= 0.002	<0.002
IDENTIFICATION (ALL LISTED)	PASS/FAIL	= PASS TEST	PASS TEST
INSOLUBLE SUBSTANCES	%	<= 0.2	<0.20
LEAD	ppm	<= 5	<5
LOSS ON DRYING	%	<= 1.0	<1.0
RESIDUAL SOLVENTS	Meets Requirements	= MEETS REQUIREMENTS	MEETS REQUIREMENTS

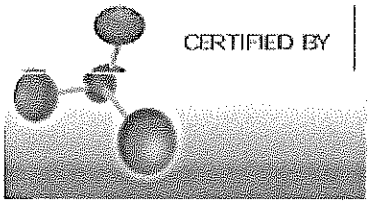
EP Grade

Result name	Units	Specifications	Test Value
APPEARANCE		REPORT	White crystals
APPEARANCE OF SOLN.	PASS/FAIL	= CLEAR AND COLORLESS	CLEAR AND COLORLESS

ARSENIC	ppm	<= 2	<2
ASSAY	%	Inclusive Between 98.0 100.5	99.8
BACTERIAL ENDOTOXINS	EU/Mg	<= 1	<0.02000
CHLORIDES	ppm	<= 200	<200
HEAVY METALS	ppm	<= 10	<10
IDENTIFICATION (ALL LISTED)	PASS/FAIL	= PASS TEST	PASS TEST
IRON	ppm	<= 10	<10
LOSS ON DRYING PER EP	%	<= 2.0	<1.0
PH (5 % SOLUTION)		Inclusive Between 4.2 4.5	4.3
REDUCING SUBSTANCES	PASS/FAIL	= PASS TEST	PASS TEST
RESIDUAL SOLVENTS	Meets Requirements	= MEETS REQUIREMENTS	MEETS REQUIREMENTS
SODIUM	%	<= 0.1	0.03
SULFATES	ppm	<= 300	<300

British Pharmacopeia Grade			
Result name	Units	Specifications	Test Value
APPEARANCE		REPORT	White crystals
APPEARANCE OF SOLN.	PASS/FAIL	= CLEAR AND COLORLESS	CLEAR AND COLORLESS
ARSENIC	ppm	<= 2	<2
ASSAY	%	Inclusive Between 98.0 100.5	99.8
CHLORIDES	ppm	<= 200	<200
HEAVY METALS	ppm	<= 10	<10
IDENTIFICATION (ALL LISTED)	PASS/FAIL	= PASS TEST	PASS TEST
IRON	ppm	<= 10	<10
LOSS ON DRYING PER BP	%	<= 2.0	<1.0
PH (5% SOLUTION)		Inclusive Between 4.2 4.5	4.3
REDUCING SUBSTANCES	PASS/FAIL	= PASS TEST	PASS TEST
RESIDUAL SOLVENTS	Meets Requirements	= MEETS REQUIREMENTS	MEETS REQUIREMENTS
SODIUM	%	<= 0.1	0.03
SULFATES	ppm	<= 300	<300

Residual Solvents	No Class 1, Class 2, or Class 3 solvents, or any other solvents, are used in the manufacturing, handling, or storage of this storage, or in any cleaning process.



CERTIFIED BY

Lab Manager Fair Lawn

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

Fisher Scientific

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201.796.1329 fax

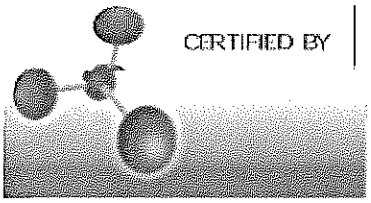
Certificate of Analysis

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

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

Catalog Number	**P304**	**Quality Test / Release Date 3/2/2015**	
Lot Number	**147276**		
Description	**POTASSIUM SULFATE, CRYSTAL, CERTIFIED, A.C.S.**		
Country of Origin	**India**	*** Suggested Retest Date**	**Feb-2020**
Chemical Origin	**Inorganic-non animal**		
BSE/TSE Comment	This product is not manufactured from, or with, any type of animal product, nor any derivative of an animal product. As such, this product should not be considered a vector for BSE or TSE.		

Result name	Units	Specifications	Test Value
APPEARANCE		REPORT	FINE WHITE CRYSTALS
ASSAY	%	>= 99	99.4
CALCIUM	%	<= 0.01	<0.010
CHLORIDE	%	<= 0.001	<0.0010
HEAVY METALS (as Pb)	ppm	<= 5	<5.0
IDENTIFICATION	PASS/FAIL	= PASS TEST	PASS TEST
INSOLUBLE MATTER	%	<= 0.01	<0.010
IRON (Fe)	ppm	<= 5	<5.0
MAGNESIUM	%	<= 0.005	<0.0050
NITROGEN COMPOUNDS	ppm	<= 5	<5
PH 5% SOLUTION @ 25 DEG C		Inclusive Between 5.5 - 8.5	5.5
SODIUM (Na)	%	<= 0.02	<0.020



CERTIFIED BY

Lab Manager Fair Lawn

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

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Certificate of Analysis

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

Lot Number: 1606C23 **Product Number:** R5444900

Manufacture Date: JUN 07, 2016
Expiration Date: DEC 2016

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	1003 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)

Katie Schnur
Quality Control Manager

This Certificate of Analysis is designed to comply with ISO Guide 31 "Reference Materials -- Contents of Certificates and Labels."

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Certificate of Analysis

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

Lot Number: 4509B38 **Product Number:** 5459

Manufacture Date: SEP 28, 2015
Expiration Date: MAR 2017

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)
5459-4	120 mL natural poly	18 months
5459-32	1 L natural poly	18 months
5459-16	500 mL natural poly	18 months

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

Katie Schnur
Quality Control Manager

This Certificate of Analysis is designed to comply with ISO Guide 31 "Reference Materials -- Contents of Certificates and Labels."

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:	030115
ISSUE DATE:	January 12, 2015
REVISION DATE:	Original
STARTING MATERIAL:	Sodium Nitrite ($NaNO_2$)
CERTIFIED CONCENTRATION[1]:	1000 mg/L
UNCERTAINTY[2]:	0.6%
MATRIX:	18 megohm deionized water
DENSITY:	1.0008 ± 0.0008 g/mL at 19.5°C and 768 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 1/2017**. 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: Tom Widera

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

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ERA

A Waters Company

Certificate of Analysis

PRODUCT:	1000 mg/L Nitrate as N (NO_3-N)
CATALOG NUMBER:	052 -125 mL; 991 - 500 mL
LOT NUMBER:	031115
ISSUE DATE:	November 18, 2015
REVISION DATE:	Original
STARTING MATERIAL:	Potassium Nitrate (KNO_3)
CERTIFIED CONCENTRATION[1]:	1000 mg/L
UNCERTAINTY[2]:	0.6%
MATRIX:	18 megohm deionized water
DENSITY:	1.0006 ± 0.0008 g/mL at 23.0°C and 757 mm Hg
TRACEABILITY[3]:	97.4%
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 11/2017**. 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

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REFERENCE MATERIAL PRODUCER
CERTIFICATE NO. 1539.03

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Certificate of Analysis

Phosphorus AA Standard, 1000 ppm P in H_2O

Lot Number: 4602878 **Product Number:** AP1KW

Manufacture Date: FEB 10, 2016
Expiration Date: JAN 2018

This is a single element solution that was prepared volumetrically to contain the certified value reported. The uncertainty associated with the certified 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-100	100 mL natural LDPE	24 months
AP1KW-500	500 mL natural poly	24 months

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

Katie Schnur
Quality Control Manager

This Certificate of Analysis is designed to comply with ISO Guide 31 "Reference Materials -- Contents of Certificates and Labels."

ERA

A Waters Company

Certificate of Analysis

PRODUCT:	1000 mg/L Sulfate (SO_4)
CATALOG NUMBER:	062 -125 mL; 995 - 500 mL
LOT NUMBER:	211015
ISSUE DATE:	November 2, 2015
REVISION DATE:	Original
STARTING MATERIAL:	Potassium Sulfate (K_2SO_4)
CERTIFIED CONCENTRATION[1]:	1000 mg/L
UNCERTAINTY[2]:	0.6%
MATRIX:	18 megohm deionized water
DENSITY:	0.9983 ± 0.0008 g/mL at 21.5°C and 758 mm Hg
TRACEABILITY[3]:	100%
NIST/SRM:	3181 Sulfate
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 10/2017**. 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

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REFERENCE MATERIAL PRODUCER
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CHEMICAL TESTING LABORATORY
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Reference Materials Producer
Cert #2495.01

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Certificate of Reference Material

Chemical Testing
Cert #2495.02

Catalog Number: AS-SO49-2X **Lot No.** 3-177SO4-2X

Description: 1000 µg/mL Sulfate

Matrix: H_2O

This **Ion Chromatography** Certified Reference Material, CRM, is intended primarily for use as a calibration standard or quality control standard for ion chromatography instrumentation. It can be employed in USEPA, ASTM and other methods relevant to the certified properties listed below.

Certified Value: 999 µg/mL ±5 µg/mL

Certified Value is Traceable to: 3181*

* - indicates NIST SRM † - indicates SPEX CertiPrep CRM (when NIST SRM is not available) ‡ - prepared gravimetrically

The CRM is prepared gravimetrically using high purity Potassium Sulfate, Lot# 0713D. The certified value listed is the average of values obtained by classical wet assay and ion chromatography analysis.

Refer to side 2 for details of measurement uncertainties.

Classical Wet Assay: 997 µg/mL

Method: Precipitation using Barium Chloride. Filter, ignite, and weigh as BaSO4.

Instrumental Analysis by Ion Chromatography: 1000 µg/mL

Uncertified Properties

Trace Ionic Impurities in the Actual Solution via IC Analysis:

Element	µg/mL	Element	µg/mL
Br^-	<0.04	NO_2^-	<0.03
Cl^-	<0.5	NO_3^-	<0.03
F^-	<0.006	$PO4^{-3}$	<0.06

Balances are calibrated regularly with weight sets traceable to NIST #32856, #32867 and others. This CRM is guaranteed stable and accurate to +/- 0.5% of the certified value. This includes uncertainty components due to preparation, homogeneity by the most precise method, and short-term and long-term stability. This guarantee is valid for a period of one year from the date of certification only when the material is unopened and stored under ambient laboratory conditions.

Date of Certification: AUG - - 2016 Certifying Officer:

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Fisher Scientific

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

Certificate of Analysis

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

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

Catalog Number	**P386**	**Mfg. Date**	**9/19/2011**
Lot Number	**112841**		
Description	**POTASSIUM PHOSPHATE MONOBASIC NF/FCC/EP/BP**		
Country of Origin	**United States**		
Chemical Origin	**Inorganic**		
BSE/TSE Comment	No animal products are used as starting raw material ingredients, or used in processing, including lubricants, processing aids, or any other material that might migrate to the finished product.		

FCC Grade

Result name	Units	Specifications	Test Value
APPEARANCE		REPORT	White crystals
ARSENIC	MG/KG	<= 3	<3
ASSAY	%	>= 98.0	99.7
FLUORIDES	MG/KG	<= 10	<5
IDENTIFICATION (ALL LISTED)	PASS/FAIL	= PASS TEST	PASS TEST
INSOLUBLE SUBSTANCES	%	<= 0.2	<0.20
LEAD (Pb)	MG/KG	<= 2	<2.0
LOSS ON DRYING PER FCC	%	<= 1	<1.0

NF Grade

Result name	Units	Specifications	Test Value
APPEARANCE		REPORT	White crystals
ARSENIC	ppm	<= 3	<3
ASSAY	%	Inclusive Between 98.0 100.5	99.7
ENDOTOXINS	EU/Mg	<= 1	<0.02000
FLUORIDES	%	<= 0.001	<0.0005
HEAVY METALS (as PB)	%	<= 0.002	<0.002
IDENTIFICATION (ALL LISTED)	PASS/FAIL	= PASS TEST	PASS TEST
INSOLUBLE SUBSTANCES	%	<= 0.2	<0.20
LEAD	ppm	<= 5	<5
LOSS ON DRYING	%	<= 1.0	<1.0
RESIDUAL SOLVENTS	Meets Requirements	= MEETS REQUIREMENTS	MEETS REQUIREMENTS

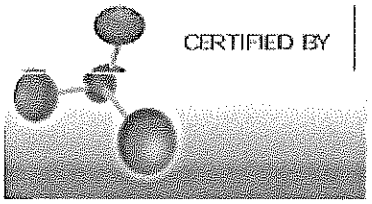
EP Grade

Result name	Units	Specifications	Test Value
APPEARANCE		REPORT	White crystals
APPEARANCE OF SOLN.	PASS/FAIL	= CLEAR AND COLORLESS	CLEAR AND COLORLESS

ARSENIC	ppm	<= 2	<2
ASSAY	%	Inclusive Between 98.0 100.5	99.8
BACTERIAL ENDOTOXINS	EU/Mg	<= 1	<0.02000
CHLORIDES	ppm	<= 200	<200
HEAVY METALS	ppm	<= 10	<10
IDENTIFICATION (ALL LISTED)	PASS/FAIL	= PASS TEST	PASS TEST
IRON	ppm	<= 10	<10
LOSS ON DRYING PER EP	%	<= 2.0	<1.0
PH (5 % SOLUTION)		Inclusive Between 4.2 4.5	4.3
REDUCING SUBSTANCES	PASS/FAIL	= PASS TEST	PASS TEST
RESIDUAL SOLVENTS	Meets Requirements	= MEETS REQUIREMENTS	MEETS REQUIREMENTS
SODIUM	%	<= 0.1	0.03
SULFATES	ppm	<= 300	<300

British Pharmacopeia Grade			
Result name	**Units**	**Specifications**	**Test Value**
APPEARANCE		REPORT	White crystals
APPEARANCE OF SOLN.	PASS/FAIL	= CLEAR AND COLORLESS	CLEAR AND COLORLESS
ARSENIC	ppm	<= 2	<2
ASSAY	%	Inclusive Between 98.0 100.5	99.8
CHLORIDES	ppm	<= 200	<200
HEAVY METALS	ppm	<= 10	<10
IDENTIFICATION (ALL LISTED)	PASS/FAIL	= PASS TEST	PASS TEST
IRON	ppm	<= 10	<10
LOSS ON DRYING PER BP	%	<= 2.0	<1.0
PH (5% SOLUTION)		Inclusive Between 4.2 4.5	4.3
REDUCING SUBSTANCES	PASS/FAIL	= PASS TEST	PASS TEST
RESIDUAL SOLVENTS	Meets Requirements	= MEETS REQUIREMENTS	MEETS REQUIREMENTS
SODIUM	%	<= 0.1	0.03
SULFATES	ppm	<= 300	<300

Residual Solvents	No Class 1, Class 2, or Class 3 solvents, or any other solvents, are used in the manufacturing, handling, or storage of this storage, or in any cleaning process.



CERTIFIED BY

Lab Manager Fair Lawn

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

Fisher Scientific

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Certificate of Analysis

Fisher Scientific's Quality System has been found to conform to Quality Management System Standard ISO9001:2000 standard by DNV Certificate number CERT-08052-2006-AQ-HOU-ANAB

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

Catalog Number	**S347**	**Mfg. Date**	4/13/2004 0:0:0
Lot Number	**041304**	**Sample Id**	S347..041304.100
Product Description	SODIUM NITRITE, A.C.S.		

Result Name	Units	Specifications	Test Value
INSOLUBLE MATTER	%	0.01 Maximum	0.0010
IDENTIFICATION	PASS/FAIL	Pass test	PASS
HEAVY METALS(AS Pb)	%	0.001 Maximum	0.0004
CHLORIDE	%	0.005 Maximum	0.0040
SULFATE (SO4)	%	0.01 Maximum	0.0060
POTASSIUM	%	0.005 Maximum	0.00040
ASSAY	%	97 Minimum	99.7000
APPEARANCE	REPORT	Yellow-white crystals	YELLOWISH WHITE FINE CRYSTALS
IRON	%	0.001 Maximum	0.00020
CALCIUM IN %	%	0.01 Maximum	0.0002

CERTIFIED BY

Edgar E Hess — Lab Manager Fair Lawn

Joel Boland — Lab Manager BPF

Note: The data listed is valid for all package sizes of this lot of product, expressed as an extension of the catalog number listed above. If there are any questions with this certificate, please call Chemical Services at [illegible]

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Certificate of Analysis

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

Lot Number: 1606C23 **Product Number:** R5444900

Manufacture Date: JUN 07, 2016
Expiration Date: DEC 2016

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	1003 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)

Katie Schnur
Quality Control Manager

This Certificate of Analysis is designed to comply with ISO Guide 31 "Reference Materials -- Contents of Certificates and Labels."

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Reference Materials Producer
Cert# 2495.01

ilac-MRA ACCREDITED
Chemical Testing
Cert#2495.02

SPEXertificate ®

Certificate of Reference Material

Catalog Number: PH-BUFF7-500 **Lot No.:** 23-17VYX
Description: Buffer Standard
Matrix: H2O

This certified material is intended primarily for use as a calibration standard or quality control standard for instrumentation employed in USEPA, ASTM and other methods relevant to the certified properties listed below.

Certified Value:

Analyte	Certified (pH units at 25°C)	Uncertainty (pH units)	NIST SRM
pH	7.02	± 0.03	186g,187e

Refer to side 2 for certification details

Balances are calibrated regularly with weight sets traceable to NIST 32856, 32867. This CRM is guaranteed stable to ± 0.03 pH units on the certified value for a period of one year from the date of certification. This includes components of uncertainty associated with measurement, homogeneity, short and long term stability. This guarantee is valid only when the material is unopened and stored under laboratory conditions.

Date of Certification: JUN - - 2016 Certifying Officer: [signature]

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Certificate of Analysis

Fisher Scientific's Quality System has been found to conform to Quality Management System Standard ISO9001:2008 standard by SAI Global Certificate Number CERT - 0090918

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

Catalog Number	**SB107**	**Quality Test / Release Date**	**6/29/2016**
Lot Number	**164224**	**Expiration Date**	**Jun/18**
Description	**BUFFER SOLUTION, CERTIFIED, PH 7.00**		
Country of Origin	**United States**		
Chemical Origin	**Organic - non animal**		
BSE/TSE Comment	No animal products are used as starting raw material ingredients, or used in processing, including lubricants, processing aids, or any other material that might migrate to the finished product.		

Result name	Units	Specifications	Test Value
APPEARANCE		REPORT	Clear, yellow liquid
IDENTIFICATION	PASS/FAIL	= PASS TEST	PASS TEST
NIST STD : pH 9.180	BORAX	= LOT 187E	LOT 187E
NIST STD USED: pH 7a	POT DIHYDRO PHOS	= LOT 186IG	LOT 186IG
NIST STD USED: pH 7b	DISOD HYDRO PHOS	= LOT 186IIG	LOT 186IIG
OPTICAL ABSORBANCE	PASS/FAIL	= PASS TEST	PASS TEST
PH AT 25 DEGREES C		Inclusive Between 6.99 - 7.01	7.01
TRACEABLE TO NIST	PASS/FAIL	= PASS TEST	PASS TEST

Quality Control Manager Fair Lawn

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

Certification Summary

Client: TechLaw, Inc.
Project/Site: Gold King Mine, CO - A85M

TestAmerica Job ID: 280-88669-1

Laboratory	Authority	Program	EPA Region	Certification ID
TestAmerica Denver	A2LA	DoD ELAP		2907.01
TestAmerica Denver	A2LA	ISO/IEC 17025		2907.01
TestAmerica Denver	Alaska (UST)	State Program	10	UST-30
TestAmerica Denver	Arizona	State Program	9	AZ0713
TestAmerica Denver	Arkansas DEQ	State Program	6	88-0687
TestAmerica Denver	California	State Program	9	2513
TestAmerica Denver	Connecticut	State Program	1	PH-0686
TestAmerica Denver	Florida	NELAP	4	E87667
TestAmerica Denver	Georgia	State Program	4	N/A
TestAmerica Denver	Illinois	NELAP	5	200017
TestAmerica Denver	Iowa	State Program	7	370
TestAmerica Denver	Kansas	NELAP	7	E-10166
TestAmerica Denver	Louisiana	NELAP	6	02096
TestAmerica Denver	Maine	State Program	1	CO0002
TestAmerica Denver	Minnesota	NELAP	5	8-999-405
TestAmerica Denver	Nevada	State Program	9	CO0026
TestAmerica Denver	New Hampshire	NELAP	1	205310
TestAmerica Denver	New Jersey	NELAP	2	CO004
TestAmerica Denver	New York	NELAP	2	11964
TestAmerica Denver	North Carolina (WW/SW)	State Program	4	358
TestAmerica Denver	North Dakota	State Program	8	R-034
TestAmerica Denver	Oklahoma	State Program	6	8614
TestAmerica Denver	Oregon	NELAP	10	4025
TestAmerica Denver	Pennsylvania	NELAP	3	68-00664
TestAmerica Denver	South Carolina	State Program	4	72002001
TestAmerica Denver	Texas	NELAP	6	T104704183-15-11
TestAmerica Denver	USDA	Federal		P330-13-00369
TestAmerica Denver	Utah	NELAP	8	CO00026
TestAmerica Denver	Virginia	NELAP	3	460232
TestAmerica Denver	Washington	State Program	10	C583
TestAmerica Denver	West Virginia DEP	State Program	3	354
TestAmerica Denver	Wisconsin	State Program	5	999615430
TestAmerica Denver	Wyoming (UST)	A2LA	8	2907.01

Accreditation may not be offered or required for all methods and analytes reported in this package. Please contact your project manager for the laboratory's current list of certified methods and analytes.

GENERAL CHEMISTRY

COVER PAGE
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job Number: 280-88669-1

SDG No.:

Project: Gold King Mine, CO - A85M

Client Sample ID	Lab Sample ID
CCO2D	280-88669-1
CCO2D	280-88669-2
CCO2D	280-88669-3

Comments:

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: CCO2D
Lab Sample ID: 280-88669-1
Lab Name: TestAmerica Denver
Job No.: 280-88669-1
SDG ID.:
Matrix: Water
Date Sampled: 09/27/2016 10:57
Reporting Basis: WET
Date Received: 09/28/2016 06:55

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
18540-29-9	Cr (VI)	ND	0.020	0.0040	mg/L		F1	1	SM 3500 CR D

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY - SOLUBLE

Client Sample ID: CCO2D
Lab Sample ID: 280-88669-2
Lab Name: TestAmerica Denver
Job No.: 280-88669-1
SDG ID.:
Matrix: Solid
Date Sampled: 09/27/2016 11:30
Reporting Basis: WET
Date Received: 09/28/2016 06:55

CAS No.	Analyte	Result	RL		Units	C	Q	DIL	Method
	pH adj. to 25 deg C	3.9	0.1		SU		HF	1	9045D
	Temperature	21.5	1.0		Degrees C		HF	1	9045D

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY - SOLUBLE

Client Sample ID: CCO2D
Lab Sample ID: 280-88669-3
Lab Name: TestAmerica Denver
Job No.: 280-88669-1
SDG ID.:
Matrix: Solid
Date Sampled: 09/27/2016 11:27
Reporting Basis: WET
Date Received: 09/28/2016 06:55

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
16887-00-6	Chloride	ND	30	2.0	mg/Kg		B	1	9056A
14797-55-8	Nitrate as N	ND	4.9	0.31	mg/Kg			1	9056A
14797-65-0	Nitrite as N	ND	4.9	0.33	mg/Kg			1	9056A
14808-79-8	Sulfate	480	49	1.7	mg/Kg		F1 B	1	9056A

2-IN
CALIBRATION QUALITY CONTROL
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job No.: 280-88669-1

SDG No.:

Analyst: JML Batch Start Date: 09/28/2016

Reporting Units: mg/L Analytical Batch No.: 344083

Sample Number	QC Type	Time	Analyte	Result	Spike Amount	(%) Recovery	Limits	Qual	Reagent
6	ICV	08:11	Cr (VI)	0.0504	0.0500	101	90-110		CR6 ICV int_01127
7	ICB	08:11	Cr (VI)	ND					
17	CCV	08:11	Cr (VI)	0.0986	0.100	99	90-110		CR6 ICV int_01127
18	CCB	08:11	Cr (VI)	ND					
23	CCV	09:26	Cr (VI)	0.0970	0.100	97	90-110		CR6 ICV int_01127
24	CCB	09:32	Cr (VI)	ND					

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.: 280-88669-1

SDG No.:

Analyst: IEU Batch Start Date: 10/18/2016

Reporting Units: Degrees C Analytical Batch No.: 347052

Sample Number	QC Type	Time	Analyte	Result	Spike Amount	(%) Recovery	Limits	Qual	Reagent
1	ICV	13:22	Temperature	22.6					
15	CCV	13:23	Temperature	21.2					

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.: 280-88669-1

SDG No.:

Analyst: IEU Batch Start Date: 10/18/2016

Reporting Units: SU Analytical Batch No.: 347052

Sample Number	QC Type	Time	Analyte	Result	Spike Amount	(%) Recovery	Limits	Qual	Reagent
1	ICV	13:22	pH adj. to 25 deg C	7.0	7.00	100	97-102		pH 7.0 ICV_00067
15	CCV	13:23	pH adj. to 25 deg C	7.0	7.00	100	97-102		pH 7.0 Buffer_00185

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.: 280-88669-1

SDG No.:

Analyst: AFB Batch Start Date: 09/01/2016

Reporting Units: mg/L Analytical Batch No.: 340426

Sample Number	QC Type	Time	Analyte	Result	Spike Amount	(%) Recovery	Limits	Qual	Reagent
8	ICV	12:07	Nitrate as N	4.07	4.00	102	90-110		IC ICV 5_00154
			Nitrite as N	4.13	4.00	103	90-110		IC ICV 5_00154
9	ICB	12:24	Nitrate as N	ND					
			Nitrite as N	ND					

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.: 280-88669-1

SDG No.:

Analyst: AFB Batch Start Date: 09/01/2016

Reporting Units: mg/L Analytical Batch No.: 340427

Sample Number	QC Type	Time	Analyte	Result	Spike Amount	(%) Recovery	Limits	Qual	Reagent
8	ICV	12:07	Chloride	82.4	80.0	103	90-110		IC CL ICV_00013
			Sulfate	81.8	80.0	102	90-110		IC SO4 ICV_00016
9	ICB	12:24	Chloride	ND					
			Sulfate	ND					

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.: 280-88669-1

SDG No.:

Analyst: AFB Batch Start Date: 09/29/2016

Reporting Units: mg/L Analytical Batch No.: 344268

Sample Number	QC Type	Time	Analyte	Result	Spike Amount	(%) Recovery	Limits	Qual	Reagent
1	CCV	09:29	Nitrate as N	5.02	5.00	100	90-110		IC LCS_00703
			Nitrite as N	5.01	5.00	100	90-110		IC LCS_00703
2	CCB	09:47	Nitrate as N	ND					
			Nitrite as N	ND					
17	CCV	19:49	Nitrate as N	5.04	5.00	101	90-110		IC LCS_00703
			Nitrite as N	5.16	5.00	103	90-110		IC LCS_00703
18	CCB	20:07	Nitrate as N	ND					
			Nitrite as N	ND					

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.: 280-88669-1

SDG No.:

Analyst: AFB Batch Start Date: 09/29/2016

Reporting Units: mg/L Analytical Batch No.: 344269

Sample Number	QC Type	Time	Analyte	Result	Spike Amount	(%) Recovery	Limits	Qual	Reagent
1	CCV	09:29	Chloride	99.2	100	99	90-110		IC LCS_00703
			Sulfate	101	100	101	90-110		IC LCS_00703
2	CCB	09:47	Chloride	ND					
			Sulfate	ND					
17	CCV	19:49	Chloride	101	100	101	90-110		IC LCS_00703
			Sulfate	101	100	101	90-110		IC LCS_00703
18	CCB	20:07	Chloride	ND					
			Sulfate	ND					

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.: 280-88669-1

SDG No.:

Method	Lab Sample ID	Analyte	Result	Qual	Units	RL	Dil
Batch ID: 344268 Date: 09/29/2016 17:27							
9056A	MB 280-344354/3-A	Nitrate as N	ND		mg/Kg	5.0	1
9056A	MB 280-344354/3-A	Nitrite as N	ND		mg/Kg	5.0	1
Batch ID: 344269 Date: 09/29/2016 17:27							
9056A	MB 280-344354/3-A	Chloride	3.55	J	mg/Kg	30	1
9056A	MB 280-344354/3-A	Sulfate	4.16	J	mg/Kg	50	1
Batch ID: 344083 Date: 09/28/2016 08:11							
SM 3500 CR D	MB 280-344164/3-A	Cr (VI)	ND		mg/L	0.020	1

FORM III-IN

5-IN
MATRIX SPIKE SAMPLE RECOVERY
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job No.: 280-88669-1

SDG No.:

Matrix: Solid

Method	Lab Sample ID	Analyte	Result	C	Unit	Spike Amount	Pct. Rec.	Limits	RPD	RPD Limit	Q
Batch ID: 344268 Date: 09/29/2016 18:20											
9056A	280-88669-3	Nitrate as N	ND		mg/Kg						
9056A	280-88669-3 MS	Nitrate as N	42.8		mg/Kg	48.9	87	80-120			
9056A	280-88669-3	Nitrite as N	ND		mg/Kg						
9056A	280-88669-3 MS	Nitrite as N	39.8		mg/Kg	48.9	81	80-120			
Batch ID: 344269 Date: 09/29/2016 18:20											
9056A	280-88669-3	Chloride	ND		mg/Kg						B
9056A	280-88669-3 MS	Chloride	207		mg/Kg	244	85	80-120			B
9056A	280-88669-3	Sulfate	480		mg/Kg						F1 B
9056A	280-88669-3 MS	Sulfate	635		mg/Kg	244	65	80-120			F1 B

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

FORM V-IN

5-IN
MATRIX SPIKE SAMPLE RECOVERY
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job No.: 280-88669-1

SDG No.:

Matrix: Water

Method	Lab Sample ID	Analyte	Result	C	Unit	Spike Amount	Pct. Rec.	Limits	RPD	RPD Limit	Q
Batch ID: 344083 Date: 09/28/2016 09:26											
SM 3500 CR D	280-88669-1	Cr (VI)	ND		mg/L						F1
SM 3500 CR D	280-88669-1 MS	Cr (VI)	0.0603		mg/L	0.100	60	85-115			F1

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

FORM V-IN

5-IN
MATRIX SPIKE DUPLICATE SAMPLE RECOVERY
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job No.: 280-88669-1

SDG No.:

Matrix: Solid

Method	Lab Sample ID	Analyte	Result	C	Unit	Spike Amount	Pct. Rec.	Limits	RPD	RPD Limit	Q
Batch ID: 344268 Date: 09/29/2016 18:38											
9056A	280-88669-3 MSD	Nitrate as N	46.6		mg/Kg	48.6	96	80-120	9	20	
9056A	280-88669-3 MSD	Nitrite as N	45.2		mg/Kg	48.6	93	80-120	13	20	
Batch ID: 344269 Date: 09/29/2016 18:38											
9056A	280-88669-3 MSD	Chloride	231		mg/Kg	243	95	80-120	11	20	B
9056A	280-88669-3 MSD	Sulfate	644		mg/Kg	243	69	80-120	1	20	F1 B

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

FORM V-IN

6-IN
DUPLICATE
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job No.: 280-88669-1

SDG No.:

Matrix: Solid

Method	Client Sample ID	Lab Sample ID	Analyte	Result	Unit	RPD	RPD Limit	Qual
Batch ID: 344268	Date: 09/29/2016 18:03							
9056A	CCO2D	280-88669-3	Nitrate as N	ND	mg/Kg			
9056A	CCO2D	280-88669-3 DU	Nitrate as N	ND	mg/Kg	NC	15	
9056A	CCO2D	280-88669-3	Nitrite as N	ND	mg/Kg			
9056A	CCO2D	280-88669-3 DU	Nitrite as N	ND	mg/Kg	NC	15	
Batch ID: 344269	Date: 09/29/2016 18:03							
9056A	CCO2D	280-88669-3	Chloride	ND	mg/Kg			
9056A	CCO2D	280-88669-3 DU	Chloride	ND	mg/Kg	NC	10	B
9056A	CCO2D	280-88669-3	Sulfate	480	mg/Kg			
9056A	CCO2D	280-88669-3 DU	Sulfate	462	mg/Kg	3	10	B

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

FORM VI-IN

6-IN
DUPLICATE
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job No.: 280-88669-1

SDG No.:

Matrix: Water

Method	Client Sample ID	Lab Sample ID	Analyte	Result	Unit	RPD	RPD Limit	Qual
Batch ID: 344083 Date: 09/28/2016 09:26								
SM 3500 CR D	CCO2D	280-88669-1	Cr (VI)	ND	mg/L			
SM 3500 CR D	CCO2D	280-88669-1 DU	Cr (VI)	ND	mg/L	NC	20	

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

FORM VI-IN

7A-IN
LAB CONTROL SAMPLE
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job No.: 280-88669-1

SDG No.:

Matrix: Solid

Method	Lab Sample ID	Analyte	Result	C	Unit	Spike Amount	Pct. Rec.	Limits	RPD	RPD Limit	Q
Batch ID: 347052	Date: 10/18/2016 13:23										
						LCS Source: pH 7.0 Buffer_00185					
9045D	LCS 280-347014/1-A	pH adj. to 25 deg C	7.0		SU	7.00	100	97-103			
Batch ID: 344268	Date: 09/29/2016 16:52										
						LCS Source: IC Cal low_00233					
9056A	LCS 280-344354/1-A	Nitrate as N	50.4		mg/Kg	50.0	101	90-110	0	10	
9056A	LCS 280-344354/1-A	Nitrite as N	50.5		mg/Kg	50.0	101	90-110	1	10	
Batch ID: 344269	Date: 09/29/2016 16:52										
						LCS Source: IC CL cal_00045					
9056A	LCS 280-344354/1-A	Chloride	1020		mg/Kg	999	102	90-110	0	10	B
						LCS Source: IC sulfatecal_00042					
9056A	LCS 280-344354/1-A	Sulfate	1020		mg/Kg	999	102	90-110	0	10	B

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

FORM VIIA-IN

7A-IN
LAB CONTROL SAMPLE
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job No.: 280-88669-1

SDG No.:

Matrix: Water

Method	Lab Sample ID	Analyte	Result	C	Unit	Spike Amount	Pct. Rec.	Limits	RPD	RPD Limit	Q
Batch ID: 344083	Date: 09/28/2016 08:11										
						LCS Source: CR6 spike sou_00738					
SM 3500 CR D	LCS 280-344164/1-A	Cr (VI)	0.101		mg/L	0.100	101	85-115	1	20	

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.: 280-88669-1

SDG No.:

Matrix: Solid

Method	Lab Sample ID	Analyte	Result	C	Unit	Spike Amount	Pct. Rec.	Limits	RPD	RPD Limit	Q
Batch ID: 344268	Date: 09/29/2016 17:10										
						LCSD Source: IC Cal low_00233					
9056A	LCSD 280-344354/2-A	Nitrate as N	50.6		mg/Kg	50.0	101	90-110	0	10	
9056A	LCSD 280-344354/2-A	Nitrite as N	51.2		mg/Kg	50.0	102	90-110	1	10	
Batch ID: 344269	Date: 09/29/2016 17:10										
						LCSD Source: IC CL cal_00045					
9056A	LCSD 280-344354/2-A	Chloride	1020		mg/Kg	1000	102	90-110	0	10	B
						LCSD Source: IC sulfatecal_00042					
9056A	LCSD 280-344354/2-A	Sulfate	1020		mg/Kg	1000	102	90-110	0	10	B

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.: 280-88669-1

SDG No.:

Matrix: Water

Method	Lab Sample ID	Analyte	Result	C	Unit	Spike Amount	Pct. Rec.	Limits	RPD	RPD Limit	Q
Batch ID: 344083		Date: 09/28/2016 08:11									
						LCSD Source: CR6 spike sou_00738					
SM 3500 CR D	LCSD 280-344164/2-A	Cr (VI)	0.102		mg/L	0.100	102	85-115	1	20	

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.: 280-88669-1

SDG No.:

Matrix: Water

Method	Lab Sample ID	Analyte	Result	C	Unit	Spike Amount	Pct. Rec.	Limits	RPD	RPD Limit	Q
Batch ID: 344268	Date: 09/29/2016 10:04										
						LCS Source: IC Cal low_00233					
9056A	MRL 280-344268/3	Nitrate as N	0.212	J	mg/L	0.200	106	50-150			
9056A	MRL 280-344268/3	Nitrite as N	0.185	J	mg/L	0.200	92	50-150			
Batch ID: 344269	Date: 09/29/2016 10:04										
						LCS Source: IC CAL cl/so4_00118					
9056A	MRL 280-344269/3	Chloride	2.52	J	mg/L	2.50	101	50-150			
9056A	MRL 280-344269/3	Sulfate	2.51	J	mg/L	2.50	101	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: 280-88669-1

SDG Number:

Matrix: Water Instrument ID: WC_HSPEC_CR_B_D

Method: SM 3500 CR D MDL Date: 03/28/2011 13:13

Analyte	Wavelength/ Mass	RL (mg/L)	MDL (mg/L)
Cr (VI)		0.02	0.004

FORM IX - IN

9-IN
CALIBRATION BLANK DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job Number: 280-88669-1

SDG Number:

Matrix: Water Instrument ID: WC_HSPEC_CR_B_D

Method: SM 3500 CR D XMDL Date: 03/28/2011 13:13

Analyte	Wavelength/ Mass	XRL (mg/L)	XMDL (mg/L)
Cr (VI)		0.02	0.004

FORM IX - IN

9-IN
DETECTION LIMITS
GENERAL CHEMISTRY - SOLUBLE

Lab Name: TestAmerica Denver Job Number: 280-88669-1

SDG Number:

Matrix: Solid Instrument ID: NOEQUIP

Method: 9045D RL Date: 11/01/2009 00:00

Leach Method: DI Leach

Analyte	Wavelength/ Mass	RL (Degrees C)	
Temperature		1	

FORM IX - IN

9-IN
CALIBRATION BLANK DETECTION LIMITS
GENERAL CHEMISTRY - SOLUBLE

Lab Name: TestAmerica Denver Job Number: 280-88669-1

SDG Number:

Matrix: Solid Instrument ID: NOEQUIP

Method: 9045D XRL Date: 12/07/2009 19:08

Analyte	Wavelength/ Mass	XRL (Degrees C)	
Temperature		1	

FORM IX - IN

9-IN
DETECTION LIMITS
GENERAL CHEMISTRY - SOLUBLE

Lab Name: TestAmerica Denver Job Number: 280-88669-1

SDG Number:

Matrix: Solid Instrument ID: NOEQUIP

Method: 9045D RL Date: 11/01/2009 00:00

Leach Method: DI Leach

Analyte	Wavelength/ Mass	RL (SU)	
pH adj. to 25 deg C		0.1	

FORM IX - IN

9-IN
CALIBRATION BLANK DETECTION LIMITS
GENERAL CHEMISTRY - SOLUBLE

Lab Name: TestAmerica Denver Job Number: 280-88669-1

SDG Number:

Matrix: Solid Instrument ID: NOEQUIP

Method: 9045D XRL Date: 12/07/2009 19:08

Analyte	Wavelength/ Mass	XRL (SU)	
pH adj. to 25 deg C		0.1	

FORM IX - IN

9-IN
DETECTION LIMITS
GENERAL CHEMISTRY - SOLUBLE

Lab Name: TestAmerica Denver Job Number: 280-88669-1

SDG Number:

Matrix: Solid Instrument ID: WC_IonChrom6

Method: 9056A MDL Date: 03/28/2011 13:31

Leach Method: DI Leach

Analyte	Wavelength/ Mass	RL (mg/Kg)	MDL (mg/Kg)
Chloride		30	2
Nitrate as N		5	0.314
Nitrite as N		5	0.336
Sulfate		50	1.7

FORM IX - IN

9-IN
CALIBRATION BLANK DETECTION LIMITS
GENERAL CHEMISTRY - SOLUBLE

Lab Name: TestAmerica Denver Job Number: 280-88669-1

SDG Number:

Matrix: Solid Instrument ID: WC_IonChrom6

Method: 9056A XMDL Date: 03/28/2011 13:31

Analyte	Wavelength/ Mass	XRL (mg/L)	XMDL (mg/L)
Chloride		3	0.254
Nitrate as N		0.5	0.0425
Nitrite as N		0.5	0.0494
Sulfate		5	0.232

FORM IX - IN

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job No.: 280-88669-1

SDG No.:

Instrument ID: WC_HSPEC_CR_B_D Method: SM 3500 CR D

Start Date: 09/28/2016 08:11 End Date: 09/28/2016 09:32

Lab Sample ID	D/F	Type	Time	Analytes																			
				Cr6																			
IC 280-344083/1			08:11	X																			
IC 280-344083/2			08:11	X																			
IC 280-344083/3			08:11	X																			
IC 280-344083/4			08:11	X																			
IC 280-344083/5			08:11	X																			
ICV 280-344083/6	1		08:11	X																			
ICB 280-344083/7	1		08:11	X																			
LCS 280-344164/1-A	1	T	08:11	X																			
LCSD 280-344164/2-A	1	T	08:11	X																			
MB 280-344164/3-A	1	T	08:11	X																			
ZZZZZZ			08:11																				
ZZZZZZ			08:11																				
ZZZZZZ			08:11																				
ZZZZZZ			08:11																				
ZZZZZZ			08:11																				
ZZZZZZ			08:11																				
CCV 280-344083/17	1		08:11	X																			
CCB 280-344083/18	1		08:11	X																			
280-88669-1	1	T	09:26	X																			
280-88669-1 DU	1	T	09:26	X																			
280-88669-1 MS	1	T	09:26	X																			
280-88669-1 MSD	1	T	09:26	X																			
CCV 280-344083/23	1		09:26	X																			
CCB 280-344083/24	1		09:32	X																			

Prep Types
T = Total/NA

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job No.: 280-88669-1

SDG No.:

Instrument ID: NOEQUIP Method: 9045D

Start Date: 10/18/2016 13:22 End Date: 10/18/2016 13:25

Lab Sample ID	D/F	Type	Time	Analytes																			
				pH	Temp																		
ICV 280-347052/1	1		13:22	X	X																		
ZZZZZZ			13:22																				
ZZZZZZ			13:22																				
LCS 280-347014/1-A	1	S	13:23	X	X																		
ZZZZZZ			13:23																				
ZZZZZZ			13:23																				
ZZZZZZ			13:23																				
ZZZZZZ			13:23																				
ZZZZZZ			13:23																				
ZZZZZZ			13:23																				
ZZZZZZ			13:23																				
ZZZZZZ			13:23																				
280-88669-2	1	S	13:23	X	X																		
ZZZZZZ			13:23																				
CCV 280-347052/15	1		13:23	X	X																		
ZZZZZZ			13:23																				
ZZZZZZ			13:23																				
ZZZZZZ			13:23																				
ZZZZZZ			13:23																				
ZZZZZZ			13:23																				
ZZZZZZ			13:23																				
ZZZZZZ			13:23																				
ZZZZZZ			13:23																				
ZZZZZZ			13:23																				
ZZZZZZ			13:23																				
CCV 280-347052/26			13:23																				
ZZZZZZ			13:23																				
ZZZZZZ			13:23																				
ZZZZZZ			13:23																				
ZZZZZZ			13:23																				
ZZZZZZ			13:23																				
ZZZZZZ			13:23																				
ZZZZZZ			13:23																				
ZZZZZZ			13:23																				
ZZZZZZ			13:23																				
ZZZZZZ			13:23																				
ZZZZZZ			13:23																				
CCV 280-347052/38			13:23																				
ZZZZZZ			13:23																				
ZZZZZZ			13:25																				
ZZZZZZ			13:25																				
ZZZZZZ			13:25																				

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job No.: 280-88669-1

SDG No.:

Instrument ID: NOEQUIP Method: 9045D

Start Date: 10/18/2016 13:22 End Date: 10/18/2016 13:25

Lab Sample ID	D/F	Type	Time	Analytes																			
				pH	Temp																		
CCV 280-347052/43			13:25																				

Prep Types
S = Soluble

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job No.: 280-88669-1

SDG No.:

Instrument ID: WC_IonChrom6 Method: 9056A

Start Date: 09/01/2016 09:47 End Date: 09/01/2016 13:35

Lab Sample ID	D/F	Type	Time	Analytes																			
RTC 280-340426/1			09:47																				
STD 280-340426/2 IC			10:05																				
STD 280-340426/3 IC			10:23																				
STD 280-340426/4 IC			10:41																				
STD 280-340426/5 IC			10:58																				
STD 280-340426/6 IC			11:16																				
STD 280-340426/7 IC			11:34																				
ICV 280-340426/8	1		12:07																				
ICB 280-340426/9	1		12:24																				
ZZZZZZ			12:42																				
ZZZZZZ			13:00																				
ZZZZZZ			13:17																				
ZZZZZZ			13:35																				

Prep Types

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job No.: 280-88669-1

SDG No.:

Instrument ID: WC_IonChrom6 Method: 9056A

Start Date: 09/01/2016 09:47 End Date: 09/02/2016 03:23

Lab Sample ID	D/F	Type	Time	Analytes																			
RTC 280-340427/1			09:47																				
STD 280-340427/2 IC			10:05																				
STD 280-340427/3 IC			10:23																				
STD 280-340427/4 IC			10:41																				
STD 280-340427/5 IC			10:58																				
STD 280-340427/6 IC			11:16																				
STD 280-340427/7 IC			11:34																				
ICV 280-340427/8	1		12:07																				
ICB 280-340427/9	1		12:24																				
ZZZZZZ			12:42																				
ZZZZZZ			13:00																				
ZZZZZZ			13:17																				
ZZZZZZ			13:35																				
ZZZZZZ			20:35																				
ZZZZZZ			20:53																				
ZZZZZZ			21:11																				
ZZZZZZ			21:29																				
ZZZZZZ			21:46																				
ZZZZZZ			22:04																				
ZZZZZZ			22:22																				
ZZZZZZ			22:39																				
ZZZZZZ			22:57																				
ZZZZZZ			23:15																				
CCV 280-340427/24			23:32																				
CCB 280-340427/25			23:50																				
ZZZZZZ			00:08																				
ZZZZZZ			00:26																				
ZZZZZZ			00:43																				
ZZZZZZ			01:01																				
ZZZZZZ			01:19																				
ZZZZZZ			01:36																				
ZZZZZZ			01:54																				
ZZZZZZ			02:12																				
ZZZZZZ			02:30																				
ZZZZZZ			02:47																				
CCV 280-340427/36			03:05																				
CCB 280-340427/37			03:23																				

Prep Types

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job No.: 280-88669-1

SDG No.:

Instrument ID: WC_IonChrom6 Method: 9056A

Start Date: 09/29/2016 09:29 End Date: 09/29/2016 21:00

Lab Sample ID	D/F	Type	Time	Analytes																			
				N-No2	NO3																		
CCV 280-344268/1	1		09:29	X	X																		
CCB 280-344268/2	1		09:47	X	X																		
MRL 280-344268/3	1	T	10:04	X	X																		
ZZZZZZ			10:22																				
ZZZZZZ			10:40																				
ZZZZZZ			10:57																				
LCS 280-344354/1-A	1	S	16:52	X	X																		
LCSD 280-344354/2-A	1	S	17:10	X	X																		
MB 280-344354/3-A	1	S	17:27	X	X																		
280-88669-3	1	S	17:45	X	X																		
280-88669-3 DU	1	S	18:03	X	X																		
280-88669-3 MS	1	S	18:20	X	X																		
280-88669-3 MSD	1	S	18:38	X	X																		
ZZZZZZ			18:56																				
ZZZZZZ			19:13																				
ZZZZZZ			19:31																				
CCV 280-344268/17	1		19:49	X	X																		
CCB 280-344268/18	1		20:07	X	X																		
ZZZZZZ			20:24																				
CCV 280-344268/20			20:42																				
CCB 280-344268/21			21:00																				

Prep Types
S = Soluble
T = Total/NA

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job No.: 280-88669-1

SDG No.:

Instrument ID: WC_IonChrom6 Method: 9056A

Start Date: 09/29/2016 09:29 End Date: 09/29/2016 21:00

Lab Sample ID	D/F	Type	Time	Analytes																			
				CL-	SO4																		
CCV 280-344269/1	1		09:29	X	X																		
CCB 280-344269/2	1		09:47	X	X																		
MRL 280-344269/3	1	T	10:04	X	X																		
ZZZZZZ			10:22																				
ZZZZZZ			10:40																				
ZZZZZZ			10:57																				
LCS 280-344354/1-A	1	S	16:52	X	X																		
LCSD 280-344354/2-A	1	S	17:10	X	X																		
MB 280-344354/3-A	1	S	17:27	X	X																		
280-88669-3	1	S	17:45	X	X																		
280-88669-3 DU	1	S	18:03	X	X																		
280-88669-3 MS	1	S	18:20	X	X																		
280-88669-3 MSD	1	S	18:38	X	X																		
ZZZZZZ			18:56																				
ZZZZZZ			19:13																				
ZZZZZZ			19:31																				
CCV 280-344269/17	1		19:49	X	X																		
CCB 280-344269/18	1		20:07	X	X																		
ZZZZZZ			20:24																				
CCV 280-344269/20			20:42																				
CCB 280-344269/21			21:00																				

Prep Types
S = Soluble
T = Total/NA

Calibration

Calib 344083-0 / Cr (VI)

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

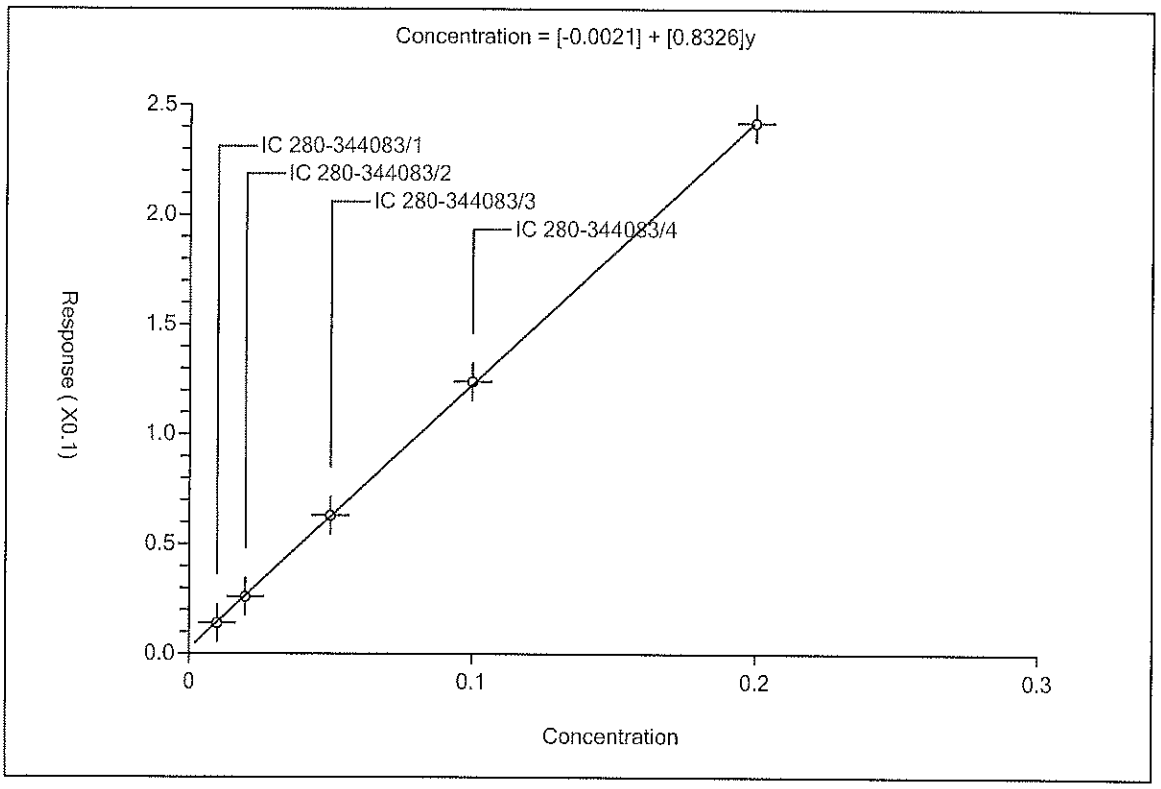
Curve Coefficients

Intercept:	-0.0021
Slope:	0.8326

Error Coefficients

Standard Error:	0.0008573
Relative Standard Error:	2.982
Correlation Coefficient:	1.0000
Coefficient of Determination (Adjusted):	0.9999 (0.9999)

ID	Level	Concentration	Response	IS Amount	IS Response	RF	Used
1	IC 280-344083/1	0.01	0.014			1.4	Y
2	IC 280-344083/2	0.02	0.026			1.3	Y
3	IC 280-344083/3	0.05	0.063			1.26	Y
4	IC 280-344083/4	0.1	0.124			1.24	Y
5	IC 280-344083/5	0.2	0.242			1.21	Y



TALS Raw Data Report

Job Number: 280-85724-1
LIMS Batch: 344083
Equipment: WC_HSPEC_CR_B_D

Laboratory: TestAmerica Denver

RS# 6 Lab ID: **ICV 280-344083/6** Inj Date: 9/28/2016 8:11:49AM Dil: 1.0 Meth: 3500_CR_D

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Cr (VI)	0.063	.05035380 mg/L	mg/L	101	90 110		

RS# 7 Lab ID: **ICB 280-344083/7** Inj Date: 9/28/2016 8:11:49AM Dil: 1.0 Meth: 3500_CR_D

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Cr (VI)	0.000	002100000 mg/L	mg/L				

RS# 15 Lab ID: **280-85724-A-1 LOQV** Inj Date: 9/28/2016 8:11:49AM Dil: 1.0 Meth: 3500_CR_D

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Cr (VI)	0.026	.01954760 mg/L	mg/L	98			
Cr (VI)	0.026	.01954760 mg/L	mg/L	98			

RS# 16 Lab ID: **280-85724-A-1 MDLV** Inj Date: 9/28/2016 8:11:49AM Dil: 1.0 Meth: 3500_CR_D

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Cr (VI)	0.007	003728200 mg/L	mg/L	75			
Cr (VI)	0.007	003728200 mg/L	mg/L	75			

RS# 17 Lab ID: **CCV 280-344083/17** Inj Date: 9/28/2016 8:11:49AM Dil: 1.0 Meth: 3500_CR_D

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Cr (VI)	0.121	.09864460 mg/L	mg/L	99	90 110		

RS# 18 Lab ID: **CCB 280-344083/18** Inj Date: 9/28/2016 8:11:49AM Dil: 1.0 Meth: 3500_CR_D

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Cr (VI)	0.000	002100000 mg/L	mg/L				

TALS Raw Data Report

Job Number: 280-88659-1
LIMS Batch: 344083
Equipment: WC_HSPEC_CR_B_D

Laboratory: TestAmerica Denver

RS# 6 Lab ID: **ICV 280-344083/6** Inj Date: 9/28/2016 8:11:49AM Dil: 1.0 Meth: 3500_CR_B

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Cr (VI)	0.063	.05035380 mg/L	mg/L	101	90 110		

RS# 7 Lab ID: **ICB 280-344083/7** Inj Date: 9/28/2016 8:11:49AM Dil: 1.0 Meth: 3500_CR_B

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Cr (VI)	0.000	002100000 mg/L	mg/L				

RS# 8 Lab ID: **LCS 280-344164/1-A** Inj Date: 9/28/2016 8:11:49AM Dil: 1.0 Meth: 3500_CR_D

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Cr (VI)	0.124	0.1011424 mg/L	mg/L	101	85 115		

RS# 9 Lab ID: **LCSD 280-344164/2-A** Inj Date: 9/28/2016 8:11:49AM Dil: 1.0 Meth: 3500_CR_D

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Cr (VI)	0.125	0.1019750 mg/L	mg/L	102	85 115	1	20

RS# 10 Lab ID: **MB 280-344164/3-A** Inj Date: 9/28/2016 8:11:49AM Dil: 1.0 Meth: 3500_CR_D

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Cr (VI)	0.000	002100000 mg/L	mg/L				

RS# 11 Lab ID: **280-88659-A-1-A** Inj Date: 9/28/2016 8:11:49AM Dil: 1.0 Meth: 3500_CR_D

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Cr (VI)	0.0010	001267400 mg/L	mg/L				

RS# 12 Lab ID: **280-88659-A-1-B DU** Inj Date: 9/28/2016 8:11:49AM Dil: 1.0 Meth: 3500_CR_D

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Cr (VI)	0.0020	000434800 mg/L	mg/L			NC	20

RS# 13 Lab ID: **280-88659-A-1-C MS** Inj Date: 9/28/2016 8:11:49AM Dil: 1.0 Meth: 3500_CR_D

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Cr (VI)	0.1210	098644600 mg/L	mg/L	99	85 115		

RS# 14 Lab ID: **280-88659-A-1-D MSD** Inj Date: 9/28/2016 8:11:49AM Dil: 1.0 Meth: 3500_CR_D

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Cr (VI)	0.1180	096146800 mg/L	mg/L	96	85 115	3	20

RS# 17 Lab ID: **CCV 280-344083/17** Inj Date: 9/28/2016 8:11:49AM Dil: 1.0 Meth: 3500_CR_B

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Cr (VI)	0.121	.09864460 mg/L	mg/L	99	90 110		

RS# 18 Lab ID: **CCB 280-344083/18** Inj Date: 9/28/2016 8:11:49AM Dil: 1.0 Meth: 3500_CR_B

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Cr (VI)	0.000	002100000 mg/L	mg/L				

TALS Raw Data Report

Job Number: 280-88669-1
LIMS Batch: 344083
Equipment: WC_HSPEC_CR_B_D

Laboratory: TestAmerica Denver

RS# 6 Lab ID: **ICV 280-344083/6** Inj Date: 9/28/2016 8:11:49AM Dil: 1.0 Meth: 3500_CR_D

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt		% RPD	RPD Lmt
Cr (VI)	0.063	.05035380 mg/L	mg/L	101	90	110		

RS# 7 Lab ID: **ICB 280-344083/7** Inj Date: 9/28/2016 8:11:49AM Dil: 1.0 Meth: 3500_CR_D

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt		% RPD	RPD Lmt
Cr (VI)	0.000	002100000 mg/L	mg/L					

RS# 17 Lab ID: **CCV 280-344083/17** Inj Date: 9/28/2016 8:11:49AM Dil: 1.0 Meth: 3500_CR_D

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt		% RPD	RPD Lmt
Cr (VI)	0.121	.09864460 mg/L	mg/L	99	90	110		

RS# 18 Lab ID: **CCB 280-344083/18** Inj Date: 9/28/2016 8:11:49AM Dil: 1.0 Meth: 3500_CR_D

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt		% RPD	RPD Lmt
Cr (VI)	0.000	002100000 mg/L	mg/L					

RS# 19 Lab ID: **280-88669-A-1** Inj Date: 9/28/2016 9:26:10AM Dil: 1.0 Meth: 3500_CR_D

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt		% RPD	RPD Lmt
Cr (VI)	0.0030	000397800 mg/L	mg/L					

RS# 20 Lab ID: **280-88669-A-1 DU** Inj Date: 9/28/2016 9:26:10AM Dil: 1.0 Meth: 3500_CR_D

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt		% RPD	RPD Lmt
Cr (VI)	0.0040	001230400 mg/L	mg/L				NC	20

RS# 21 Lab ID: **280-88669-A-1 MS** Inj Date: 9/28/2016 9:26:10AM Dil: 1.0 Meth: 3500_CR_D

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt		% RPD	RPD Lmt
Cr (VI)	0.0750	060345000 mg/L	mg/L	60	85	115		

RS# 22 Lab ID: **280-88669-A-1 MSD** Inj Date: 9/28/2016 9:26:10AM Dil: 1.0 Meth: 3500_CR_D

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt		% RPD	RPD Lmt
Cr (VI)	0.0790	063675400 mg/L	mg/L	64	85	115	5	20

RS# 23 Lab ID: **CCV 280-344083/23** Inj Date: 9/28/2016 9:26:10AM Dil: 1.0 Meth: 3500_CR_D

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt		% RPD	RPD Lmt
Cr (VI)	0.119	.09697940 mg/L	mg/L	97	90	110		

RS# 24 Lab ID: **CCB 280-344083/24** Inj Date: 9/28/2016 9:32:45AM Dil: 1.0 Meth: 3500_CR_D

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt		% RPD	RPD Lmt
Cr (VI)	0.001	001267400 mg/L	mg/L					

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Calibration Data Review Checklist

Note: Includes all methods (except IC, CN) that utilize initial calibration)

SOP No. WC-0021		Instrument ID: Spec
LIMS Prep Batch#: NA	LIMS Analytical Batch# 344083	ICAL Batch 344083
Analyst(s)/1st Reviewer/Date: JML 9/30/14		QC Type (circle): Standard (LCSD) DOD Q4 DoD Q5 QAPP_____ Other_____
Method (circle): 3500-Cr B (3500-Cr D) 3500-Fe B 3500-Fe D 350.1 351.2 353.2 365.1 410.4 420.1 420.4 4500-NO_2 B 4500-S^{2-} D 7196A 9060 5310B		
Matrix (circle): (Water) Solid Waste Leachate		Circle all that apply: (Total) Field Filtered Lab Filtered

Review Items	Yes	No	NA	2nd Rev	If No, why is data reportable? (List NCM #)
A. Calibration/Instrument Run QC					
1. Verify intermediate standards for correct concentration stated in SOP (ICAL pts at correct concentration)	✓			✓	
2. Number of Points: 1st order: 5 standards; 2nd order: 6 standards	✓			✓	
3. Linearity and intercept: r ≥ 0.995 (r^2≥0.99) |x-intercept| < ½ RL	✓			✓	
4. ICV, second source: run before samples 90-110% recovery	✓			✓	
5. CCV: 10% frequency & closing 90-110% recovery	✓			✓	
6. Cadmium Column Efficiency Check (353.2): 85-115% NO_2 recovery			✓	✓	
7. ICB: run before samples, CCB: 10% frequency, & closing Result < ½ RL (410.4 Result <RL)	✓			✓	
B. Client Sample and QC Sample Results					
8. Samples with results > linear range diluted and reanalyzed?	✓			✓	Comments:
9. On-instrument response of diluted sample is >10X |MB| on-instrument response	✓			✓	Comments:
C. Preparation/Matrix QC					
10. If samples are lab filtered, QC samples filtered?	✓			✓	
11. Method Blank: one per preparation batch Result < ½ RL (410.4 Result <RL)	✓			✓	*If no, list blank ID & explain:*
12. LCS: one per preparation batch 90-110% recovery Lab limits (3500-x, 4500-x, 7196A); (7196 DOD5: 90-111% recovery)	✓			✓	*If no, list LCS ID & explain:*
13. MS/MSD or MS/Dup frequency (Determine correct frequency by method or reference SOP) A pair per 20 samples or a pair per 10 samples Lab limits (3500-x, 4500-x, 7196A);Others (90-110%)	✓			✓	*If no, list QC ID & explain:*

TestAmerica Denver

Review Items	Yes	No	NA	2nd Rev	If No, why is data reportable?
D. Raw Data & TALS Data Entry					
14. Raw Data/Run Log					
a. Unused data is clearly identified and reason not used is stated	✓			✓	
b. All cross outs are initialed and dated	✓			✓	
c. Out of control QC is clearly identified	✓			✓	
d. Any data that has a qualifier is commented on with appropriate action taken	✓			✓	
e. The first page of the run includes the filename, instrument, and analyst initials/signature f. Analyst initials/signature provided	✓			✓	
15. TALS Sample List					
a. LIMS Sample IDs / Containers are correct	✓			✓	
b. Method and matrix are correct	✓			✓	
c. Date and time match raw data	✓			✓	
d. Dilutions are correct	✓			✓	
e. Correct suffix (DU, MS, MSD) designated (where applicable)	✓			✓	
16. TALS Worksheet Tab is complete and correct	✓			✓	
17. Sample pH, presence of chlorine/sulfide recorded?	✓			✓	
18. NCM written for any samples needing preservation at the bench?	✓			✓	
19. TALS Reagent Tab is complete and correct	✓			✓	
20. TALS QC Links Tab is correct	✓			✓	
21. TALS Sample Results Tab					
a. All unused data are marked Rejected or Accepted	✓			✓	
b. All reported analytes are marked Primary or Secondary	✓			✓	
22. TALS Batch Information Screen documentation is complete	✓			✓	
23. Historical Data Checker: Check historical data. Print charts for outliers. Take corrective action as appropriate	✓			✓	
24. TALS Status set to appropriate review level	✓			✓	
E. Final Report and NCMs (2nd level review only)					
25. Were all job/project requirements met?				✓	
26. Results for samples and QC correct on final report?				✓	
27. Are all necessary scanned documents in TALS?				✓	
28. NCMs reviewed for applicability, correct references to batches, grammar/typographical errors?				✓	

Comments: _____

2nd Reviewer: KAm **Review Date:** 10.05.16

TestAmerica Denver
Area/Height Percent Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\02.0000.d
Lims ID: std L1
Client ID:
Sample Type: IC Calib Level: 1
Inject. Date: 01-Sep-2016 10:05:00 ALS Bottle#: 0 Worklist Smp#: 2
Injection Vol: 25.0 ul Dil. Factor: 1.0000
Sample Info: 280-0050495-002
Operator ID: Instrument ID: WC_IonChrom6
Sublist: chrom-Anions_IC6*sub4

Method: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\Anions_IC6.m
Limit Group: Wet - Anions 28D
Last Update: 02-Sep-2016 09:37:31 Calib Date: 01-Sep-2016 11:34:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\07.0000.d
Process Host: XAWRK011

Detector: 0005
Number of peaks found: 8

RT	Start RT	End RT	Area	Area%	A/Ht Ratio	Flags	Compound Identification
1.942	1.808	2.250	5857210	10.11	3.84		1 Fluoride
3.375	3.175	3.750	15885842	27.41	4.91		2 Chloride
3.967	3.750	4.292	7876516	13.59	5.69		3 Nitrite as N
6.525	6.258	6.725	1315198	2.27	7.38		4 Bromide
7.075	6.767	7.350	7977650	13.77	7.21		5 Nitrate as N
8.292	8.025	8.642	1722685	2.97	12.53		
9.717	9.500	10.058	11957411	20.64	5.21		6 Sulfate
12.075	11.808	12.383	5354110	9.24	6.85		7 Orthophosphate as P
			57946622			Totals	

Total Unknown Area% = 2.97

Flag Legend
M - Manually Integrated
A - User Assigned Compound
B - Overlapped Base Peak
O - Overlapping Peak
e - Potential Peak Saturation

TestAmerica Denver
Area/Height Percent Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\02.0000.d
Lims ID: std L1
Client ID:
Sample Type: IC Calib Level: 1
Inject. Date: 01-Sep-2016 10:05:00 ALS Bottle#: 0 Worklist Smp#: 2
Injection Vol: 25.0 ul Dil. Factor: 1.0000
Sample Info: 280-0050495-002
Operator ID: Instrument ID: WC_IonChrom6
Sublist: chrom-Anions_IC6*sub4

Method: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\Anions_IC6.m
Limit Group: Wet - Anions
Last Update: 02-Sep-2016 09:37:31 Calib Date: 01-Sep-2016 11:34:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\07.0000.d
Process Host: XAWRK011

Detector: 0005
Number of peaks found: 8

RT	Start RT	End RT	Area	Area%	A/Ht Ratio	Flags	Compound Identification
1.942	1.808	2.250	5857210	10.11	3.84		1 Fluoride
3.375	3.175	3.750	15885842	27.41	4.91		2 Chloride
3.967	3.750	4.292	7876516	13.59	5.69		3 Nitrite as N
6.525	6.258	6.725	1315198	2.27	7.38		4 Bromide
7.075	6.767	7.350	7977650	13.77	7.21		5 Nitrate as N
8.292	8.025	8.642	1722685	2.97	12.53		
9.717	9.500	10.058	11957411	20.64	5.21		6 Sulfate
12.075	11.808	12.383	5354110	9.24	6.85		7 Orthophosphate as P
			57946622			Totals	

Total Unknown Area% = 2.97

Flag Legend
M - Manually Integrated
A - User Assigned Compound
B - Overlapped Base Peak
O - Overlapping Peak
e - Potential Peak Saturation

TestAmerica Denver
Target Compound Quantitation Report

Data File:	\\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\02.0000.d				
Lims ID:	std L1				
Client ID:					
Sample Type:	IC	Calib Level:	1		
Inject. Date:	01-Sep-2016 10:05:00	ALS Bottle#:	0	Worklist Smp#:	2
Injection Vol:	25.0 ul	Dil. Factor:	1.0000		
Sample Info:	280-0050495-002				
Operator ID:		Instrument ID:	WC_IonChrom6		
Sublist:	chrom-Anions_IC6*sub4				
Method:	\\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\Anions_IC6.m				
Limit Group:	Wet - Anions				
Last Update:	02-Sep-2016 09:37:31	Calib Date:	01-Sep-2016 11:34:00		
Integrator:	Falcon				
Quant Method:	External Standard	Quant By:	Initial Calibration		
Last ICal File:	\\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\07.0000.d				
Column 1 :			Det: 0005		
Process Host:	XAWRK011				

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride	1.942	1.958	-0.016	5857210	0.2000	0.1791	
2 Chloride	3.375	3.342	0.033	15885842	1.00	1.02	
3 Nitrite as N	3.967	3.967	0.000	7876516	0.2000	0.1795	
4 Bromide	6.525	6.467	0.058	1315198	0.2000	0.2044	
5 Nitrate as N	7.075	6.925	0.150	7977650	0.2000	0.2013	
6 Sulfate	9.717	9.350	0.367	11957411	1.00	1.01	
7 Orthophosphate as P	12.075	11.775	0.300	5354110	0.2000	0.1746	

Reagents:

IC CAL cl/so4_00114	Amount Added:	0.02	Units: mL
IC Cal low_00226	Amount Added:	0.02	Units: mL

TestAmerica Denver
Target Compound Quantitation Report

Data File:	\\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\02.0000.d				
Lims ID:	std L1				
Client ID:					
Sample Type:	IC	Calib Level:	1		
Inject. Date:	01-Sep-2016 10:05:00	ALS Bottle#:	0	Worklist Smp#:	2
Injection Vol:	25.0 ul	Dil. Factor:	1.0000		
Sample Info:	280-0050495-002				
Operator ID:		Instrument ID:	WC_IonChrom6		
Sublist:	chrom-Anions_IC6*sub4				
Method:	\\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\Anions_IC6.m				
Limit Group:	Wet - Anions 28D				
Last Update:	02-Sep-2016 09:37:31	Calib Date:	01-Sep-2016 11:34:00		
Integrator:	Falcon				
Quant Method:	External Standard	Quant By:	Initial Calibration		
Last ICal File:	\\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\07.0000.d				
Column 1 :			Det: 0005		
Process Host:	XAWRK011				

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride	1.942	1.958	-0.016	5857210	0.2000	0.1791	
2 Chloride	3.375	3.342	0.033	15885842	1.00	1.02	
3 Nitrite as N	3.967	3.967	0.000	7876516	0.2000	0.1795	
4 Bromide	6.525	6.467	0.058	1315198	0.2000	0.2044	
5 Nitrate as N	7.075	6.925	0.150	7977650	0.2000	0.2013	
6 Sulfate	9.717	9.350	0.367	11957411	1.00	1.01	
7 Orthophosphate as P	12.075	11.775	0.300	5354110	0.2000	0.1746	

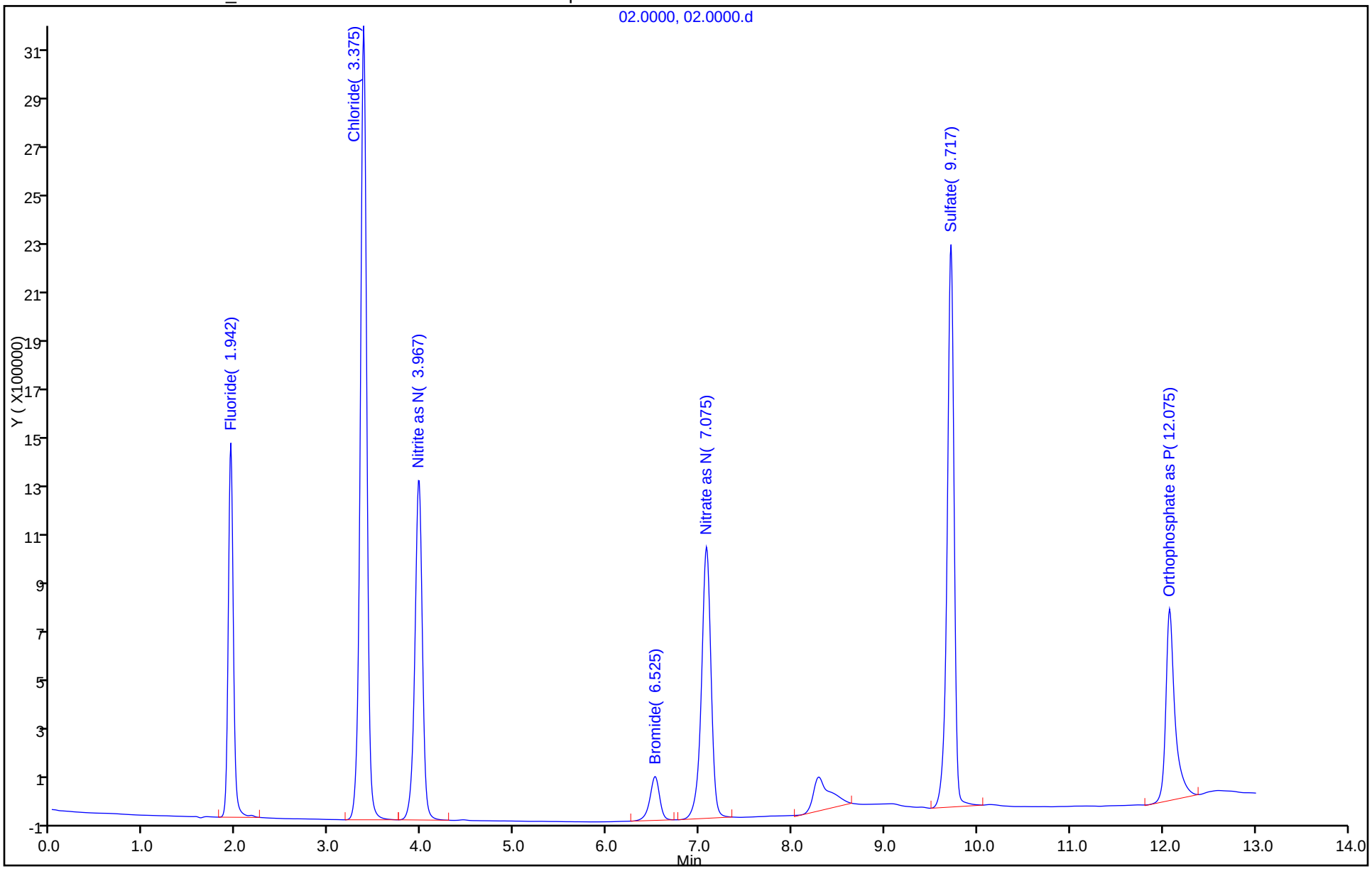
Reagents:

IC CAL cl/so4_00114	Amount Added:	0.02	Units: mL
IC Cal low_00226	Amount Added:	0.02	Units: mL

Report Date: 02-Sep-2016 09:37:32 Chrom Revision: 2.2 04-Mar-2016 14:36:24

TestAmerica Denver

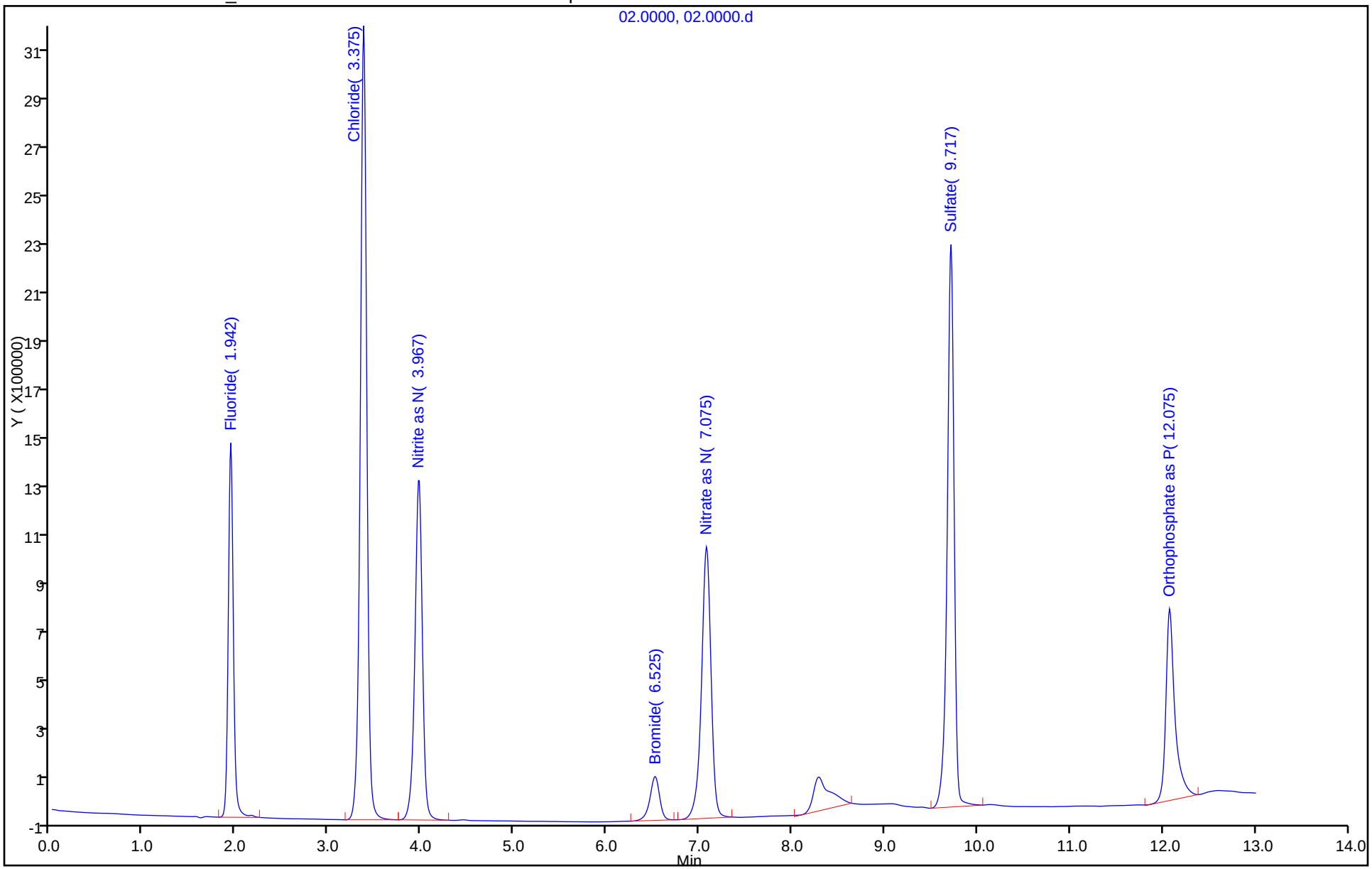
Data File:	\\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\02.0000.d				
Injection Date:	01-Sep-2016 10:05:00	Instrument ID:	WC_IonChrom6	Operator ID:	
Lims ID:	std L1			Worklist Smp#:	2
Client ID:					
Injection Vol:	25.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC6	Limit Group:	Wet - Anions 28D		



Report Date: 02-Sep-2016 09:37:32 Chrom Revision: 2.2 04-Mar-2016 14:36:24

TestAmerica Denver

Data File:	\\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\02.0000.d				
Injection Date:	01-Sep-2016 10:05:00	Instrument ID:	WC_IonChrom6	Operator ID:	
Lims ID:	std L1			Worklist Smp#:	2
Client ID:					
Injection Vol:	25.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC6	Limit Group:	Wet - Anions		



TestAmerica Denver
Area/Height Percent Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\03.0000.d
Lims ID: std L2
Client ID:
Sample Type: IC Calib Level: 2
Inject. Date: 01-Sep-2016 10:23:00 ALS Bottle#: 0 Worklist Smp#: 3
Injection Vol: 25.0 ul Dil. Factor: 1.0000
Sample Info: 280-0050495-003
Operator ID: Instrument ID: WC_IonChrom6
Sublist: chrom-Anions_IC6*sub4

Method: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\Anions_IC6.m
Limit Group: Wet - Anions 28D
Last Update: 02-Sep-2016 09:37:32 Calib Date: 01-Sep-2016 11:34:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\07.0000.d
Process Host: XAWRK011

Detector: 0005
Number of peaks found: 8

RT	Start RT	End RT	Area	Area%	A/Ht Ratio	Flags	Compound Identification
1.933	1.800	2.233	14477092	10.23	3.95		1 Fluoride
3.350	3.125	3.700	39860137	28.18	4.99		2 Chloride
3.933	3.700	4.325	19870472	14.05	5.84		3 Nitrite as N
6.483	6.192	6.725	3396496	2.40	7.45		4 Bromide
7.042	6.733	7.358	20387742	14.41	7.45		5 Nitrate as N
8.300	8.083	8.650	1843581	1.30	12.90		
9.733	9.492	10.117	29845443	21.10	5.23		6 Sulfate
12.125	11.658	12.992	11772964	8.32	7.71		7 Orthophosphate as P
			141453927			Totals	

Total Unknown Area% = 1.30

Flag Legend
M - Manually Integrated
A - User Assigned Compound
B - Overlapped Base Peak
O - Overlapping Peak
e - Potential Peak Saturation

TestAmerica Denver
Area/Height Percent Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\03.0000.d
Lims ID: std L2
Client ID:
Sample Type: IC Calib Level: 2
Inject. Date: 01-Sep-2016 10:23:00 ALS Bottle#: 0 Worklist Smp#: 3
Injection Vol: 25.0 ul Dil. Factor: 1.0000
Sample Info: 280-0050495-003
Operator ID: Instrument ID: WC_IonChrom6
Sublist: chrom-Anions_IC6*sub4

Method: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\Anions_IC6.m
Limit Group: Wet - Anions
Last Update: 02-Sep-2016 09:37:32 Calib Date: 01-Sep-2016 11:34:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\07.0000.d
Process Host: XAWRK011

Detector: 0005
Number of peaks found: 8

RT	Start RT	End RT	Area	Area%	A/Ht Ratio	Flags	Compound Identification
1.933	1.800	2.233	14477092	10.23	3.95		1 Fluoride
3.350	3.125	3.700	39860137	28.18	4.99		2 Chloride
3.933	3.700	4.325	19870472	14.05	5.84		3 Nitrite as N
6.483	6.192	6.725	3396496	2.40	7.45		4 Bromide
7.042	6.733	7.358	20387742	14.41	7.45		5 Nitrate as N
8.300	8.083	8.650	1843581	1.30	12.90		
9.733	9.492	10.117	29845443	21.10	5.23		6 Sulfate
12.125	11.658	12.992	11772964	8.32	7.71		7 Orthophosphate as P
			141453927			Totals	

Total Unknown Area% = 1.30

Flag Legend
M - Manually Integrated
A - User Assigned Compound
B - Overlapped Base Peak
O - Overlapping Peak
e - Potential Peak Saturation

TestAmerica Denver
Target Compound Quantitation Report

Data File:	\\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\03.0000.d				
Lims ID:	std L2				
Client ID:					
Sample Type:	IC	Calib Level:	2		
Inject. Date:	01-Sep-2016 10:23:00	ALS Bottle#:	0	Worklist Smp#:	3
Injection Vol:	25.0 ul	Dil. Factor:	1.0000		
Sample Info:	280-0050495-003				
Operator ID:		Instrument ID:	WC_IonChrom6		
Sublist:	chrom-Anions_IC6*sub4				
Method:	\\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\Anions_IC6.m				
Limit Group:	Wet - Anions				
Last Update:	02-Sep-2016 09:37:32	Calib Date:	01-Sep-2016 11:34:00		
Integrator:	Falcon				
Quant Method:	External Standard	Quant By:	Initial Calibration		
Last ICal File:	\\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\07.0000.d				
Column 1 :			Det: 0005		
Process Host:	XAWRK011				

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride	1.933	1.958	-0.025	14477092	0.5000	0.5123	
2 Chloride	3.350	3.342	0.008	39860137	2.50	2.48	
3 Nitrite as N	3.933	3.967	-0.034	19870472	0.5000	0.5110	
4 Bromide	6.483	6.467	0.016	3396496	0.5000	0.4939	
5 Nitrate as N	7.042	6.925	0.117	20387742	0.5000	0.4989	
6 Sulfate	9.733	9.350	0.383	29845443	2.50	2.49	
7 Orthophosphate as P	12.125	11.775	0.350	11772964	0.5000	0.5395	

Reagents:

IC CAL cl/so4_00114	Amount Added:	0.05	Units: mL
IC Cal low_00226	Amount Added:	0.05	Units: mL

TestAmerica Denver
Target Compound Quantitation Report

Data File:	\\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\03.0000.d				
Lims ID:	std L2				
Client ID:					
Sample Type:	IC	Calib Level:	2		
Inject. Date:	01-Sep-2016 10:23:00	ALS Bottle#:	0	Worklist Smp#:	3
Injection Vol:	25.0 ul	Dil. Factor:	1.0000		
Sample Info:	280-0050495-003				
Operator ID:		Instrument ID:	WC_IonChrom6		
Sublist:	chrom-Anions_IC6*sub4				
Method:	\\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\Anions_IC6.m				
Limit Group:	Wet - Anions 28D				
Last Update:	02-Sep-2016 09:37:32	Calib Date:	01-Sep-2016 11:34:00		
Integrator:	Falcon				
Quant Method:	External Standard	Quant By:	Initial Calibration		
Last ICal File:	\\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\07.0000.d				
Column 1 :			Det: 0005		
Process Host:	XAWRK011				

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride	1.933	1.958	-0.025	14477092	0.5000	0.5123	
2 Chloride	3.350	3.342	0.008	39860137	2.50	2.48	
3 Nitrite as N	3.933	3.967	-0.034	19870472	0.5000	0.5110	
4 Bromide	6.483	6.467	0.016	3396496	0.5000	0.4939	
5 Nitrate as N	7.042	6.925	0.117	20387742	0.5000	0.4989	
6 Sulfate	9.733	9.350	0.383	29845443	2.50	2.49	
7 Orthophosphate as P	12.125	11.775	0.350	11772964	0.5000	0.5395	

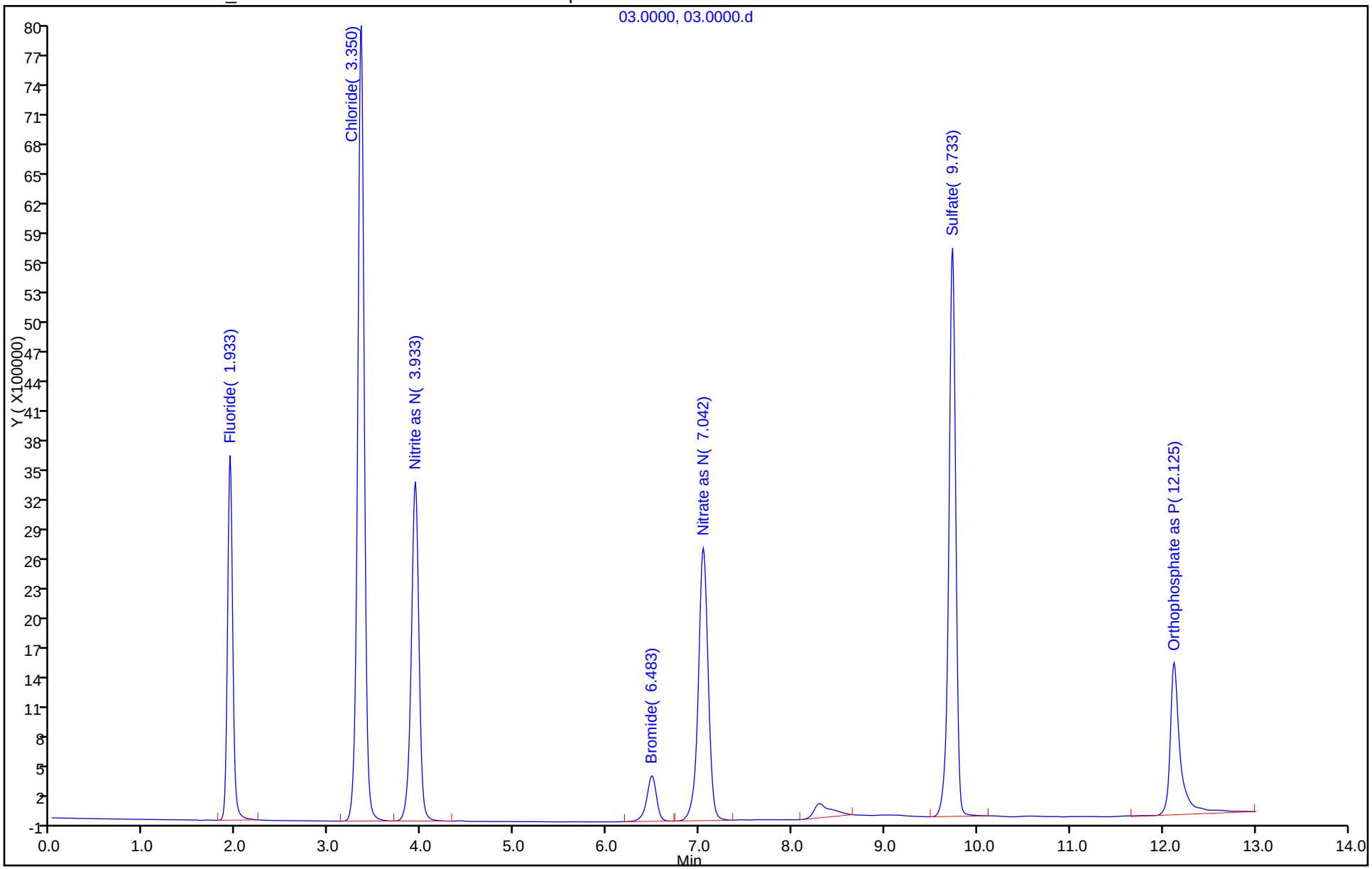
Reagents:

IC CAL cl/so4_00114	Amount Added:	0.05	Units: mL
IC Cal low_00226	Amount Added:	0.05	Units: mL

Report Date: 02-Sep-2016 09:37:32 Chrom Revision: 2.2 04-Mar-2016 14:36:24

TestAmerica Denver

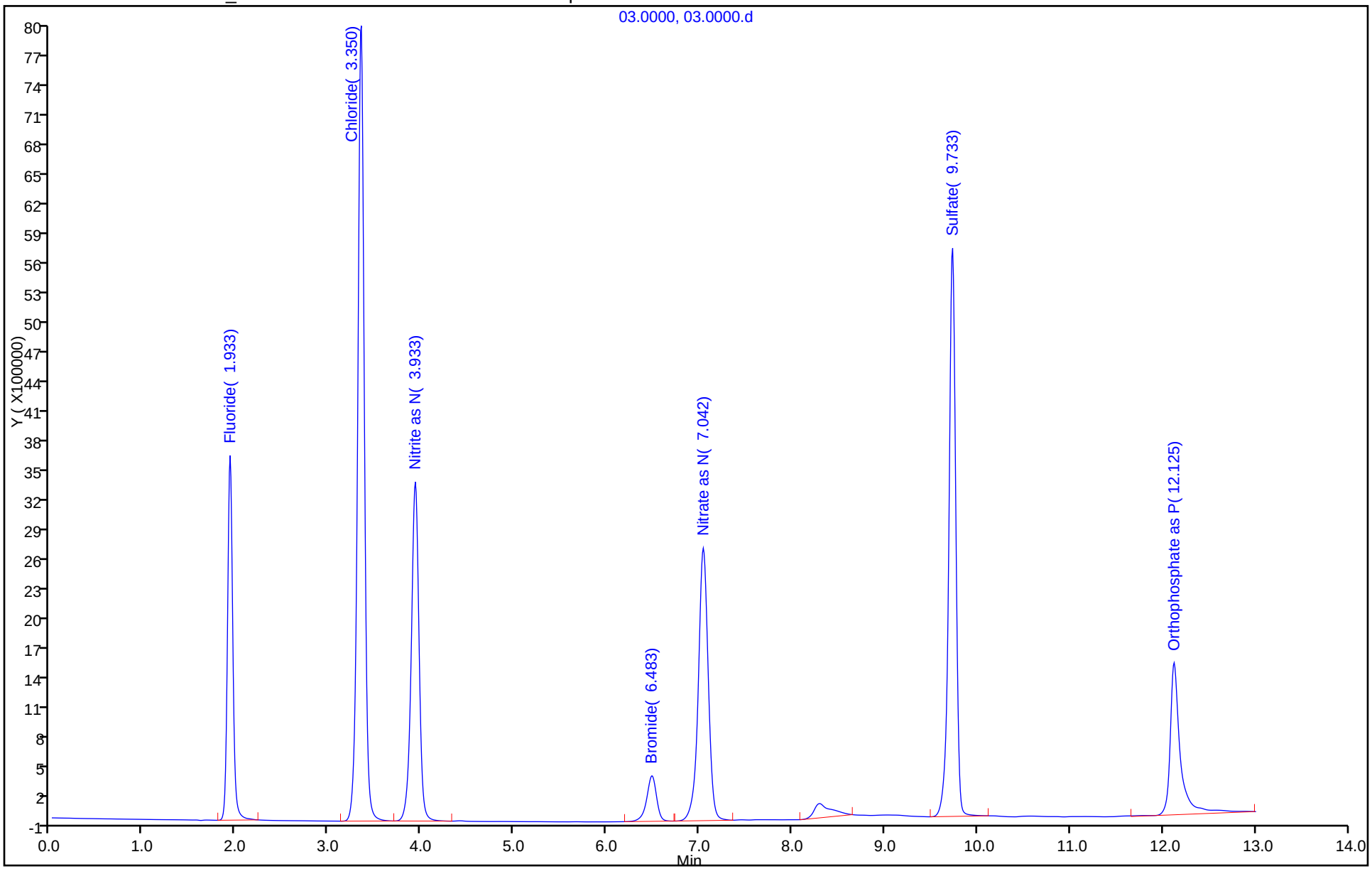
Data File:	\\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\03.0000.d				
Injection Date:	01-Sep-2016 10:23:00	Instrument ID:	WC_IonChrom6	Operator ID:	
Lims ID:	std L2			Worklist Smp#:	3
Client ID:					
Injection Vol:	25.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC6	Limit Group:	Wet - Anions 28D		



Report Date: 02-Sep-2016 09:37:32 Chrom Revision: 2.2 04-Mar-2016 14:36:24

TestAmerica Denver

Data File:	\\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\03.0000.d				
Injection Date:	01-Sep-2016 10:23:00	Instrument ID:	WC_IonChrom6	Operator ID:	
Lims ID:	std L2			Worklist Smp#:	3
Client ID:					
Injection Vol:	25.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC6	Limit Group:	Wet - Anions		



TestAmerica Denver
Area/Height Percent Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\04.0000.d
Lims ID: std L3
Client ID:
Sample Type: IC Calib Level: 3
Inject. Date: 01-Sep-2016 10:41:00 ALS Bottle#: 0 Worklist Smp#: 4
Injection Vol: 25.0 ul Dil. Factor: 1.0000
Sample Info: 280-0050495-004
Misc. Info.: 4 F
Operator ID: Instrument ID: WC_IonChrom6
Sublist: chrom-Anions_IC6*sub4

Method: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\Anions_IC6.m
Limit Group: Wet - Anions 28D
Last Update: 02-Sep-2016 09:37:33 Calib Date: 01-Sep-2016 11:34:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\07.0000.d
Process Host: XAWRK011

Detector: 0005
Number of peaks found: 8

RT	Start RT	End RT	Area	Area%	A/Ht Ratio	Flags	Compound Identification
1.933	1.800	2.267	28635925	10.28	4.05		1 Fluoride
3.333	3.108	3.692	80268745	28.81	5.01		2 Chloride
3.925	3.692	4.617	39673954	14.24	6.04		3 Nitrite as N
6.458	6.133	6.692	6922766	2.48	7.44		4 Bromide
7.000	6.700	7.350	40956704	14.70	7.69		5 Nitrate as N
8.258	8.042	8.550	1745618	0.63	12.23		
9.683	9.442	9.958	59715730	21.43	5.40		6 Sulfate
12.067	11.725	12.992	20730674	7.44	7.60		7 Orthophosphate as P
			278650116			Totals	

Total Unknown Area% = 0.63

Flag Legend
M - Manually Integrated
A - User Assigned Compound
B - Overlapped Base Peak
O - Overlapping Peak
e - Potential Peak Saturation

TestAmerica Denver
Area/Height Percent Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\04.0000.d
Lims ID: std L3
Client ID:
Sample Type: IC Calib Level: 3
Inject. Date: 01-Sep-2016 10:41:00 ALS Bottle#: 0 Worklist Smp#: 4
Injection Vol: 25.0 ul Dil. Factor: 1.0000
Sample Info: 280-0050495-004
Misc. Info.: 4 F
Operator ID: Instrument ID: WC_IonChrom6
Sublist: chrom-Anions_IC6*sub4

Method: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\Anions_IC6.m
Limit Group: Wet - Anions
Last Update: 02-Sep-2016 09:37:33 Calib Date: 01-Sep-2016 11:34:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\07.0000.d
Process Host: XAWRK011

Detector: 0005
Number of peaks found: 8

RT	Start RT	End RT	Area	Area%	A/Ht Ratio	Flags	Compound Identification
1.933	1.800	2.267	28635925	10.28	4.05		1 Fluoride
3.333	3.108	3.692	80268745	28.81	5.01		2 Chloride
3.925	3.692	4.617	39673954	14.24	6.04		3 Nitrite as N
6.458	6.133	6.692	6922766	2.48	7.44		4 Bromide
7.000	6.700	7.350	40956704	14.70	7.69		5 Nitrate as N
8.258	8.042	8.550	1745618	0.63	12.23		
9.683	9.442	9.958	59715730	21.43	5.40		6 Sulfate
12.067	11.725	12.992	20730674	7.44	7.60		7 Orthophosphate as P
			278650116			Totals	

Total Unknown Area% = 0.63

Flag Legend
M - Manually Integrated
A - User Assigned Compound
B - Overlapped Base Peak
O - Overlapping Peak
e - Potential Peak Saturation

TestAmerica Denver
Target Compound Quantitation Report

Data File:	\\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\04.0000.d				
Lims ID:	std L3				
Client ID:					
Sample Type:	IC	Calib Level:	3		
Inject. Date:	01-Sep-2016 10:41:00	ALS Bottle#:	0	Worklist Smp#:	4
Injection Vol:	25.0 ul	Dil. Factor:	1.0000		
Sample Info:	280-0050495-004				
Misc. Info.:	4 F				
Operator ID:		Instrument ID:	WC_IonChrom6		
Sublist:	chrom-Anions_IC6*sub4				
Method:	\\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\Anions_IC6.m				
Limit Group:	Wet - Anions				
Last Update:	02-Sep-2016 09:37:33	Calib Date:	01-Sep-2016 11:34:00		
Integrator:	Falcon				
Quant Method:	External Standard	Quant By:	Initial Calibration		
Last ICal File:	\\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\07.0000.d				
Column 1 :			Det: 0005		
Process Host:	XAWRK011				

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride	1.933	1.958	-0.025	28635925	1.00	1.06	
2 Chloride	3.333	3.342	-0.009	80268745	5.00	4.95	
3 Nitrite as N	3.925	3.967	-0.042	39673954	1.00	1.06	
4 Bromide	6.458	6.467	-0.009	6922766	1.00	0.9844	
5 Nitrate as N	7.000	6.925	0.075	40956704	1.00	0.99	
6 Sulfate	9.683	9.350	0.333	59715730	5.00	4.96	
7 Orthophosphate as P	12.067	11.775	0.292	20730674	1.00	1.05	

Reagents:

IC CAL cl/so4_00114	Amount Added:	0.10	Units: mL
IC Cal low_00226	Amount Added:	0.10	Units: mL

TestAmerica Denver
Target Compound Quantitation Report

Data File:	\\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\04.0000.d				
Lims ID:	std L3				
Client ID:					
Sample Type:	IC	Calib Level:	3		
Inject. Date:	01-Sep-2016 10:41:00	ALS Bottle#:	0	Worklist Smp#:	4
Injection Vol:	25.0 ul	Dil. Factor:	1.0000		
Sample Info:	280-0050495-004				
Misc. Info.:	4 F				
Operator ID:		Instrument ID:	WC_IonChrom6		
Sublist:	chrom-Anions_IC6*sub4				
Method:	\\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\Anions_IC6.m				
Limit Group:	Wet - Anions 28D				
Last Update:	02-Sep-2016 09:37:33	Calib Date:	01-Sep-2016 11:34:00		
Integrator:	Falcon				
Quant Method:	External Standard	Quant By:	Initial Calibration		
Last ICal File:	\\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\07.0000.d				
Column 1 :			Det: 0005		
Process Host:	XAWRK011				

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride	1.933	1.958	-0.025	28635925	1.00	1.06	
2 Chloride	3.333	3.342	-0.009	80268745	5.00	4.95	
3 Nitrite as N	3.925	3.967	-0.042	39673954	1.00	1.06	
4 Bromide	6.458	6.467	-0.009	6922766	1.00	0.9844	
5 Nitrate as N	7.000	6.925	0.075	40956704	1.00	0.99	
6 Sulfate	9.683	9.350	0.333	59715730	5.00	4.96	
7 Orthophosphate as P	12.067	11.775	0.292	20730674	1.00	1.05	

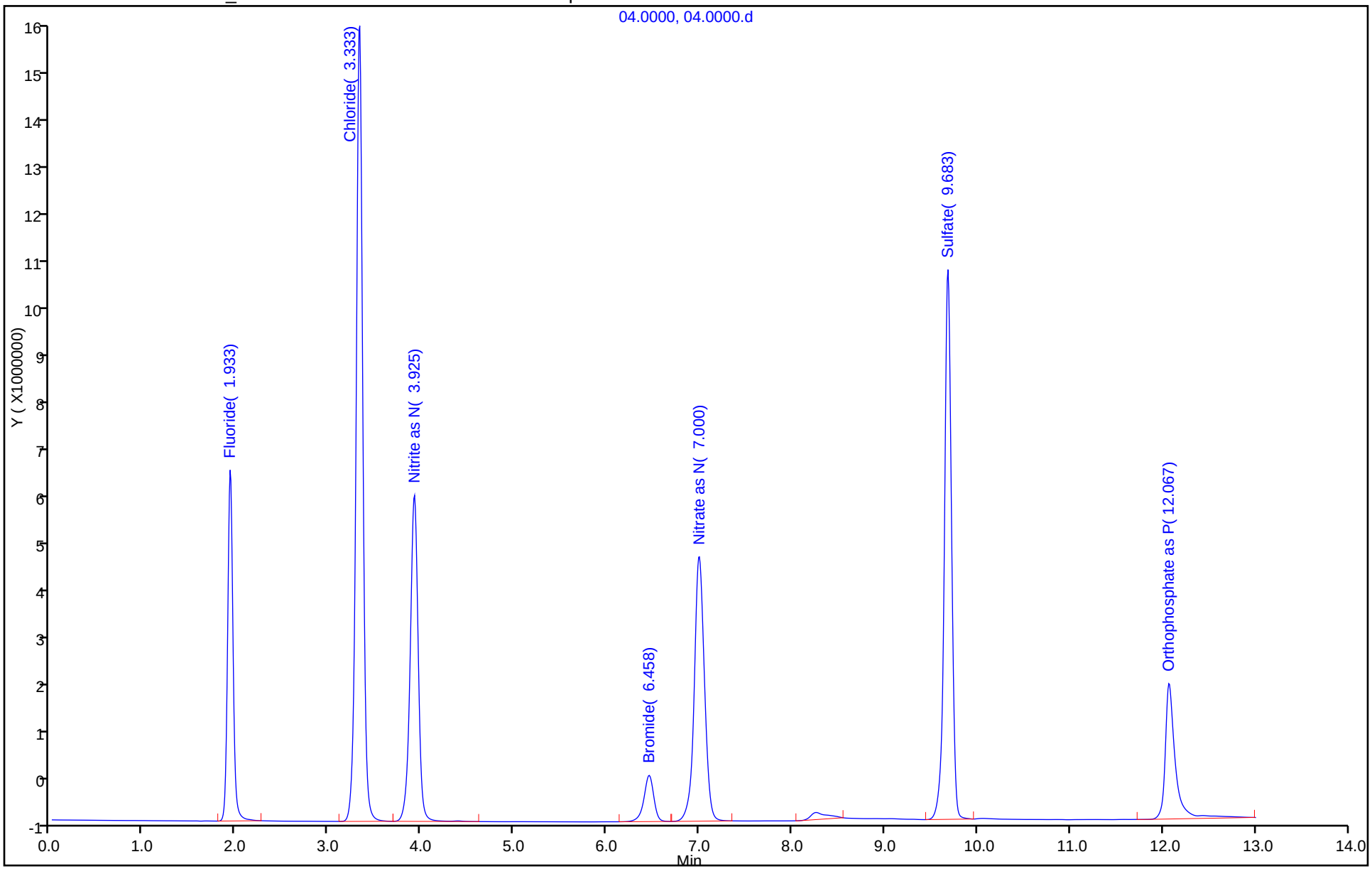
Reagents:

IC CAL cl/so4_00114	Amount Added:	0.10	Units: mL
IC Cal low_00226	Amount Added:	0.10	Units: mL

Report Date: 02-Sep-2016 09:37:33 Chrom Revision: 2.2 04-Mar-2016 14:36:24

TestAmerica Denver

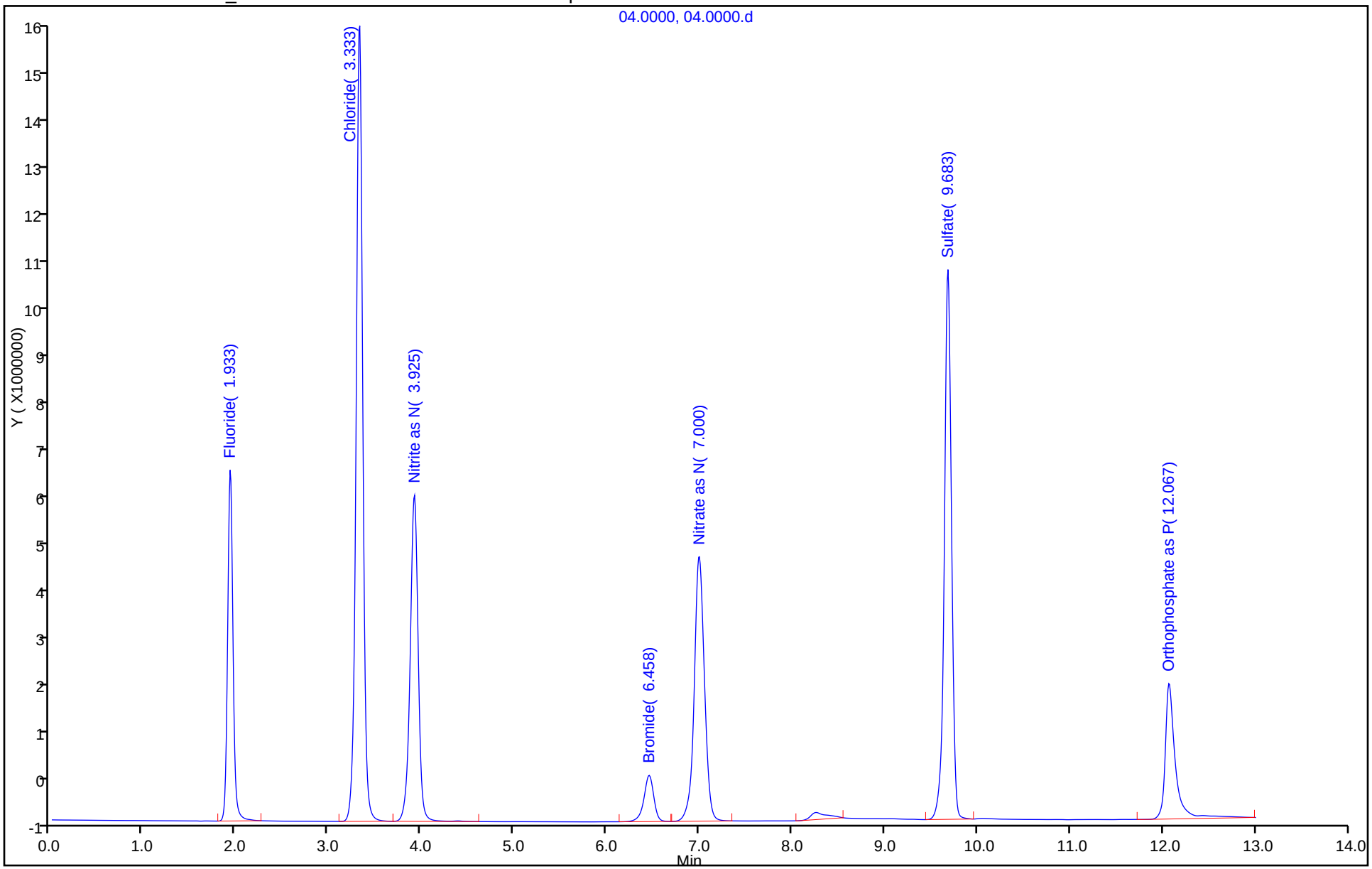
Data File:	\\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\04.0000.d				
Injection Date:	01-Sep-2016 10:41:00	Instrument ID:	WC_IonChrom6	Operator ID:	
Lims ID:	std L3			Worklist Smp#:	4
Client ID:					
Injection Vol:	25.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC6	Limit Group:	Wet - Anions 28D		



Report Date: 02-Sep-2016 09:37:33 Chrom Revision: 2.2 04-Mar-2016 14:36:24

TestAmerica Denver

Data File:	\\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\04.0000.d				
Injection Date:	01-Sep-2016 10:41:00	Instrument ID:	WC_IonChrom6	Operator ID:	
Lims ID:	std L3			Worklist Smp#:	4
Client ID:					
Injection Vol:	25.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC6	Limit Group:	Wet - Anions		



TestAmerica Denver
Area/Height Percent Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\05.0000.d
Lims ID: std L4
Client ID:
Sample Type: IC Calib Level: 4
Inject. Date: 01-Sep-2016 10:58:00 ALS Bottle#: 0 Worklist Smp#: 5
Injection Vol: 25.0 ul Dil. Factor: 1.0000
Sample Info: 280-0050495-005
Misc. Info.: 5 F
Operator ID: Instrument ID: WC_IonChrom6
Sublist: chrom-Anions_IC6*sub4

Method: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\Anions_IC6.m
Limit Group: Wet - Anions
Last Update: 02-Sep-2016 09:37:34 Calib Date: 01-Sep-2016 11:34:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\07.0000.d
Process Host: XAWRK011

Detector: 0005
Number of peaks found: 8

RT	Start RT	End RT	Area	Area%	A/Ht Ratio	Flags	Compound Identification
1.950	1.783	2.483	109174197	4.87	4.66		1 Fluoride
3.317	3.108	3.692	981188481	43.73	5.01		2 Chloride
3.917	3.692	4.850	152488413	6.80	7.11		3 Nitrite as N
6.425	6.117	6.633	28771580	1.28	7.43		4 Bromide
6.908	6.633	7.433	167184385	7.45	9.61		5 Nitrate as N
8.258	8.042	8.558	1815685	0.08	12.07		
9.492	9.242	10.208	729710885	32.52	10.94		6 Sulfate
11.992	11.675	13.000	73447736	3.27	9.48		7 Orthophosphate as P
			2243781362			Totals	

Total Unknown Area% = 0.08

Flag Legend
M - Manually Integrated
A - User Assigned Compound
B - Overlapped Base Peak
O - Overlapping Peak
e - Potential Peak Saturation

TestAmerica Denver
Area/Height Percent Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\05.0000.d
Lims ID: std L4
Client ID:
Sample Type: IC Calib Level: 4
Inject. Date: 01-Sep-2016 10:58:00 ALS Bottle#: 0 Worklist Smp#: 5
Injection Vol: 25.0 ul Dil. Factor: 1.0000
Sample Info: 280-0050495-005
Misc. Info.: 5 F
Operator ID: Instrument ID: WC_IonChrom6
Sublist: chrom-Anions_IC6*sub4

Method: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\Anions_IC6.m
Limit Group: Wet - Anions 28D
Last Update: 02-Sep-2016 09:37:34 Calib Date: 01-Sep-2016 11:34:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\07.0000.d
Process Host: XAWRK011

Detector: 0005
Number of peaks found: 8

RT	Start RT	End RT	Area	Area%	A/Ht Ratio	Flags	Compound Identification
1.950	1.783	2.483	109174197	4.87	4.66		1 Fluoride
3.317	3.108	3.692	981188481	43.73	5.01		2 Chloride
3.917	3.692	4.850	152488413	6.80	7.11		3 Nitrite as N
6.425	6.117	6.633	28771580	1.28	7.43		4 Bromide
6.908	6.633	7.433	167184385	7.45	9.61		5 Nitrate as N
8.258	8.042	8.558	1815685	0.08	12.07		
9.492	9.242	10.208	729710885	32.52	10.94		6 Sulfate
11.992	11.675	13.000	73447736	3.27	9.48		7 Orthophosphate as P
			2243781362			Totals	

Total Unknown Area% = 0.08

Flag Legend
M - Manually Integrated
A - User Assigned Compound
B - Overlapped Base Peak
O - Overlapping Peak
e - Potential Peak Saturation

TestAmerica Denver
IC, ICal Standard Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\05.0000.d
Lims ID: std L4
Client ID:
Sample Type: IC Calib Level: 4
Inject. Date: 01-Sep-2016 10:58:00 ALS Bottle#: 0 Worklist Smp#: 5
Injection Vol: 25.0 ul Dil. Factor: 1.0000
Sample Info: 280-0050495-005
Misc. Info.: 5 F
Operator ID: Instrument ID: WC_IonChrom6
Sublist: chrom-Anions_IC6*sub4

Method: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\Anions_IC6.m
Limit Group: Wet - Anions
Last Update: 02-Sep-2016 09:37:34 Calib Date: 01-Sep-2016 11:34:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\07.0000.d

Column 1 : Det: 0005
Process Host: XAWRK011

Start Cal Date: 01-Sep-2016 10:05:00
End Cal Date: 01-Sep-2016 11:34:00

Compound	Standard RRF/Amt	DLT RT	Ccal Amt	Ccal RF	%D	Max. %D	%Rec
1 Fluoride	4.00	0.0	4.17	27293549	4.3	0	104
2 Chloride	60.0	0.0	60.0	16353141	0.003	0	100
3 Nitrite as N	4.00	0.0	4.18	38122103	4.4	0	104
4 Bromide	4.00	0.0	4.02	7192895	0.6	0	101
5 Nitrate as N	4.00	0.0	4.02	41796096	0.5	0	100
6 Sulfate	60.0	0.0	60.4	12161848	0.7	0	101
7 Orthophosphate as P	4.00	0.0	4.05	18361934	1.2	0	101

TestAmerica Denver
IC, ICal Standard Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\05.0000.d
Lims ID: std L4
Client ID:
Sample Type: IC Calib Level: 4
Inject. Date: 01-Sep-2016 10:58:00 ALS Bottle#: 0 Worklist Smp#: 5
Injection Vol: 25.0 ul Dil. Factor: 1.0000
Sample Info: 280-0050495-005
Misc. Info.: 5 F
Operator ID: Instrument ID: WC_IonChrom6
Sublist: chrom-Anions_IC6*sub4

Method: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\Anions_IC6.m
Limit Group: Wet - Anions 28D
Last Update: 02-Sep-2016 09:37:34 Calib Date: 01-Sep-2016 11:34:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\07.0000.d

Column 1 : Det: 0005
Process Host: XAWRK011

Start Cal Date: 01-Sep-2016 10:05:00
End Cal Date: 01-Sep-2016 11:34:00

Compound	Standard RRF/Amt	DLT RT	Ccal Amt	Ccal RF	%D	Max. %D	%Rec
1 Fluoride	4.00	0.0	4.17	27293549	4.3	0	104
2 Chloride	60.0	0.0	60.0	16353141	0.003	0	100
3 Nitrite as N	4.00	0.0	4.18	38122103	4.4	0	104
4 Bromide	4.00	0.0	4.02	7192895	0.6	0	101
5 Nitrate as N	4.00	0.0	4.02	41796096	0.5	0	100
6 Sulfate	60.0	0.0	60.4	12161848	0.7	0	101
7 Orthophosphate as P	4.00	0.0	4.05	18361934	1.2	0	101

TestAmerica Denver
Target Compound Quantitation Report

Data File:	\\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\05.0000.d				
Lims ID:	std L4				
Client ID:					
Sample Type:	IC	Calib Level:	4		
Inject. Date:	01-Sep-2016 10:58:00	ALS Bottle#:	0	Worklist Smp#:	5
Injection Vol:	25.0 ul	Dil. Factor:	1.0000		
Sample Info:	280-0050495-005				
Misc. Info.:	5 F				
Operator ID:		Instrument ID:	WC_IonChrom6		
Sublist:	chrom-Anions_IC6*sub4				
Method:	\\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\Anions_IC6.m				
Limit Group:	Wet - Anions 28D				
Last Update:	02-Sep-2016 09:37:34	Calib Date:	01-Sep-2016 11:34:00		
Integrator:	Falcon				
Quant Method:	External Standard	Quant By:	Initial Calibration		
Last ICal File:	\\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\07.0000.d				
Column 1 :			Det: 0005		
Process Host:	XAWRK011				

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride	1.950	1.950	0.000	109174197	4.00	4.17	
2 Chloride	3.317	3.317	0.000	981188481	60.0	60.0	
3 Nitrite as N	3.917	3.917	0.000	152488413	4.00	4.18	
4 Bromide	6.425	6.425	0.000	28771580	4.00	4.02	
5 Nitrate as N	6.908	6.908	0.000	167184385	4.00	4.02	
6 Sulfate	9.492	9.492	0.000	729710885	60.0	60.4	
7 Orthophosphate as P	11.992	11.992	0.000	73447736	4.00	4.05	

Reagents:

IC CAL cl/so4_00114	Amount Added:	1.20	Units: mL
IC Cal low_00226	Amount Added:	0.40	Units: mL

TestAmerica Denver
Target Compound Quantitation Report

Data File:	\\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\05.0000.d				
Lims ID:	std L4				
Client ID:					
Sample Type:	IC	Calib Level:	4		
Inject. Date:	01-Sep-2016 10:58:00	ALS Bottle#:	0	Worklist Smp#:	5
Injection Vol:	25.0 ul	Dil. Factor:	1.0000		
Sample Info:	280-0050495-005				
Misc. Info.:	5 F				
Operator ID:		Instrument ID:	WC_IonChrom6		
Sublist:	chrom-Anions_IC6*sub4				
Method:	\\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\Anions_IC6.m				
Limit Group:	Wet - Anions				
Last Update:	02-Sep-2016 09:37:34	Calib Date:	01-Sep-2016 11:34:00		
Integrator:	Falcon				
Quant Method:	External Standard	Quant By:	Initial Calibration		
Last ICal File:	\\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\07.0000.d				
Column 1 :			Det: 0005		
Process Host:	XAWRK011				

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride	1.950	1.950	0.000	109174197	4.00	4.17	
2 Chloride	3.317	3.317	0.000	981188481	60.0	60.0	
3 Nitrite as N	3.917	3.917	0.000	152488413	4.00	4.18	
4 Bromide	6.425	6.425	0.000	28771580	4.00	4.02	
5 Nitrate as N	6.908	6.908	0.000	167184385	4.00	4.02	
6 Sulfate	9.492	9.492	0.000	729710885	60.0	60.4	
7 Orthophosphate as P	11.992	11.992	0.000	73447736	4.00	4.05	

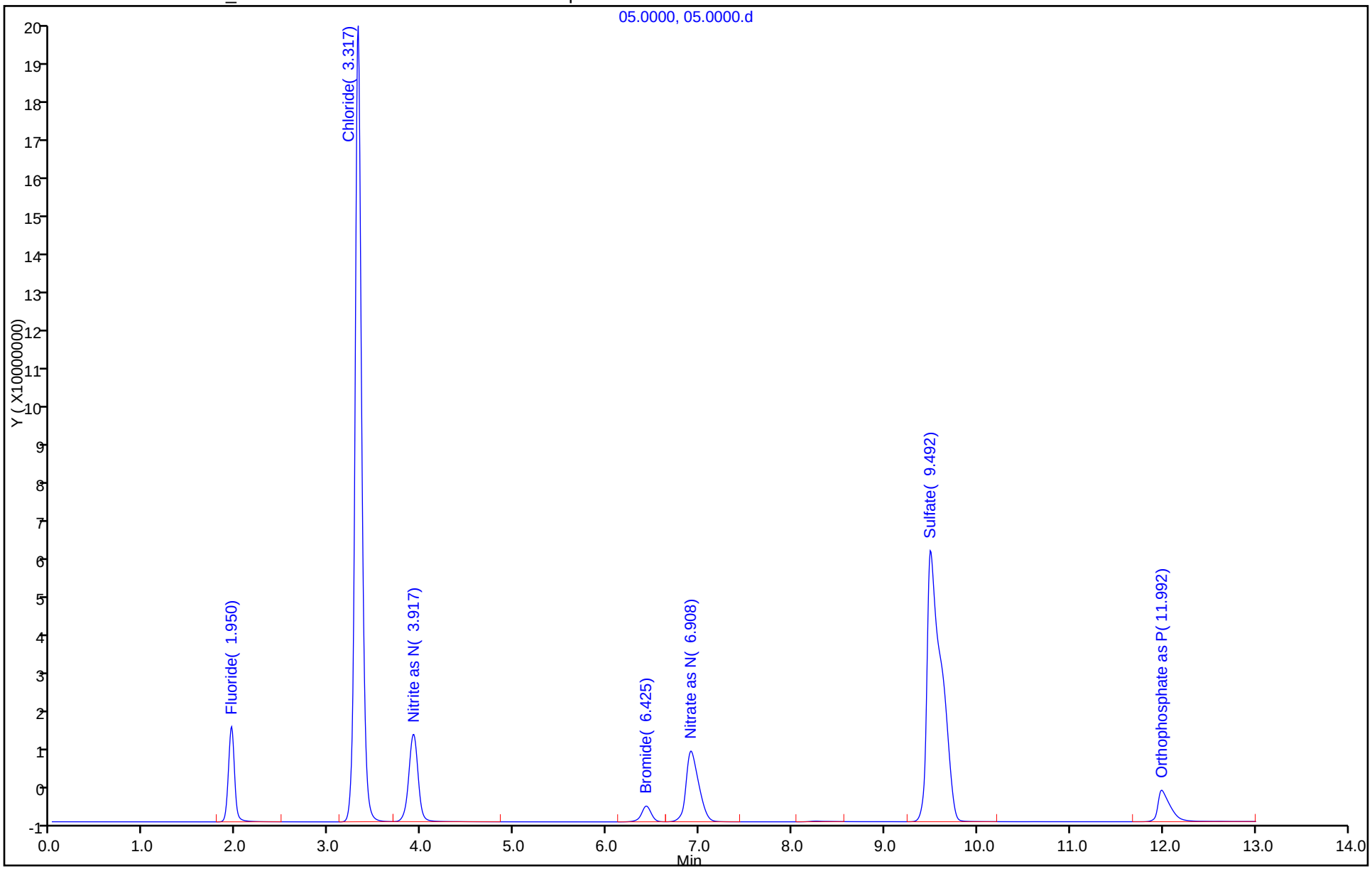
Reagents:

IC CAL cl/so4_00114	Amount Added:	1.20	Units: mL
IC Cal low_00226	Amount Added:	0.40	Units: mL

Report Date: 02-Sep-2016 09:37:35 Chrom Revision: 2.2 04-Mar-2016 14:36:24

TestAmerica Denver

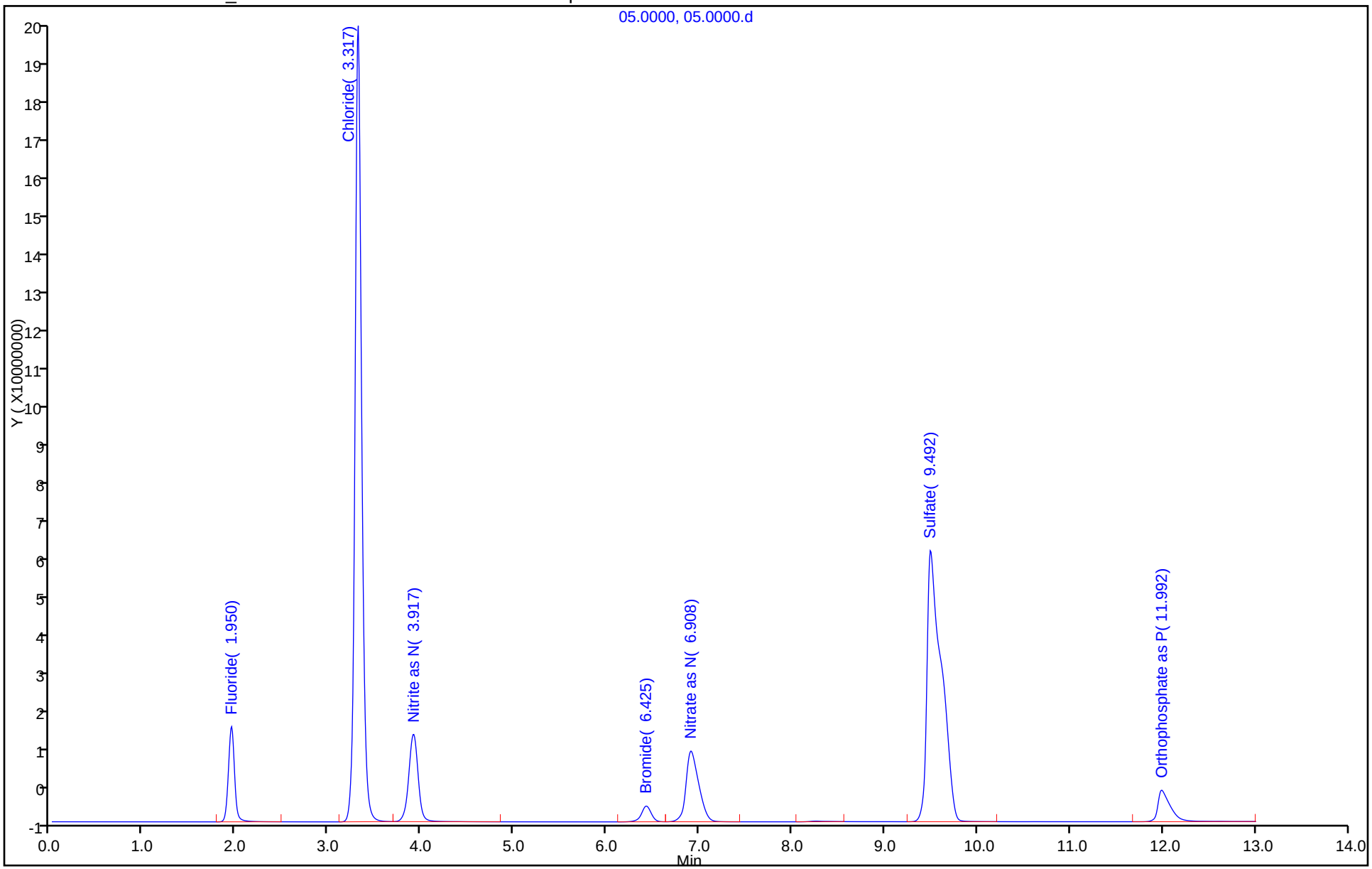
Data File:	\\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\05.0000.d				
Injection Date:	01-Sep-2016 10:58:00	Instrument ID:	WC_IonChrom6	Operator ID:	
Lims ID:	std L4			Worklist Smp#:	5
Client ID:					
Injection Vol:	25.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC6	Limit Group:	Wet - Anions 28D		



Report Date: 02-Sep-2016 09:37:35 Chrom Revision: 2.2 04-Mar-2016 14:36:24

TestAmerica Denver

Data File:	\\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\05.0000.d				
Injection Date:	01-Sep-2016 10:58:00	Instrument ID:	WC_IonChrom6	Operator ID:	
Lims ID:	std L4			Worklist Smp#:	5
Client ID:					
Injection Vol:	25.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC6	Limit Group:	Wet - Anions		



TestAmerica Denver
Area/Height Percent Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\06.0000.d
Lims ID: std L5
Client ID:
Sample Type: IC Calib Level: 5
Inject. Date: 01-Sep-2016 11:16:00 ALS Bottle#: 0 Worklist Smp#: 6
Injection Vol: 25.0 ul Dil. Factor: 1.0000
Sample Info: 280-0050495-006
Misc. Info.: 6 F
Operator ID: Instrument ID: WC_IonChrom6
Sublist: chrom-Anions_IC6*sub4

Method: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\Anions_IC6.m
Limit Group: Wet - Anions
Last Update: 02-Sep-2016 09:37:35 Calib Date: 01-Sep-2016 11:34:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\07.0000.d
Process Host: XAWRK011

Detector: 0005
Number of peaks found: 8

RT	Start RT	End RT	Area	Area%	A/Ht Ratio	Flags	Compound Identification
1.950	1.767	2.633	207349043	4.65	5.29		1 Fluoride
3.292	3.083	3.675	1971418688	44.19	5.17		2 Chloride
3.900	3.675	5.083	291390653	6.53	8.17		3 Nitrite as N
6.400	6.100	6.600	57472069	1.29	7.67		4 Bromide
6.850	6.600	7.500	333499204	7.48	11.92		5 Nitrate as N
8.342	8.117	8.650	2027693	0.05	12.93		
9.542	9.300	10.408	1455811021	32.63	14.33		6 Sulfate
12.358	12.133	13.000	141967252	3.18	10.13		7 Orthophosphate as P
			4460935623			Totals	

Total Unknown Area% = 0.05

Flag Legend
M - Manually Integrated
A - User Assigned Compound
B - Overlapped Base Peak
O - Overlapping Peak
e - Potential Peak Saturation

TestAmerica Denver
Area/Height Percent Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\06.0000.d
Lims ID: std L5
Client ID:
Sample Type: IC Calib Level: 5
Inject. Date: 01-Sep-2016 11:16:00 ALS Bottle#: 0 Worklist Smp#: 6
Injection Vol: 25.0 ul Dil. Factor: 1.0000
Sample Info: 280-0050495-006
Misc. Info.: 6 F
Operator ID: Instrument ID: WC_IonChrom6
Sublist: chrom-Anions_IC6*sub4

Method: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\Anions_IC6.m
Limit Group: Wet - Anions 28D
Last Update: 02-Sep-2016 09:37:35 Calib Date: 01-Sep-2016 11:34:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\07.0000.d
Process Host: XAWRK011

Detector: 0005
Number of peaks found: 8

RT	Start RT	End RT	Area	Area%	A/Ht Ratio	Flags	Compound Identification
1.950	1.767	2.633	207349043	4.65	5.29		1 Fluoride
3.292	3.083	3.675	1971418688	44.19	5.17		2 Chloride
3.900	3.675	5.083	291390653	6.53	8.17		3 Nitrite as N
6.400	6.100	6.600	57472069	1.29	7.67		4 Bromide
6.850	6.600	7.500	333499204	7.48	11.92		5 Nitrate as N
8.342	8.117	8.650	2027693	0.05	12.93		
9.542	9.300	10.408	1455811021	32.63	14.33		6 Sulfate
12.358	12.133	13.000	141967252	3.18	10.13		7 Orthophosphate as P
			4460935623			Totals	

Total Unknown Area% = 0.05

Flag Legend
M - Manually Integrated
A - User Assigned Compound
B - Overlapped Base Peak
O - Overlapping Peak
e - Potential Peak Saturation

TestAmerica Denver
Target Compound Quantitation Report

Data File:	\\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\06.0000.d				
Lims ID:	std L5				
Client ID:					
Sample Type:	IC	Calib Level:	5		
Inject. Date:	01-Sep-2016 11:16:00	ALS Bottle#:	0	Worklist Smp#:	6
Injection Vol:	25.0 ul	Dil. Factor:	1.0000		
Sample Info:	280-0050495-006				
Misc. Info.:	6 F				
Operator ID:		Instrument ID:	WC_IonChrom6		
Sublist:	chrom-Anions_IC6*sub4				
Method:	\\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\Anions_IC6.m				
Limit Group:	Wet - Anions				
Last Update:	02-Sep-2016 09:37:35	Calib Date:	01-Sep-2016 11:34:00		
Integrator:	Falcon				
Quant Method:	External Standard	Quant By:	Initial Calibration		
Last ICal File:	\\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\07.0000.d				
Column 1 :			Det: 0005		
Process Host:	XAWRK011				

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride	1.950	1.950	0.000	207349043	8.00	7.97	
2 Chloride	3.292	3.317	-0.025	1971418688	120.0	120.5	
3 Nitrite as N	3.900	3.917	-0.017	291390653	8.00	8.02	
4 Bromide	6.400	6.425	-0.025	57472069	8.00	8.02	
5 Nitrate as N	6.850	6.908	-0.058	333499204	8.00	8.01	
6 Sulfate	9.542	9.492	0.050	1455811021	120.0	120.5	
7 Orthophosphate as P	12.358	11.992	0.366	141967252	8.00	7.94	

Reagents:

IC CAL cl/so4_00114	Amount Added:	2.40	Units: mL
IC Cal low_00226	Amount Added:	0.80	Units: mL

TestAmerica Denver
Target Compound Quantitation Report

Data File:	\\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\06.0000.d				
Lims ID:	std L5				
Client ID:					
Sample Type:	IC	Calib Level:	5		
Inject. Date:	01-Sep-2016 11:16:00	ALS Bottle#:	0	Worklist Smp#:	6
Injection Vol:	25.0 ul	Dil. Factor:	1.0000		
Sample Info:	280-0050495-006				
Misc. Info.:	6 F				
Operator ID:		Instrument ID:	WC_IonChrom6		
Sublist:	chrom-Anions_IC6*sub4				
Method:	\\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\Anions_IC6.m				
Limit Group:	Wet - Anions 28D				
Last Update:	02-Sep-2016 09:37:35	Calib Date:	01-Sep-2016 11:34:00		
Integrator:	Falcon				
Quant Method:	External Standard	Quant By:	Initial Calibration		
Last ICal File:	\\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\07.0000.d				
Column 1 :			Det: 0005		
Process Host:	XAWRK011				

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride	1.950	1.950	0.000	207349043	8.00	7.97	
2 Chloride	3.292	3.317	-0.025	1971418688	120.0	120.5	
3 Nitrite as N	3.900	3.917	-0.017	291390653	8.00	8.02	
4 Bromide	6.400	6.425	-0.025	57472069	8.00	8.02	
5 Nitrate as N	6.850	6.908	-0.058	333499204	8.00	8.01	
6 Sulfate	9.542	9.492	0.050	1455811021	120.0	120.5	
7 Orthophosphate as P	12.358	11.992	0.366	141967252	8.00	7.94	

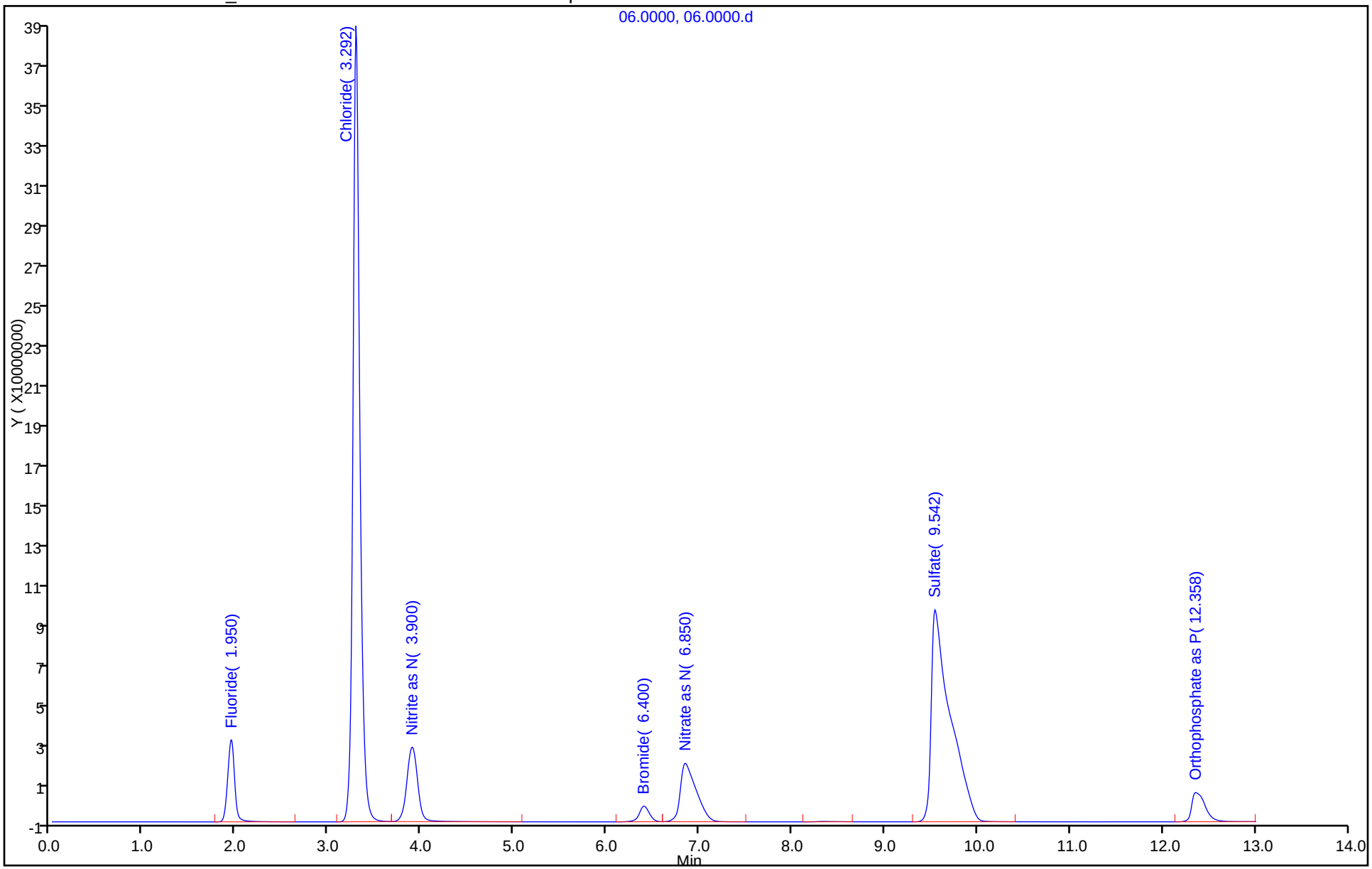
Reagents:

IC CAL cl/so4_00114	Amount Added:	2.40	Units: mL
IC Cal low_00226	Amount Added:	0.80	Units: mL

Report Date: 02-Sep-2016 09:37:36 Chrom Revision: 2.2 04-Mar-2016 14:36:24

TestAmerica Denver

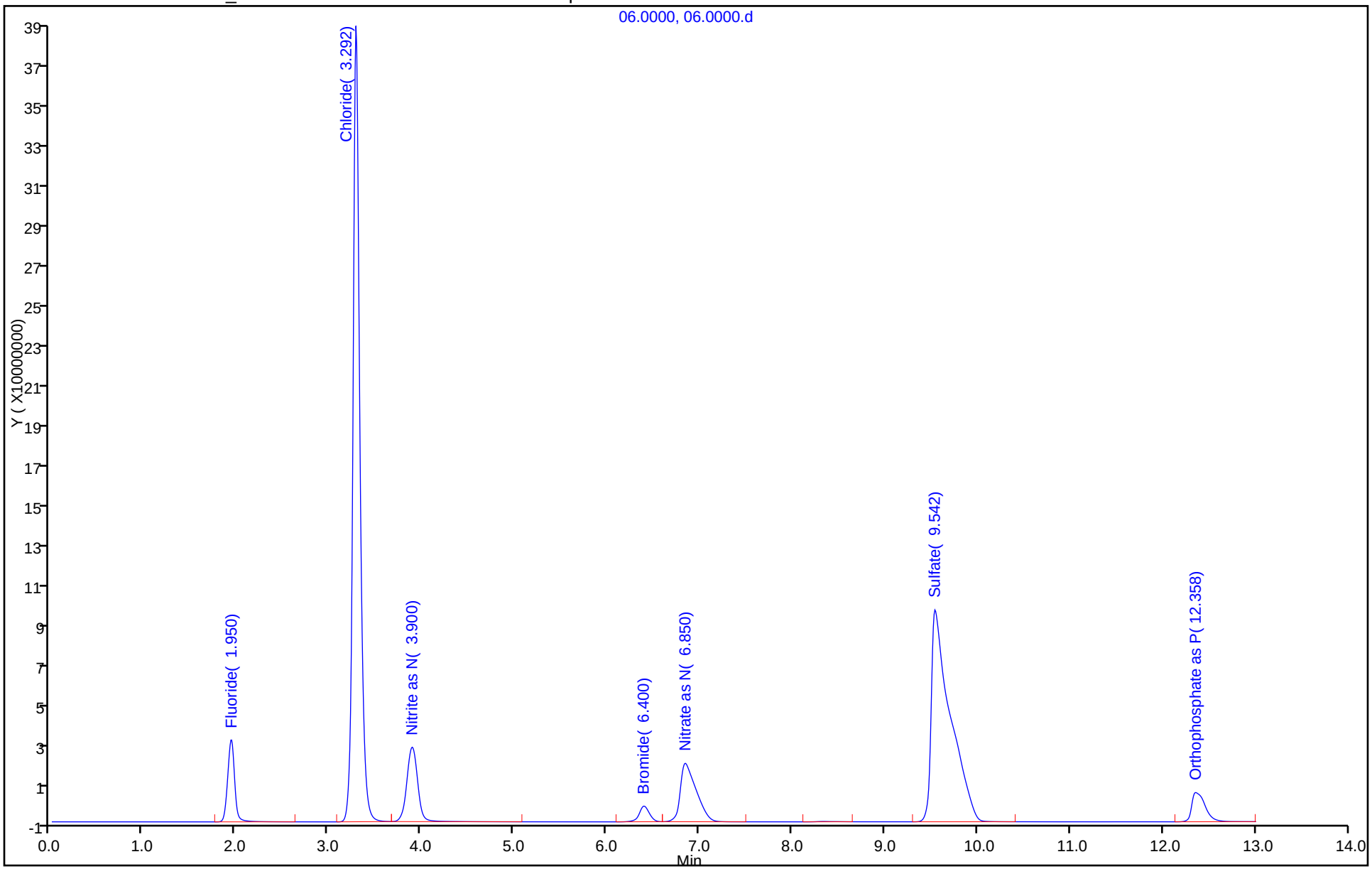
Data File:	\\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\06.0000.d				
Injection Date:	01-Sep-2016 11:16:00	Instrument ID:	WC_IonChrom6	Operator ID:	
Lims ID:	std L5			Worklist Smp#:	6
Client ID:					
Injection Vol:	25.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC6	Limit Group:	Wet - Anions 28D		



Report Date: 02-Sep-2016 09:37:35 Chrom Revision: 2.2 04-Mar-2016 14:36:24

TestAmerica Denver

Data File:	\\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\06.0000.d				
Injection Date:	01-Sep-2016 11:16:00	Instrument ID:	WC_IonChrom6	Operator ID:	
Lims ID:	std L5			Worklist Smp#:	6
Client ID:					
Injection Vol:	25.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC6	Limit Group:	Wet - Anions		



TestAmerica Denver
Area/Height Percent Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\07.0000.d
Lims ID: std L6
Client ID:
Sample Type: IC Calib Level: 6
Inject. Date: 01-Sep-2016 11:34:00 ALS Bottle#: 0 Worklist Smp#: 7
Injection Vol: 25.0 ul Dil. Factor: 1.0000
Sample Info: 280-0050495-007
Misc. Info.: 7 1207 F
Operator ID: Instrument ID: WC_IonChrom6
Sublist: chrom-Anions_IC6*sub4

Method: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\Anions_IC6.m
Limit Group: Wet - Anions 28D
Last Update: 02-Sep-2016 09:37:36 Calib Date: 01-Sep-2016 11:34:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\07.0000.d
Process Host: XAWRK011

Detector: 0005
Number of peaks found: 8

RT	Start RT	End RT	Area	Area%	A/Ht Ratio	Flags	Compound Identification
1.942	1.750	2.667	254892096	3.67	5.62		1 Fluoride
3.175	2.967	3.525	3264729366	46.99	5.15		2 Chloride
3.750	3.525	4.892	354339924	5.10	8.44		3 Nitrite as N
6.208	5.900	6.417	71593107	1.03	8.15		4 Bromide
6.658	6.417	7.317	416052563	5.99	13.26		5 Nitrate as N
8.242	8.025	8.558	2219861	0.03	13.90		
9.367	9.075	10.392	2406888477	34.64	17.99		6 Sulfate
12.217	11.950	13.000	177230244	2.55	14.46		7 Orthophosphate as P
			6947945638			Totals	

Total Unknown Area% = 0.03

Flag Legend
M - Manually Integrated
A - User Assigned Compound
B - Overlapped Base Peak
O - Overlapping Peak
e - Potential Peak Saturation

TestAmerica Denver
Area/Height Percent Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\07.0000.d
Lims ID: std L6
Client ID:
Sample Type: IC Calib Level: 6
Inject. Date: 01-Sep-2016 11:34:00 ALS Bottle#: 0 Worklist Smp#: 7
Injection Vol: 25.0 ul Dil. Factor: 1.0000
Sample Info: 280-0050495-007
Misc. Info.: 7 1207 F
Operator ID: Instrument ID: WC_IonChrom6
Sublist: chrom-Anions_IC6*sub4

Method: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\Anions_IC6.m
Limit Group: Wet - Anions
Last Update: 02-Sep-2016 09:37:36 Calib Date: 01-Sep-2016 11:34:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\07.0000.d
Process Host: XAWRK011

Detector: 0005
Number of peaks found: 8

RT	Start RT	End RT	Area	Area%	A/Ht Ratio	Flags	Compound Identification
1.942	1.750	2.667	254892096	3.67	5.62		1 Fluoride
3.175	2.967	3.525	3264729366	46.99	5.15		2 Chloride
3.750	3.525	4.892	354339924	5.10	8.44		3 Nitrite as N
6.208	5.900	6.417	71593107	1.03	8.15		4 Bromide
6.658	6.417	7.317	416052563	5.99	13.26		5 Nitrate as N
8.242	8.025	8.558	2219861	0.03	13.90		
9.367	9.075	10.392	2406888477	34.64	17.99		6 Sulfate
12.217	11.950	13.000	177230244	2.55	14.46		7 Orthophosphate as P
			6947945638			Totals	

Total Unknown Area% = 0.03

Flag Legend
M - Manually Integrated
A - User Assigned Compound
B - Overlapped Base Peak
O - Overlapping Peak
e - Potential Peak Saturation

TestAmerica Denver
Target Compound Quantitation Report

Data File:	\\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\07.0000.d				
Lims ID:	std L6				
Client ID:					
Sample Type:	IC	Calib Level:	6		
Inject. Date:	01-Sep-2016 11:34:00	ALS Bottle#:	0	Worklist Smp#:	7
Injection Vol:	25.0 ul	Dil. Factor:	1.0000		
Sample Info:	280-0050495-007				
Misc. Info.:	7 1207 F				
Operator ID:		Instrument ID:	WC_IonChrom6		
Sublist:	chrom-Anions_IC6*sub4				
Method:	\\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\Anions_IC6.m				
Limit Group:	Wet - Anions				
Last Update:	02-Sep-2016 09:37:36	Calib Date:	01-Sep-2016 11:34:00		
Integrator:	Falcon				
Quant Method:	External Standard	Quant By:	Initial Calibration		
Last ICal File:	\\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\07.0000.d				
Column 1 :			Det: 0005		
Process Host:	XAWRK011				

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride	1.942	1.950	-0.008	254892096	10.0	9.81	
2 Chloride	3.175	3.317	-0.142	3264729366	200.0	199.5	
3 Nitrite as N	3.750	3.917	-0.167	354339924	10.0	9.76	
4 Bromide	6.208	6.425	-0.217	71593107	10.0	9.98	
5 Nitrate as N	6.658	6.908	-0.250	416052563	10.0	9.98	
6 Sulfate	9.367	9.492	-0.125	2406888477	200.0	199.2	
7 Orthophosphate as P	12.217	11.992	0.225	177230244	10.0	9.95	

Reagents:

IC CAL cl/so4_00114	Amount Added:	4.00	Units: mL
IC Cal low_00226	Amount Added:	1.00	Units: mL

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\07.0000.d
Lims ID: std L6
Client ID:
Sample Type: IC Calib Level: 6
Inject. Date: 01-Sep-2016 11:34:00 ALS Bottle#: 0 Worklist Smp#: 7
Injection Vol: 25.0 ul Dil. Factor: 1.0000
Sample Info: 280-0050495-007
Misc. Info.: 7 1207 F
Operator ID: Instrument ID: WC_IonChrom6
Sublist: chrom-Anions_IC6*sub4

Method: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\Anions_IC6.m
Limit Group: Wet - Anions 28D
Last Update: 02-Sep-2016 09:37:36 Calib Date: 01-Sep-2016 11:34:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\07.0000.d

Column 1 : Det: 0005
Process Host: XAWRK011

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride	1.942	1.950	-0.008	254892096	10.0	9.81	
2 Chloride	3.175	3.317	-0.142	3264729366	200.0	199.5	
3 Nitrite as N	3.750	3.917	-0.167	354339924	10.0	9.76	
4 Bromide	6.208	6.425	-0.217	71593107	10.0	9.98	
5 Nitrate as N	6.658	6.908	-0.250	416052563	10.0	9.98	
6 Sulfate	9.367	9.492	-0.125	2406888477	200.0	199.2	
7 Orthophosphate as P	12.217	11.992	0.225	177230244	10.0	9.95	

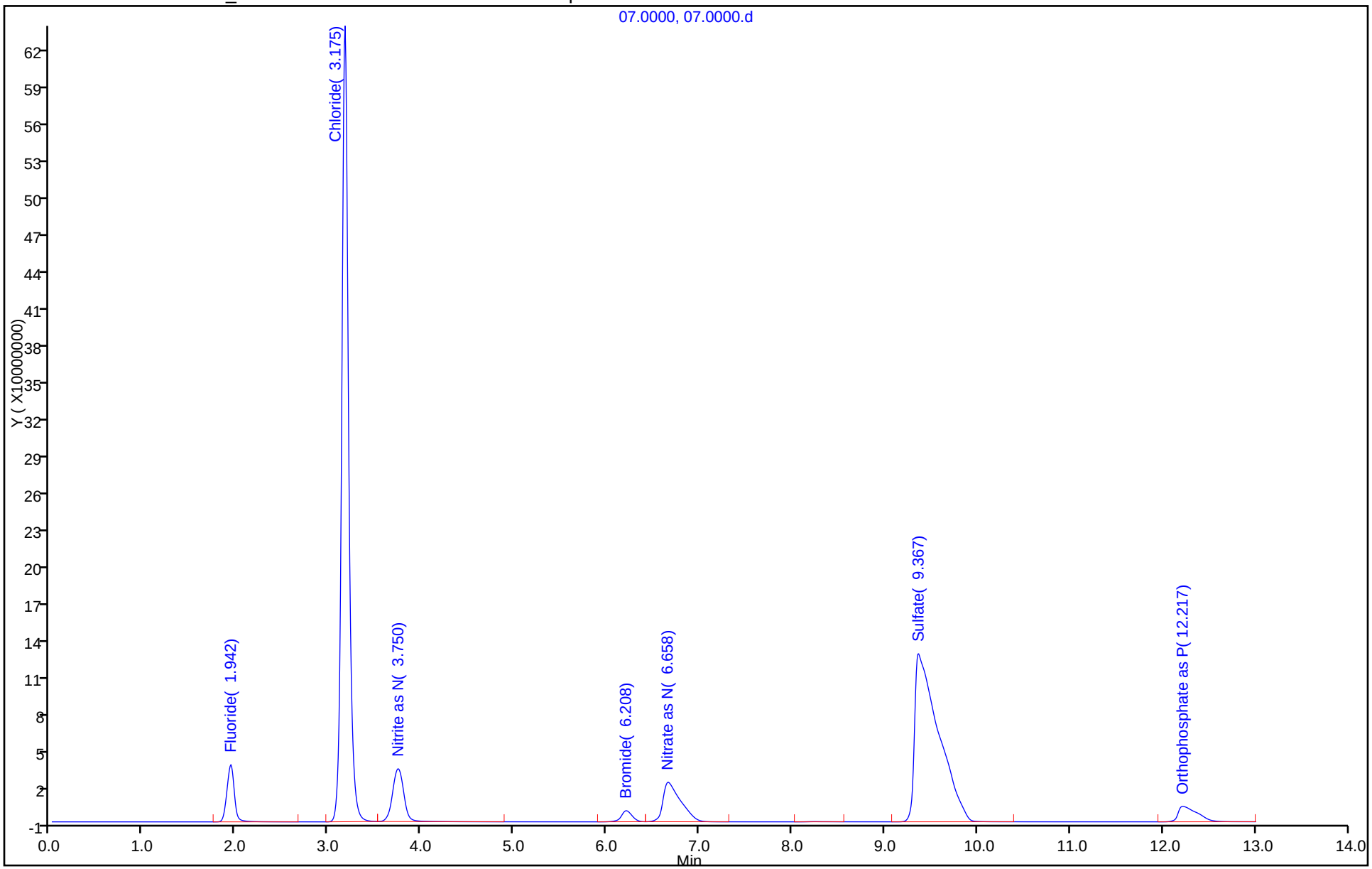
Reagents:

IC CAL cl/so4_00114 Amount Added: 4.00 Units: mL
IC Cal low_00226 Amount Added: 1.00 Units: mL

Report Date: 02-Sep-2016 09:37:36 Chrom Revision: 2.2 04-Mar-2016 14:36:24

TestAmerica Denver

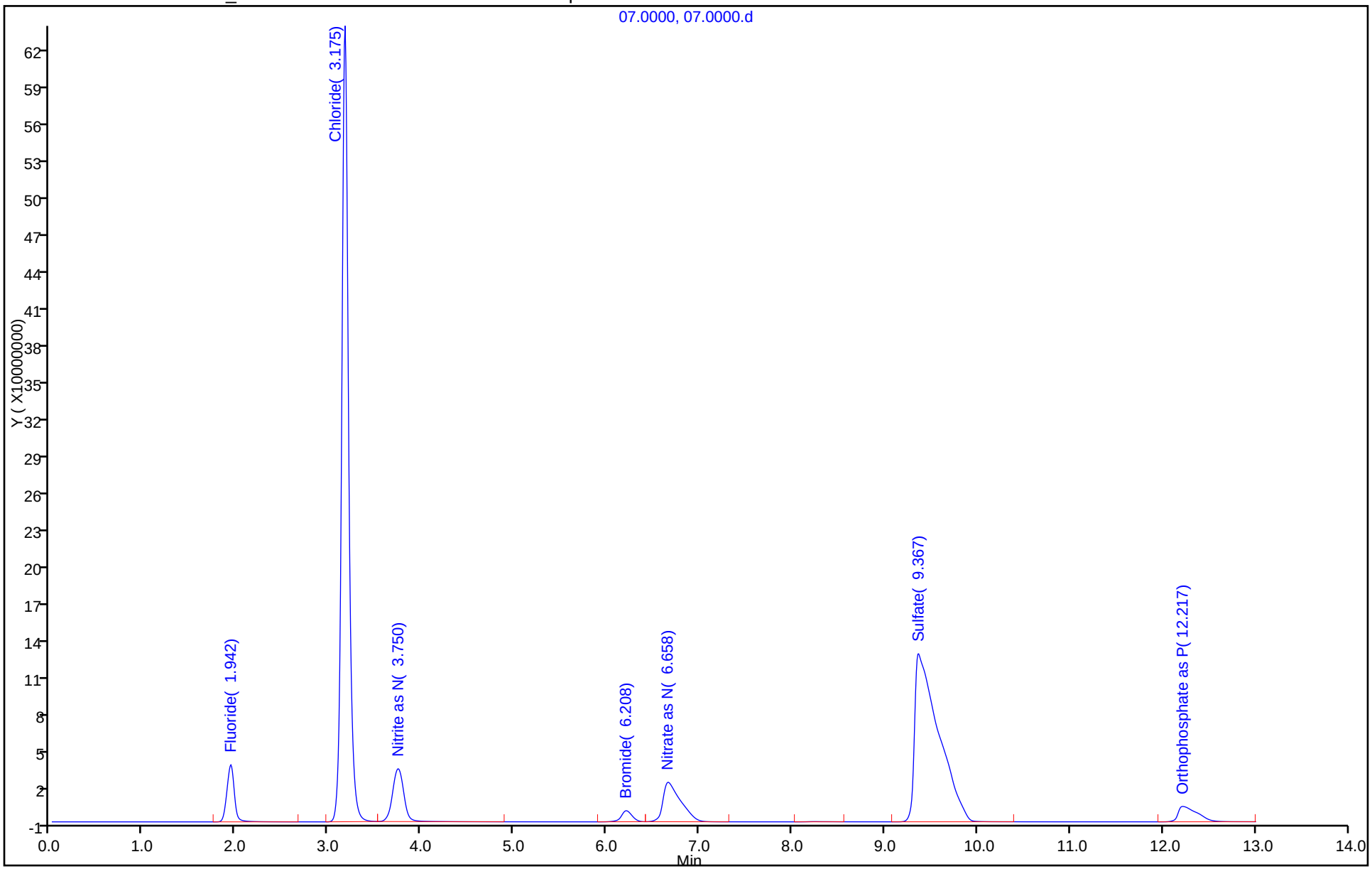
Data File:	\\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\07.0000.d				
Injection Date:	01-Sep-2016 11:34:00	Instrument ID:	WC_IonChrom6	Operator ID:	
Lims ID:	std L6			Worklist Smp#:	7
Client ID:					
Injection Vol:	25.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC6	Limit Group:	Wet - Anions 28D		



Report Date: 02-Sep-2016 09:37:36 Chrom Revision: 2.2 04-Mar-2016 14:36:24

TestAmerica Denver

Data File:	\\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\07.0000.d				
Injection Date:	01-Sep-2016 11:34:00	Instrument ID:	WC_IonChrom6	Operator ID:	
Lims ID:	std L6			Worklist Smp#:	7
Client ID:					
Injection Vol:	25.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC6	Limit Group:	Wet - Anions		



TestAmerica Denver
Area/Height Percent Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\08.0000.d
Lims ID: ICV
Client ID:
Sample Type: ICV
Inject. Date: 01-Sep-2016 12:07:00 ALS Bottle#: 0 Worklist Smp#: 8
Injection Vol: 25.0 ul Dil. Factor: 1.0000
Sample Info: 280-0050495-008
Misc. Info.: 26115
Operator ID: Instrument ID: WC_IonChrom6
Sublist:

Method: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\Anions_IC6.m
Limit Group: Wet - Anions
Last Update: 02-Sep-2016 09:37:37 Calib Date: 01-Sep-2016 11:34:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\07.0000.d
Process Host: XAWRK011

Detector: 0005
Number of peaks found: 8

RT	Start RT	End RT	Area	Area%	A/Ht Ratio	Flags	Compound Identification
1.950	1.783	2.450	110196369	3.84	4.79		1 Fluoride
3.350	3.133	3.750	1347148535	46.94	5.26		2 Chloride
3.967	3.750	5.008	150888743	5.26	7.19		3 Nitrite as N
6.508	6.183	6.725	28844655	1.01	7.41		4 Bromide
6.992	6.725	7.558	169176170	5.90	9.63		5 Nitrate as N
8.392	8.150	8.742	2087083	0.07	14.60		
9.642	9.383	10.392	988427762	34.44	11.82		6 Sulfate
12.292	11.842	13.000	72975179	2.54	9.93		7 Orthophosphate as P
			2869744496			Totals	

Total Unknown Area% = 0.07

Flag Legend
M - Manually Integrated
A - User Assigned Compound
B - Overlapped Base Peak
O - Overlapping Peak
e - Potential Peak Saturation

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\08.0000.d
Lims ID: ICV
Client ID:
Sample Type: ICV
Inject. Date: 01-Sep-2016 12:07:00 ALS Bottle#: 0 Worklist Smp#: 8
Injection Vol: 25.0 ul Dil. Factor: 1.0000
Sample Info: 280-0050495-008
Misc. Info.: 26115
Operator ID: Instrument ID: WC_IonChrom6
Sublist:

Method: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\Anions_IC6.m
Limit Group: Wet - Anions
Last Update: 02-Sep-2016 09:37:37 Calib Date: 01-Sep-2016 11:34:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\07.0000.d

Column 1 : Det: 0005
Process Host: XAWRK011

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride	1.950	1.950	0.000	110196369	4.00	4.21	
2 Chloride	3.350	3.350	0.000	1347148535	80.0	82.4	
3 Nitrite as N	3.967	3.967	0.000	150888743	4.00	4.13	
4 Bromide	6.508	6.508	0.000	28844655	4.00	4.03	
5 Nitrate as N	6.992	6.992	0.000	169176170	4.00	4.07	
6 Sulfate	9.642	9.642	0.000	988427762	80.0	81.8	
7 Orthophosphate as P	12.292	12.292	0.000	72975179	4.00	4.02	

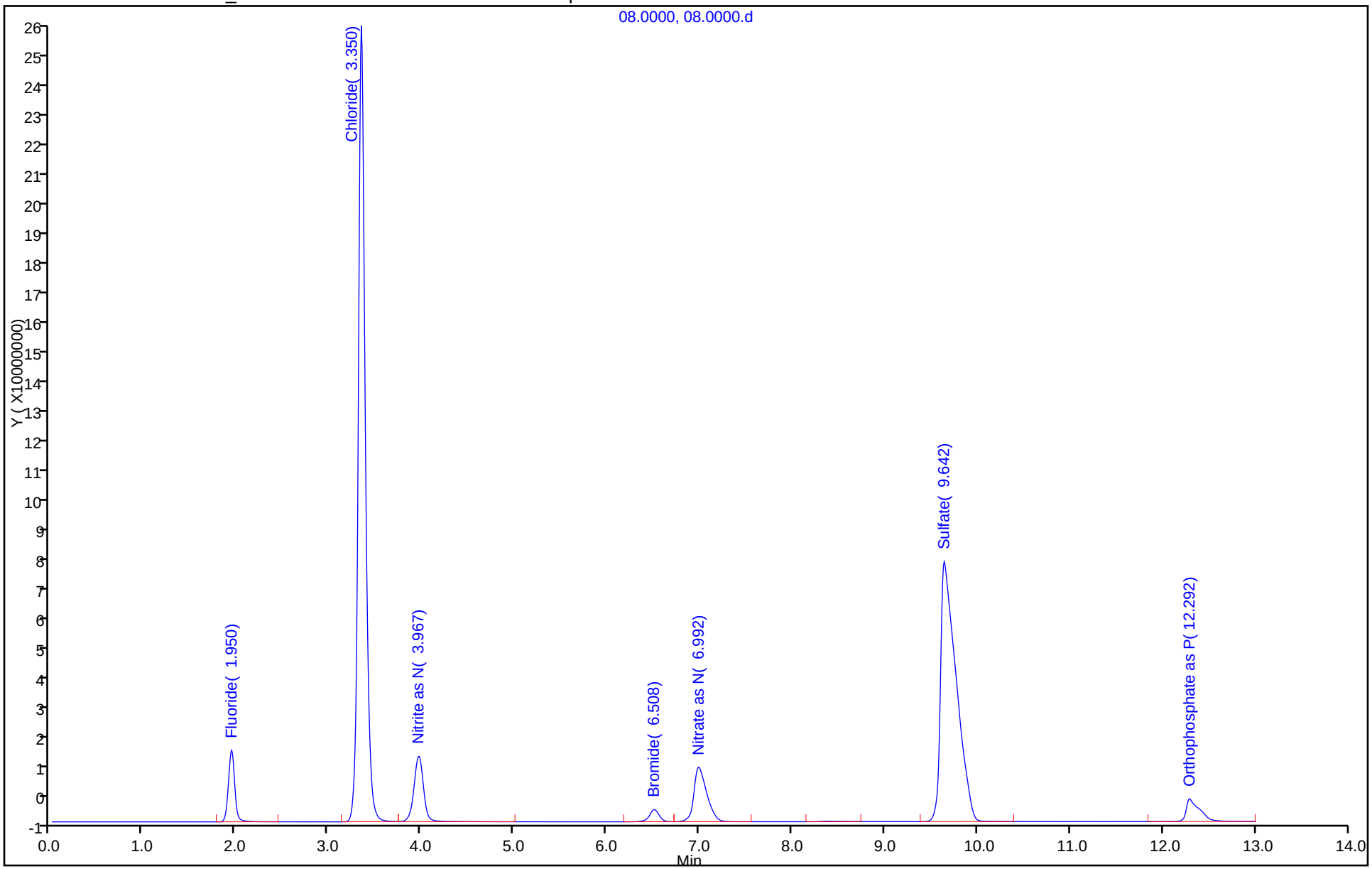
Reagents:

IC ICV 5_00154 Amount Added: 0.40 Units: mL
IC SO4 ICV_00016 Amount Added: 0.40 Units: mL
IC CL ICV_00013 Amount Added: 0.40 Units: mL

Report Date: 02-Sep-2016 09:37:37 Chrom Revision: 2.2 04-Mar-2016 14:36:24

TestAmerica Denver

Data File:	\\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\08.0000.d				
Injection Date:	01-Sep-2016 12:07:00	Instrument ID:	WC_IonChrom6	Operator ID:	
Lims ID:	ICV			Worklist Smp#:	8
Client ID:					
Injection Vol:	25.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC6	Limit Group:	Wet - Anions		



TestAmerica Denver
Area/Height Percent Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\08.0000.d
Lims ID: ICV
Client ID:
Sample Type: ICV
Inject. Date: 01-Sep-2016 12:07:00 ALS Bottle#: 0 Worklist Smp#: 8
Injection Vol: 25.0 ul Dil. Factor: 1.0000
Sample Info: 280-0050495-008
Misc. Info.: 26115
Operator ID: Instrument ID: WC_IonChrom6
Sublist:

Method: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\Anions_IC6.m
Limit Group: Wet - Anions 28D
Last Update: 02-Sep-2016 09:37:37 Calib Date: 01-Sep-2016 11:34:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\07.0000.d
Process Host: XAWRK011

Detector: 0005
Number of peaks found: 8

RT	Start RT	End RT	Area	Area%	A/Ht Ratio	Flags	Compound Identification
1.950	1.783	2.450	110196369	3.84	4.79		1 Fluoride
3.350	3.133	3.750	1347148535	46.94	5.26		2 Chloride
3.967	3.750	5.008	150888743	5.26	7.19		3 Nitrite as N
6.508	6.183	6.725	28844655	1.01	7.41		4 Bromide
6.992	6.725	7.558	169176170	5.90	9.63		5 Nitrate as N
8.392	8.150	8.742	2087083	0.07	14.60		
9.642	9.383	10.392	988427762	34.44	11.82		6 Sulfate
12.292	11.842	13.000	72975179	2.54	9.93		7 Orthophosphate as P
			2869744496			Totals	

Total Unknown Area% = 0.07

Flag Legend
M - Manually Integrated
A - User Assigned Compound
B - Overlapped Base Peak
O - Overlapping Peak
e - Potential Peak Saturation

New cal.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

IC Instrument Information

WL: 50495 **Inst ID:** 6 **Analysis Date:** 09/01 **Analyst:** TP

Rush	Job No.	Samples	Anions	QC Req	HT Exp
☐	87362	3	F Cl NO2 Br NO3 PO4 SO4	MS/D ?	Client
☐	87243	1	F Cl NO2 Br NO3 PO4 SO4	MS/D	
historical → ☐	87248	8	F Cl NO2 Br NO3 PO4 SO4	MS/D ?	
☐	87276	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	
☐			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
Worklist Report

Worklist Name: 090116 cal
Worklist Number: 50495
Instrument Name: WC_IonChrom6
Chrom Method: Anions_IC6
Injection Volume: 25.00
Units: ul
Analysis Type: Semi VOA
Batch Directory: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b
Upload Directory: \\CORPTALSAPP16\280-DN-RawData\WetChem\IonChrom6\300.0_28D

Worklist ID	Lims ID	Sample Reagents	Smp Type	Cal Lvl	Fract	Dil Fact
280-0050495-001	# 1 RTC	IC LCS_00680	RTC		1.000000	
280-0050495-002	# 2 std L1	IC CAL cl/so4_00114 IC Cal low_00226	IC	1	1.000000	
280-0050495-003	# 3 std L2	IC CAL cl/so4_00114 IC Cal low_00226	IC	2	1.000000	
280-0050495-004	# 4 std L3	IC CAL cl/so4_00114 IC Cal low_00226	IC	3	1.000000	
280-0050495-005	# 5 std L4	IC CAL cl/so4_00114 IC Cal low_00226	IC	4	1.000000	
280-0050495-006	# 6 std L5	IC CAL cl/so4_00114 IC Cal low_00226	IC	5	1.000000	
280-0050495-007	# 7 std L6	IC CAL cl/so4_00114 IC Cal low_00226	IC	6	1.000000	
280-0050495-008	# 8 ICV	IC ICV 5_00154 IC SO4 ICV_00016 IC CL ICV_00013	ICV		1.000000	
280-0050495-009	# 9 ICB		ICB		1.000000	
280-0050495-010	#10 MRL	IC CAL cl/so4_00114 IC Cal low_00226	MRL		1.000000	
280-0050495-011	#11 LCS	IC LCS_00680	LCS		1.000000	
280-0050495-012	#12 LCSD	IC LCS_00680	LCSD		1.000000	
280-0050495-013	#13 MB		MB		1.000000	
280-0050495-014	#14 280-87362-A-7		Client		5.000000	

Worklist ID	Lims ID	Sample Reagents	Smp Type	Cal Lvl	Fract	Dil Fact
280-0050495-015	#15 280-87362-A-7 DU		DU		5.000000	
280-0050495-016	#16 280-87362-A-7 MS	ICMS/MSD WEEK_00417	MS		5.000000	
280-0050495-017	#17 280-87362-A-7 MSD	ICMS/MSD WEEK_00417	MSD		5.000000	
280-0050495-018	#18 280-87362-A-11		Client		1.000000	
280-0050495-019	#19 280-87362-A-17		Client		1.000000	
280-0050495-020	#20 280-87243-N-3		Client		2.000000	
280-0050495-021	#21 280-87243-N-3		Client		50.00	
280-0050495-022	#22 280-87248-A-1		Client		1.000000	
280-0050495-023	#23 280-87248-A-1		Client		20.00	
280-0050495-024	#24 ccv	IC LCS_00680	CCV		1.000000	
280-0050495-025	#25 ccb		CCB		1.000000	
280-0050495-026	#26 280-87248-A-2		Client		10.00	
280-0050495-027	#27 280-87248-A-4		Client		20.00	
280-0050495-028	#28 280-87248-A-5		Client		20.00	
280-0050495-029	#29 280-87248-A-6		Client		5.000000	
280-0050495-030	#30 280-87248-A-6		Client		50.00	
280-0050495-031	#31 280-87248-A-7		Client		20.00	
280-0050495-032	#32 280-87248-A-7 DU		DU		20.00	

Worklist ID	Lims ID	Sample Reagents	Smp Type	Cal Lvl	Fract	Dil Fact
280-0050495-033	#33 280-87248-A-7 MS	ICMS/MSD WEEK_00417	MS		20.00	
280-0050495-034	#34 280-87248-A-7 MSD	ICMS/MSD WEEK_00417	MSD		20.00	
280-0050495-035	#35 280-87248-A-8		Client		50.00	
280-0050495-036	#36 ccv	IC LCS_00680	CCV		1.000000	
280-0050495-037	#37 ccb		CCB		1.000000	
280-0050495-038	#38 280-87248-A-9		Client		50.00	
280-0050495-039	#39 280-87276-A-1		Client		5.000000	
280-0050495-040	#40 280-87276-A-1		Client		100.0	
280-0050495-041	#41 280-87276-A-2		Client		5.000000	
280-0050495-042	#42 280-87276-A-2		Client		100.0	
280-0050495-043	#43 280-87276-A-3		Client		5.000000	
280-0050495-044	#44 280-87276-A-3		Client		100.0	
280-0050495-045	#45 ccv	IC LCS_00680	CCV		1.000000	
280-0050495-046	#46 ccb		CCB		1.000000	

TestAmerica Denver

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Ion Chromatography Data Review Checklist

LIMS Batch Number: 340426.27	Worklist #: 50495	Instrument ID: IC6
Analyst/1st Reviewer/Date: TP / AB 9-2-16	Method (circle): 300.0 9056 9056A DV-WC-0077	QC Type (circle): Standard DOD Q4 DoD Q5 QAPP_____ Other DoE
Matrix (circle): Water Solid Leachate		

Review Items	Yes	No	NA	2nd Rev	If No, why is data reportable?
A. Calibration/Instrument Run QC					
1. Verify intermediate standards for correct concentration stated in SOP (ICAL pts at correct concentration)	✓			✓	
2. Calibrated with at least 5 standards & a blank	✓			✓	
3. Elution order of analytes in ICAL confirmed to be correct	✓			✓	
4. Linearity and intercept: r ≥ 0.995 (r2>0.99) & |x-intercept| < ½ RL (absolute value)	✓			✓	
5. ICV, second source: run before samples 90-110% recovery / 80-120% recovery (Hydrazine)	✓			✓	
6. CCV: 10% frequency & closing 90-110% recovery / 80-120% recovery (Hydrazine)	✓			✓	
7. ICB/CCB: run before samples, 10% freq. & closing 8. Result < ½ RL	✓			✓	
9. RL-level check standard (Anions) run before samples 50-150% Recovery	✓			✓	
10. RT Window set based on midpoint of ICAL or initial CCV?	✓			✓	
B. Client Sample and QC Sample Results					
11. Samples with results > linear range diluted and reanalyzed?	✓			✓	Comments:
12. Manual integrations done & documented appropriately? (before & after chroms, date, initial, & reason)	✓			✓	Comments:
C. Preparation/Matrix QC					
13. If samples are lab filtered are QC samples also filtered?	✓			✓	
14. Method Blank: one per preparation batch Result < 1/2 RL *If no, list blank ID & explain:*	✓			✓	□ No analyte > RL in associated samples □ Sample results >10x blank □ Insufficient sample for reanalysis
15. LCS: one per preparation batch 90-110% recovery (routine) / Lab limits (Hydrazine) *If no, list LCS ID & explain:*	✓			✓	□ Insufficient sample for reanalysis □ LCS %R > QC limits & samples < RL
16. Matrix Retention Time Spike: one per sample (Hydrazine) MS/MSD freq.: a pair per 20 samples (Hydrazine) MS/MSD and Dup freq.: a pair per 10 samples (Anions) *If no, list QC ID & explain:*	X			✓	□ Insufficient sample

Review Items	Yes	No	NA	2nd Rev	If No, why is data reportable?
17. MS/MSD recovery & RPD: 80-120% recovery (Anions) Lab limits (Hydrazine) 20% RPD *If no, list MS or MSD ID & explain:*	√			—	☐ LCS acceptable – matrix effects ☐ Native analyte > 4x spike level ☐ Matrix effect and native analyte > 4x spike
D. Raw Data & TALS Data Entry					
18. Raw Data					
a. Unused data is clearly identified (with reason)	√			—	
b. All cross outs are initialed and dated	√			—	
c. Out of control QC is clearly identified	√			—	
d. Any data that has a qualifier is commented on with appropriate action taken	√			—	
e. The first page of the run includes the filename, instrument, and analyst initials/signature	√			—	
19. Run Log					
a. Unused data is clearly identified	√			—	
b. All cross outs are initialed and dated	√			—	
c. Analyst initials/signature provided	√			—	
20. TALS Samples Tab					
a. LIMS Sample IDs / Containers are correct	√			—	
b. Method and matrix are correct	√			—	
c. Date and time match raw data	√			—	
d. Dilutions are correct	√			—	
e. Correct suffix designated (where applicable)	√			—	
21. TALS Worksheet Tab is complete and correct	√			—	
22. TALS Reagent Tab is complete and correct	√			—	
23. TALS QC Links Tab is correct	√			—	
24. TALS Sample Results Tab					
a. All unused data are marked Rejected or Accepted	√			—	
b. All reported analytes are marked Primary or Secondary	√			—	
25. TALS Batch Information Screen documentation is complete	√			—	
26. TALS Status set to appropriate review level	√			—	
E. Final Report and NCMs (2nd level review only)					
27. Were all job/project requirements met?	—				
28. Results for samples and QC correct on final report?	—				
29. Are all necessary scanned documents in TALS?	—				
30. NCMs reviewed for applicability, correct references to batches, grammar/typographical errors?	—				

Comments: _____

2nd Reviewer: TP **Review Date:** 09/02/16

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\08.0000.d
Lims ID: ICV
Client ID:
Sample Type: ICV
Inject. Date: 01-Sep-2016 12:07:00 ALS Bottle#: 0 Worklist Smp#: 8
Injection Vol: 25.0 ul Dil. Factor: 1.0000
Sample Info: 280-0050495-008
Misc. Info.: 26115
Operator ID: Instrument ID: WC_IonChrom6
Sublist:

Method: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\Anions_IC6.m
Limit Group: Wet - Anions 28D
Last Update: 02-Sep-2016 09:37:37 Calib Date: 01-Sep-2016 11:34:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\07.0000.d

Column 1 : Det: 0005
Process Host: XAWRK011

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride	1.950	1.950	0.000	110196369	4.00	4.21	
2 Chloride	3.350	3.350	0.000	1347148535	80.0	82.4	
3 Nitrite as N	3.967	3.967	0.000	150888743	4.00	4.13	
4 Bromide	6.508	6.508	0.000	28844655	4.00	4.03	
5 Nitrate as N	6.992	6.992	0.000	169176170	4.00	4.07	
6 Sulfate	9.642	9.642	0.000	988427762	80.0	81.8	
7 Orthophosphate as P	12.292	12.292	0.000	72975179	4.00	4.02	

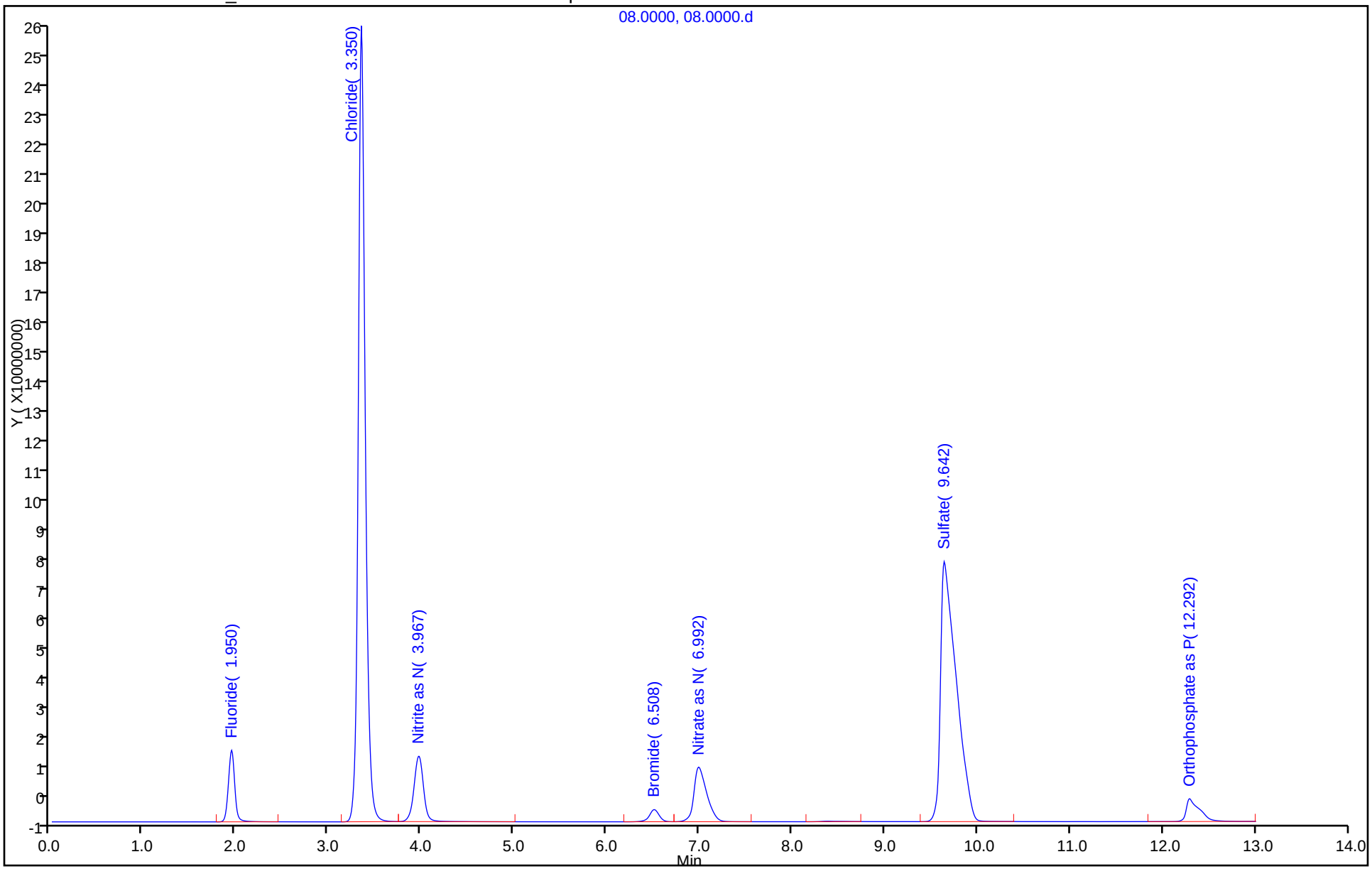
Reagents:

IC ICV 5_00154 Amount Added: 0.40 Units: mL
IC SO4 ICV_00016 Amount Added: 0.40 Units: mL
IC CL ICV_00013 Amount Added: 0.40 Units: mL

Report Date: 02-Sep-2016 09:37:37 Chrom Revision: 2.2 04-Mar-2016 14:36:24

TestAmerica Denver

Data File:	\\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\08.0000.d				
Injection Date:	01-Sep-2016 12:07:00	Instrument ID:	WC_IonChrom6	Operator ID:	
Lims ID:	ICV			Worklist Smp#:	8
Client ID:					
Injection Vol:	25.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC6	Limit Group:	Wet - Anions 28D		



TestAmerica Denver
Area/Height Percent Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\09.0000.d
Lims ID: ICB
Client ID:
Sample Type: ICB
Inject. Date: 01-Sep-2016 12:24:00 ALS Bottle#: 0 Worklist Smp#: 9
Injection Vol: 25.0 ul Dil. Factor: 1.0000
Sample Info: 280-0050495-009
Misc. Info.: 22621
Operator ID: Instrument ID: WC_IonChrom6

Method: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\Anions_IC6.m
Limit Group: Wet - Anions
Last Update: 02-Sep-2016 09:37:37 Calib Date: 01-Sep-2016 11:34:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\07.0000.d
Process Host: XAWRK011

Detector: 0005
Number of peaks found: 4

RT	Start RT	End RT	Area	Area%	A/Ht Ratio	Flags	Compound Identification
1.908	1.833	2.000	74011	1.97	3.70		1 Fluoride
3.292	3.150	3.492	102398	2.73	5.24		2 Chloride
8.383	8.133	8.742	1700128	45.35	11.83		
12.442	12.175	13.000	1872512	49.95	10.35		7 Orthophosphate as P
			3749049			Totals	

Total Unknown Area% = 45.35

Flag Legend
M - Manually Integrated
A - User Assigned Compound
B - Overlapped Base Peak
O - Overlapping Peak
e - Potential Peak Saturation

TestAmerica Denver
Target Compound Quantitation Report

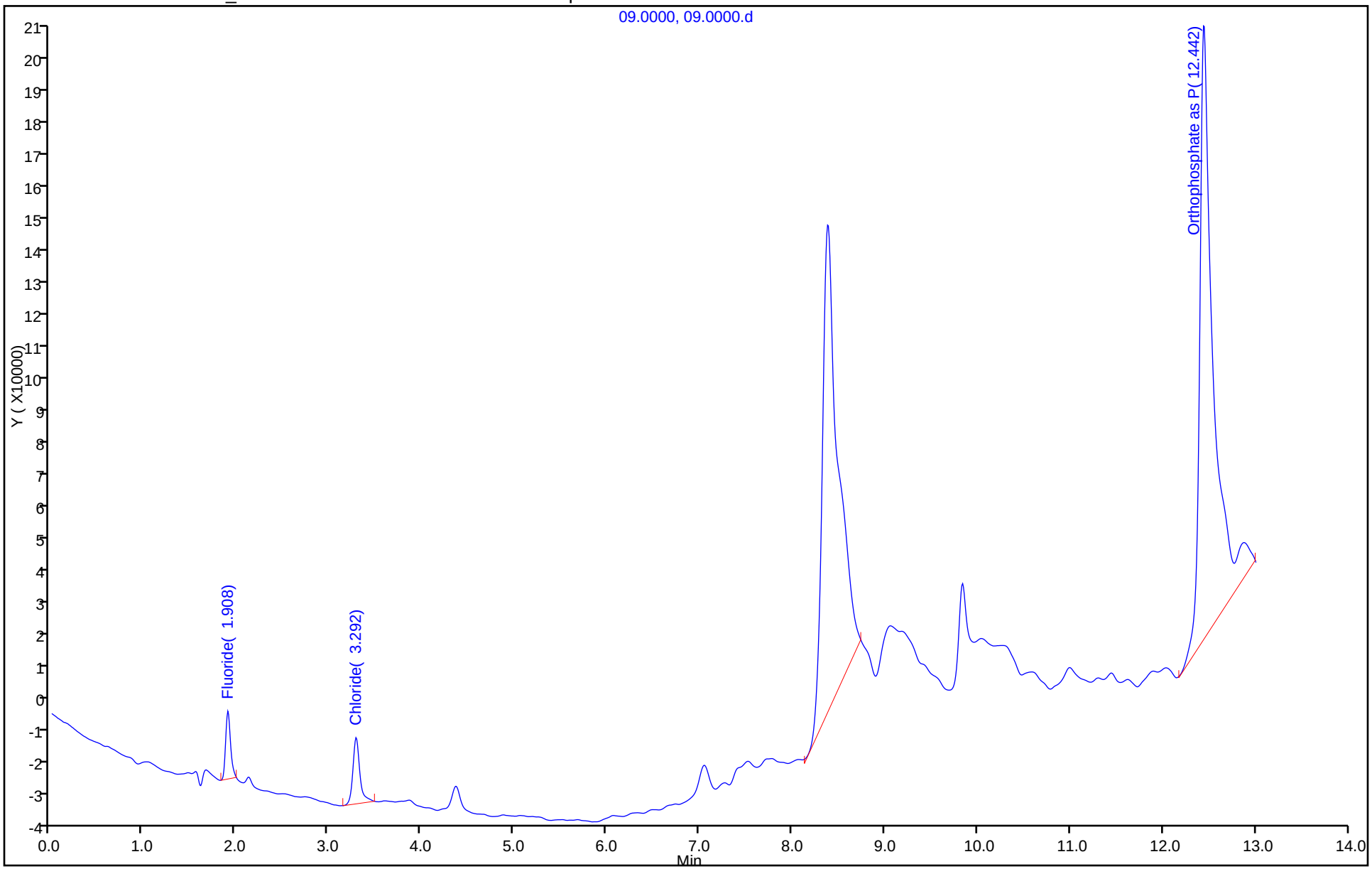
Data File:	\\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\09.0000.d				
Lims ID:	ICB				
Client ID:					
Sample Type:	ICB				
Inject. Date:	01-Sep-2016 12:24:00	ALS Bottle#:	0	Worklist Smp#:	9
Injection Vol:	25.0 ul	Dil. Factor:	1.0000		
Sample Info:	280-0050495-009				
Misc. Info.:	22621				
Operator ID:		Instrument ID:	WC_IonChrom6		
Method:	\\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\Anions_IC6.m				
Limit Group:	Wet - Anions				
Last Update:	02-Sep-2016 09:37:37	Calib Date:	01-Sep-2016 11:34:00		
Integrator:	Falcon				
Quant Method:	External Standard	Quant By:	Initial Calibration		
Last ICal File:	\\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\07.0000.d				
Column 1 :			Det: 0005		
Process Host:	XAWRK011				

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride	1.908	1.950	-0.042	74011		-0.0445	
2 Chloride	3.292	3.350	-0.058	102398		0.0513	
3 Nitrite as N		3.967				ND	
4 Bromide		6.508				ND	
5 Nitrate as N		6.992				ND	
6 Sulfate		9.642				ND	
7 Orthophosphate as P	12.442	12.292	0.150	1872512		-0.0234	

Report Date: 02-Sep-2016 09:37:38 Chrom Revision: 2.2 04-Mar-2016 14:36:24

TestAmerica Denver

Data File:	\\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\09.0000.d				
Injection Date:	01-Sep-2016 12:24:00	Instrument ID:	WC_IonChrom6	Operator ID:	
Lims ID:	ICB			Worklist Smp#:	9
Client ID:					
Injection Vol:	25.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC6	Limit Group:	Wet - Anions		



TestAmerica Denver
Area/Height Percent Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\09.0000.d
Lims ID: ICB
Client ID:
Sample Type: ICB
Inject. Date: 01-Sep-2016 12:24:00 ALS Bottle#: 0 Worklist Smp#: 9
Injection Vol: 25.0 ul Dil. Factor: 1.0000
Sample Info: 280-0050495-009
Misc. Info.: 22621
Operator ID: Instrument ID: WC_IonChrom6

Method: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\Anions_IC6.m
Limit Group: Wet - Anions 28D
Last Update: 02-Sep-2016 09:37:37 Calib Date: 01-Sep-2016 11:34:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\07.0000.d
Process Host: XAWRK011

Detector: 0005
Number of peaks found: 4

RT	Start RT	End RT	Area	Area%	A/Ht Ratio	Flags	Compound Identification
1.908	1.833	2.000	74011	1.97	3.70		1 Fluoride
3.292	3.150	3.492	102398	2.73	5.24		2 Chloride
8.383	8.133	8.742	1700128	45.35	11.83		
12.442	12.175	13.000	1872512	49.95	10.35		7 Orthophosphate as P
			3749049			Totals	

Total Unknown Area% = 45.35

Flag Legend
M - Manually Integrated
A - User Assigned Compound
B - Overlapped Base Peak
O - Overlapping Peak
e - Potential Peak Saturation

TestAmerica Denver
Target Compound Quantitation Report

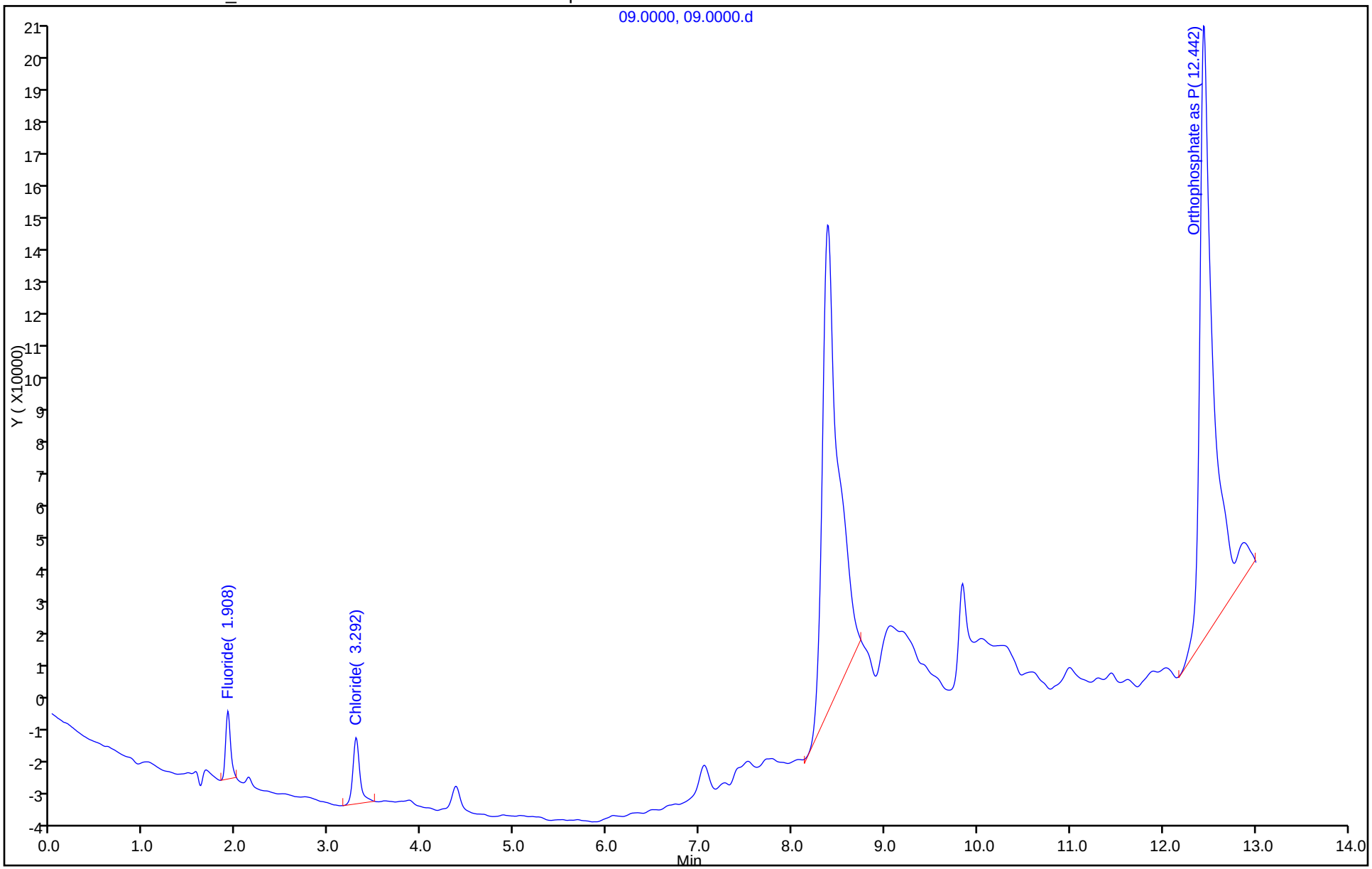
Data File:	\\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\09.0000.d				
Lims ID:	ICB				
Client ID:					
Sample Type:	ICB				
Inject. Date:	01-Sep-2016 12:24:00	ALS Bottle#:	0	Worklist Smp#:	9
Injection Vol:	25.0 ul	Dil. Factor:	1.0000		
Sample Info:	280-0050495-009				
Misc. Info.:	22621				
Operator ID:		Instrument ID:	WC_IonChrom6		
Method:	\\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\Anions_IC6.m				
Limit Group:	Wet - Anions 28D				
Last Update:	02-Sep-2016 09:37:37	Calib Date:	01-Sep-2016 11:34:00		
Integrator:	Falcon				
Quant Method:	External Standard	Quant By:	Initial Calibration		
Last ICal File:	\\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\07.0000.d				
Column 1 :			Det: 0005		
Process Host:	XAWRK011				

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride	1.908	1.950	-0.042	74011		-0.0445	
2 Chloride	3.292	3.350	-0.058	102398		0.0513	
3 Nitrite as N		3.967				ND	
4 Bromide		6.508				ND	
5 Nitrate as N		6.992				ND	
6 Sulfate		9.642				ND	
7 Orthophosphate as P	12.442	12.292	0.150	1872512		-0.0234	

Report Date: 02-Sep-2016 09:37:38 Chrom Revision: 2.2 04-Mar-2016 14:36:24

TestAmerica Denver

Data File:	\\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\09.0000.d				
Injection Date:	01-Sep-2016 12:24:00	Instrument ID:	WC_IonChrom6	Operator ID:	
Lims ID:	ICB			Worklist Smp#:	9
Client ID:					
Injection Vol:	25.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC6	Limit Group:	Wet - Anions 28D		



TestAmerica Denver
Area/Height Percent Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\01.0000.d
Lims ID: CCV
Client ID:
Sample Type: CCV
Inject. Date: 29-Sep-2016 09:29:00 ALS Bottle#: 0 Worklist Smp#: 1
Injection Vol: 25.0 ul Dil. Factor: 1.0000
Sample Info: 280-0051374-001
Operator ID: Instrument ID: WC_IonChrom6
Sublist: chrom-Anions_IC6*sub4

Method: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\Anions_IC6.m
Limit Group: Wet - Anions
Last Update: 30-Sep-2016 07:19:54 Calib Date: 01-Sep-2016 11:34:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\07.0000.d
Process Host: XAWRK016

First Level Reviewer: phantl Date: 29-Sep-2016 13:20:11

Detector: 0005
Number of peaks found: 8

RT	Start RT	End RT	Area	Area%	A/Ht Ratio	Flags	Compound Identification
1.958	1.775	2.517	131873285	3.79	5.13		1 Fluoride
3.317	3.100	3.700	1622162453	46.64	5.38		2 Chloride
3.925	3.700	5.092	182708982	5.25	7.72		3 Nitrite as N
6.392	6.083	6.592	35494343	1.02	7.64		4 Bromide
6.850	6.592	7.575	208834676	6.00	10.25		5 Nitrate as N
8.192	7.867	8.800	1928223	0.06	16.80		
9.292	9.017	10.117	1215534322	34.95	12.44		6 Sulfate
11.792	11.583	13.000	79846695	2.30	13.25		7 Orthophosphate as P
			3478382979			Totals	

Total Unknown Area% = 0.06

Flag Legend
M - Manually Integrated
A - User Assigned Compound
B - Overlapped Base Peak
O - Overlapping Peak
e - Potential Peak Saturation

TestAmerica Denver
CCV, Cal Verification Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\01.0000.d
Lims ID: CCV
Client ID:
Sample Type: CCV
Inject. Date: 29-Sep-2016 09:29:00 ALS Bottle#: 0 Worklist Smp#: 1
Injection Vol: 25.0 ul Dil. Factor: 1.0000
Sample Info: 280-0051374-001
Operator ID: Instrument ID: WC_IonChrom6
Sublist: chrom-Anions_IC6*sub4

Method: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\Anions_IC6.m
Limit Group: Wet - Anions
Last Update: 30-Sep-2016 07:19:54 Calib Date: 01-Sep-2016 11:34:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\07.0000.d

Column 1 : Det: 0005
Process Host: XAWRK016

First Level Reviewer: phantl Date: 29-Sep-2016 13:20:11

Start Cal Date: 01-Sep-2016 10:05:00
End Cal Date: 01-Sep-2016 11:34:00

Compound	Standard RRF/Amt	DLT RT	Ccal Amt	Ccal RF	%D	Max. %D	%Rec
1 Fluoride	5.00	0.008	5.05	26374657	1.0	10	101
2 Chloride	100.0	-0.033	99.2	16221625	-0.8	10	99
3 Nitrite as N	5.00	-0.042	5.01	36541796	0.3	10	100
4 Bromide	5.00	-0.116	4.96	7098869	-0.8	10	99
5 Nitrate as N	5.00	-0.142	5.02	41766935	0.3	10	100
6 Sulfate	100.0	-0.350	100.6	12155343	0.6	10	101
7 Orthophosphate as P	5.00	-0.500	4.41	15969339	-11.8	10	88

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

IC Instrument Information

WL: 51374 **Inst ID:** 6 **Analysis Date:** 09/29 **Analyst:** TT

Rush	Job No.	Samples	Anions	QC Req	HT Exp
☐	88669	1 soil	F Cl NO2 Br NO3 PO4 SO4	MS/D 3	client
☐	88716	1 "	F Cl NO2 Br NO3 PO4 SO4	MS/D	
☐	88678	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	
☐			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		

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DI_LEACH Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 280-344354

Analyst: Phan, Thu L

Batch Open: 9/29/2016 2:22:00PM

Batch End:

Deionized Water Leaching Procedure

	Input Sample Lab ID (Analytical Method)	SDG (Job #)	Matrix	Initial Amount	Final Amount	Due Date	Analytical TAT	Div Rank	Comments	Output Sample Lab ID
1	LCS~280-344354/1 N/A	N/A		10.01 g	100 mL	N/A	N/A	N/A		LCS 280-344354/1-A
2	LCSD~280-344354/2 N/A	N/A		10.00 g	100 mL	N/A	N/A	N/A		LCSD 280-344354/2-A
3	MB~280-344354/3 N/A	N/A		10.04 g	100 mL	N/A	N/A	N/A		MB 280-344354/3-A
4	280-88669-A-3 N/A	N/A		10.12 g	100 mL	N/A	N/A	N/A		280-88669-A-3-A
5	280-88669-A-3~DU N/A	N/A		10.07 g	100 mL	N/A	N/A	N/A		280-88669-A-3-B DU
6	280-88669-B-3~MS N/A	N/A		10.23 g	100 mL	N/A	N/A	N/A		280-88669-B-3-A MS
7	280-88669-C-3~MSD N/A	N/A		10.29 g	100 mL	N/A	N/A	N/A		280-88669-C-3-A MSD
8	280-88716-A-2 N/A	N/A		10.12 g	100 mL	N/A	N/A	N/A		280-88716-A-2-A
9	280-88678-A-1 (9056_48HR)	N/A (280-88678-1)	Solid	10.40 g	100 mL	10/10/16	8_Day_Rush	2		280-88678-A-1-A
9	280-88678-A-1 (9056_28D)	N/A (280-88678-1)	Solid	10.40 g	100 mL	10/10/16	8_Day_Rush	2		280-88678-A-1-A
10	280-88678-A-2 (9056_48HR)	N/A (280-88678-1)	Solid	10.30 g	100 mL	10/10/16	8_Day_Rush	2		280-88678-A-2-A
10	280-88678-A-2 (9056_28D)	N/A (280-88678-1)	Solid	10.30 g	100 mL	10/10/16	8_Day_Rush	2		280-88678-A-2-A
11	280-88678-B-3 (9056_48HR)	N/A (280-88678-1)	Solid	10.14 g	100 mL	10/10/16	8_Day_Rush	2		280-88678-B-3-A
11	280-88678-B-3 (9056_28D)	N/A (280-88678-1)	Solid	10.14 g	100 mL	10/10/16	8_Day_Rush	2		280-88678-B-3-A

DI_LEACH Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 280-344354 | Analyst: Phan, Thu L | Batch Open: 9/29/2016 2:22:00PM

Batch End:

Batch Notes

Balance ID	24750836
Blank Soil Lot Number	162639
Uncorrected Initial Room Temperature	na
Initial Room Temperature	na
Uncorrected Final Room Temperature	na
Final Room Temperature	na
Room Temperature Thermometer ID	na
Batch Comment	start: 1430 finish: 1530

Comments

TestAmerica Laboratories
Worklist Report

Worklist Name: 092916 Worklist Number: 51374
Instrument Name: WC_IonChrom6 Chrom Method: Anions_IC6
Injection Volume: 25.00 Units: ul
Analysis Type: Semi VOA
Batch Directory: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b
Upload Directory: \\CORPTALSAPP16\280-DN-RawData\WetChem\IonChrom6\300.0_28D

Worklist ID	Lims ID	Sample Reagents	Smp Type	Fract	Dil Fact
280-0051374-001	# 1 CCV	IC LCS_00703	CCV	1.000000	
280-0051374-002	# 2 CCB		CCB	1.000000	
280-0051374-003	# 3 MRL	IC CAL cl/so4_00118 IC Cal low_00233	MRL	1.000000	
280-0051374-004	# 4 LCS	IC LCS_00703	LCS	1.000000	
280-0051374-005	# 5 LCSD	IC LCS_00703	LCSD	1.000000	
280-0051374-006	# 6 MB		MB	1.000000	
280-0051374-007	# 7 LCS 280-344354/1-A		LCS	1.000000	
280-0051374-008	# 8 LCSD 280-344354/2-A		LCSD	1.000000	
280-0051374-009	# 9 MB 280-344354/3-A		MB	1.000000	
280-0051374-010	#10 280-88669-A-3-A		Client	1.000000	
280-0051374-011	#11 280-88669-A-3-B DU		DU	1.000000	
280-0051374-012	#12 280-88669-B-3-A MS		MS	1.000000	
280-0051374-013	#13 280-88669-C-3-A MSD		MSD	1.000000	
280-0051374-014	#14 280-88716-A-2-A		Client	1.000000	

Worklist ID	Lims ID	Sample Reagents	Smp Type	Fract	Dil Fact
280-0051374-015	#15 280-88678-A-1-A		Client	1.000000	
280-0051374-016	#16 280-88678-A-2-A		Client	1.000000	
280-0051374-017	#17 ccv	IC LCS_00703	CCV	1.000000	
280-0051374-018	#18 ccb		CCB	1.000000	
280-0051374-019	#19 280-88678-B-3-A		Client	1.000000	
280-0051374-020	#20 ccv	IC LCS_00703	CCV	1.000000	
280-0051374-021	#21 ccb		CCB	1.000000	

TestAmerica Denver

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Ion Chromatography Data Review Checklist

LIMS Batch Number: 344268-69	Worklist #: 51374	Instrument ID: IC6
Analyst/1st Reviewer/Date: TP/AB 9.30.16	Method (circle): 300.0 9056 9056A DV-WC-0077	QC Type (circle): Standard DOD Q4 DoD Q5 QAPP_____ Other_____
Matrix (circle): Water Solid Leachate		

Review Items	Yes	No	NA	2nd Rev	If No, why is data reportable?
A. Calibration/Instrument Run QC					
1. Verify intermediate standards for correct concentration stated in SOP (ICAL pts at correct concentration)	✓			—	
2. Calibrated with at least 5 standards & a blank	✓			—	
3. Elution order of analytes in ICAL confirmed to be correct	✓			—	
4. Linearity and intercept: r ≥ 0.995 (r2>0.99) & |x-intercept| < ½ RL (absolute value)	✓			—	
5. ICV, second source: run before samples 90-110% recovery / 80-120% recovery (Hydrazine)	✓			—	
6. CCV: 10% frequency & closing 90-110% recovery / 80-120% recovery (Hydrazine)	✓			—	
7. ICB/CCB: run before samples, 10% freq. & closing 8. Result < ½ RL	✓			—	
9. RL-level check standard (Anions) run before samples 50-150% Recovery	✓			—	
10. RT Window set based on midpoint of ICAL or initial CCV?	✓			—	
B. Client Sample and QC Sample Results					
11. Samples with results > linear range diluted and reanalyzed? 9.30.16	✓		X	—	Comments:
12. Manual integrations done & documented appropriately? (before & after chroms, date, initial, & reason)	X			✓	Comments:
C. Preparation/Matrix QC					
13. If samples are lab filtered are QC samples also filtered?	X			✓	
14. Method Blank: one per preparation batch Result < 1/2 RL *If no, list blank ID & explain:*	X			✓	☐ No analyte > RL in associated samples ☐ Sample results >10x blank ☐ Insufficient sample for reanalysis
15. LCS: one per preparation batch 90-110% recovery (routine) / Lab limits (Hydrazine) *If no, list LCS ID & explain:*	X			✓	☐ Insufficient sample for reanalysis ☐ LCS %R > QC limits & samples < RL
16. Matrix Retention Time Spike: one per sample (Hydrazine) MS/MSD freq.: a pair per 20 samples (Hydrazine) MS/MSD and Dup freq.: a pair per 10 samples (Anions) *If no, list QC ID & explain:*	X			✓	☐ Insufficient sample

Review Items	Yes	No	NA	2nd Rev	If No, why is data reportable?
17. MS/MSD recovery & RPD: 80-120% recovery (Anions) Lab limits (Hydrazine) 20% RPD *If no, list MS or MSD ID & explain:*	✓			—	□ LCS acceptable – matrix effects □ Native analyte > 4x spike level □ Matrix effect and native analyte > 4x spike
D. Raw Data & TALS Data Entry					
18. Raw Data					
a. Unused data is clearly identified (with reason)	✓			—	
b. All cross outs are initialed and dated	✓			—	
c. Out of control QC is clearly identified	✓			—	
d. Any data that has a qualifier is commented on with appropriate action taken	✓			—	
e. The first page of the run includes the filename, instrument, and analyst initials/signature	✓			—	
19. Run Log					
a. Unused data is clearly identified	✓			—	
b. All cross outs are initialed and dated	✓			—	
c. Analyst initials/signature provided	✓			—	
20. TALS Samples Tab					
a. LIMS Sample IDs / Containers are correct	✓			—	
b. Method and matrix are correct	✓			—	
c. Date and time match raw data	✓			—	
d. Dilutions are correct	✓			—	
e. Correct suffix designated (where applicable)	✓			—	
21. TALS Worksheet Tab is complete and correct	✓			—	
22. TALS Reagent Tab is complete and correct	✓			—	
23. TALS QC Links Tab is correct	✓			—	
24. TALS Sample Results Tab					
a. All unused data are marked Rejected or Accepted	✓			—	
b. All reported analytes are marked Primary or Secondary	✓			—	
25. TALS Batch Information Screen documentation is complete	✓			—	
26. TALS Status set to appropriate review level	✓			—	
E. Final Report and NCMs (2nd level review only)					
27. Were all job/project requirements met?	—				
28. Results for samples and QC correct on final report?	—				
29. Are all necessary scanned documents in TALS?	—				
30. NCMs reviewed for applicability, correct references to batches, grammar/typographical errors?	—				

Comments: _____

2nd Reviewer: TP **Review Date:** 10/03/16

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\01.0000.d
Lims ID: CCV
Client ID:
Sample Type: CCV
Inject. Date: 29-Sep-2016 09:29:00 ALS Bottle#: 0 Worklist Smp#: 1
Injection Vol: 25.0 ul Dil. Factor: 1.0000
Sample Info: 280-0051374-001
Operator ID: Instrument ID: WC_IonChrom6
Sublist: chrom-Anions_IC6*sub4

Method: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\Anions_IC6.m
Limit Group: Wet - Anions
Last Update: 30-Sep-2016 07:19:54 Calib Date: 01-Sep-2016 11:34:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\07.0000.d

Column 1 : Det: 0005
Process Host: XAWRK016

First Level Reviewer: phantl Date: 29-Sep-2016 13:20:11

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride	1.958	1.950	0.008	131873285	5.00	5.05	
2 Chloride	3.317	3.350	-0.033	1622162453	100.0	99.2	
3 Nitrite as N	3.925	3.967	-0.042	182708982	5.00	5.01	
4 Bromide	6.392	6.508	-0.116	35494343	5.00	4.96	
5 Nitrate as N	6.850	6.992	-0.142	208834676	5.00	5.02	
6 Sulfate	9.292	9.642	-0.350	1215534322	100.0	100.6	
7 Orthophosphate as P	11.792	12.292	-0.500	79846695	5.00	4.41	

Reagents:

IC LCS_00703 Amount Added: 5.00 Units: mL

Report Date: 30-Sep-2016 07:19:54 Chrom Revision: 2.2 08-Sep-2016 14:45:52

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\01.0000.d

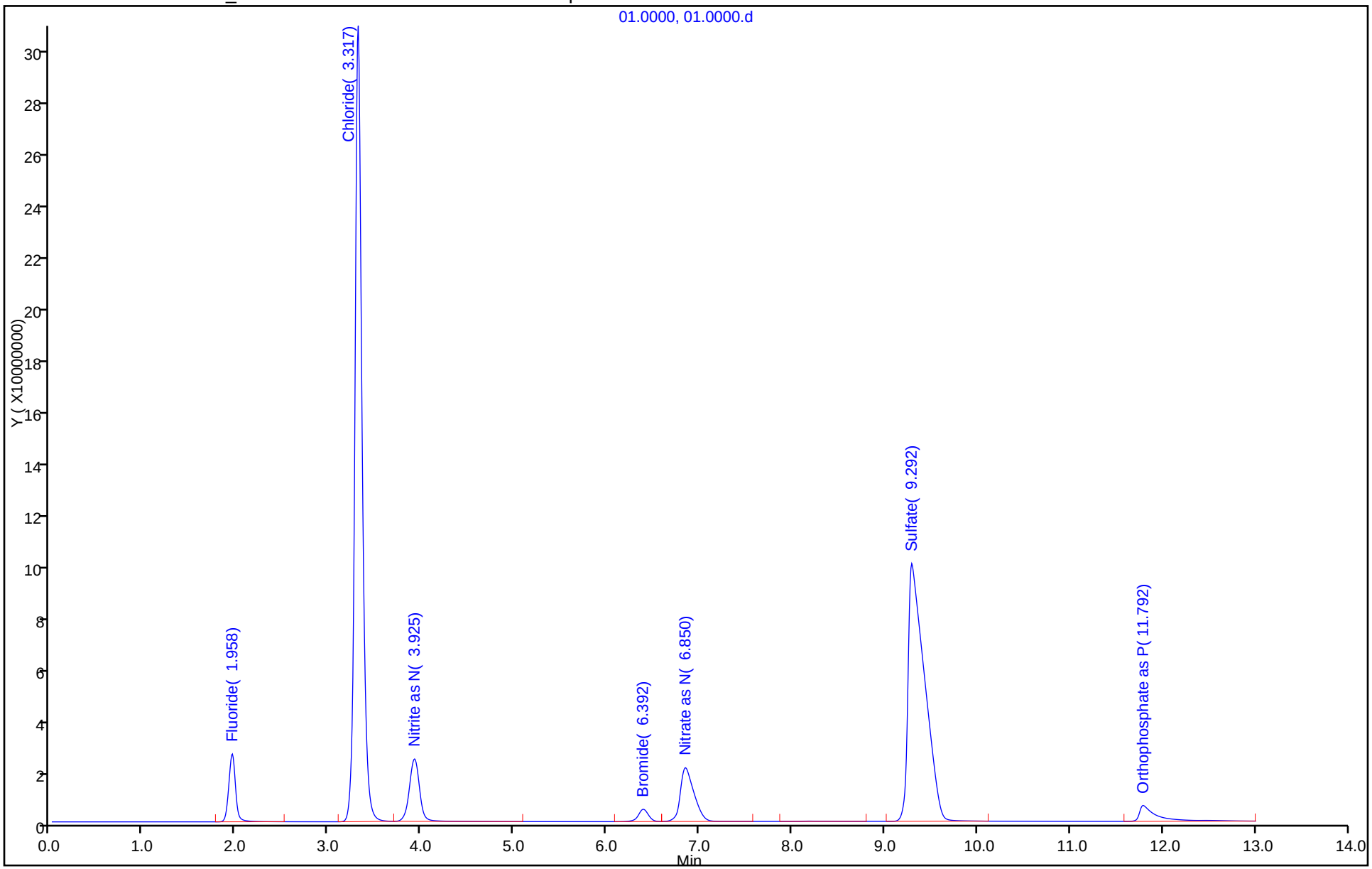
Injection Date: 29-Sep-2016 09:29:00 Instrument ID: WC_IonChrom6 Operator ID:

Lims ID: CCV Worklist Smp#: 1

Client ID:

Injection Vol: 25.0 ul Dil. Factor: 1.0000 ALS Bottle#: 0

Method: Anions_IC6 Limit Group: Wet - Anions



TestAmerica Denver
Area/Height Percent Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\01.0000.d
Lims ID: CCV
Client ID:
Sample Type: CCV
Inject. Date: 29-Sep-2016 09:29:00 ALS Bottle#: 0 Worklist Smp#: 1
Injection Vol: 25.0 ul Dil. Factor: 1.0000
Sample Info: 280-0051374-001
Operator ID: Instrument ID: WC_IonChrom6
Sublist: chrom-Anions_IC6*sub4

Method: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\Anions_IC6.m
Limit Group: Wet - Anions 28D
Last Update: 30-Sep-2016 07:19:54 Calib Date: 01-Sep-2016 11:34:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\07.0000.d
Process Host: XAWRK016

First Level Reviewer: phantl Date: 29-Sep-2016 13:20:11

Detector: 0005
Number of peaks found: 8

RT	Start RT	End RT	Area	Area%	A/Ht Ratio	Flags	Compound Identification
1.958	1.775	2.517	131873285	3.79	5.13		1 Fluoride
3.317	3.100	3.700	1622162453	46.64	5.38		2 Chloride
3.925	3.700	5.092	182708982	5.25	7.72		3 Nitrite as N
6.392	6.083	6.592	35494343	1.02	7.64		4 Bromide
6.850	6.592	7.575	208834676	6.00	10.25		5 Nitrate as N
8.192	7.867	8.800	1928223	0.06	16.80		
9.292	9.017	10.117	1215534322	34.95	12.44		6 Sulfate
11.792	11.583	13.000	79846695	2.30	13.25		7 Orthophosphate as P
			3478382979			Totals	

Total Unknown Area% = 0.06

Flag Legend
M - Manually Integrated
A - User Assigned Compound
B - Overlapped Base Peak
O - Overlapping Peak
e - Potential Peak Saturation

TestAmerica Denver
CCV, Cal Verification Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\01.0000.d
Lims ID: CCV
Client ID:
Sample Type: CCV
Inject. Date: 29-Sep-2016 09:29:00 ALS Bottle#: 0 Worklist Smp#: 1
Injection Vol: 25.0 ul Dil. Factor: 1.0000
Sample Info: 280-0051374-001
Operator ID: Instrument ID: WC_IonChrom6
Sublist: chrom-Anions_IC6*sub4

Method: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\Anions_IC6.m
Limit Group: Wet - Anions 28D
Last Update: 30-Sep-2016 07:19:54 Calib Date: 01-Sep-2016 11:34:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\07.0000.d

Column 1 : Det: 0005
Process Host: XAWRK016

First Level Reviewer: phantl Date: 29-Sep-2016 13:20:11

Start Cal Date: 01-Sep-2016 10:05:00
End Cal Date: 01-Sep-2016 11:34:00

Compound	Standard RRF/Amt	DLT RT	Ccal Amt	Ccal RF	%D	Max. %D	%Rec
1 Fluoride	5.00	0.008	5.05	26374657	1.0	10	101
2 Chloride	100.0	-0.033	99.2	16221625	-0.8	10	99
3 Nitrite as N	5.00	-0.042	5.01	36541796	0.3	10	100
4 Bromide	5.00	-0.116	4.96	7098869	-0.8	10	99
5 Nitrate as N	5.00	-0.142	5.02	41766935	0.3	10	100
6 Sulfate	100.0	-0.350	100.6	12155343	0.6	10	101
7 Orthophosphate as P	5.00	-0.500	4.41	15969339	-11.8	10	88

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

IC Instrument Information

WL: 51374 **Inst ID:** 6 **Analysis Date:** 09/29 **Analyst:** TT

Rush	Job No.	Samples	Anions	QC Req	HT Exp
☐	88669	1 soil	F Cl NO2 Br NO3 PO4 SO4	MS/D 3	client
☐	88716	1 "	F Cl NO2 Br NO3 PO4 SO4	MS/D	
☐	88678	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	
☐			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		
		F Cl NO2 Br NO3 PO4 SO4		

DI_LEACH Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 280-344354

Analyst: Phan, Thu L

Batch Open: 9/29/2016 2:22:00PM

Batch End:

Deionized Water Leaching Procedure

	Input Sample Lab ID (Analytical Method)	SDG (Job #)	Matrix	Initial Amount	Final Amount	Due Date	Analytical TAT	Div Rank	Comments	Output Sample Lab ID
1	LCS~280-344354/1 N/A	N/A		10.01 g	100 mL	N/A	N/A	N/A		LCS 280-344354/1-A
2	LCSD~280-344354/2 N/A	N/A		10.00 g	100 mL	N/A	N/A	N/A		LCSD 280-344354/2-A
3	MB~280-344354/3 N/A	N/A		10.04 g	100 mL	N/A	N/A	N/A		MB 280-344354/3-A
4	280-88669-A-3 N/A	N/A		10.12 g	100 mL	N/A	N/A	N/A		280-88669-A-3-A
5	280-88669-A-3~DU N/A	N/A		10.07 g	100 mL	N/A	N/A	N/A		280-88669-A-3-B DU
6	280-88669-B-3~MS N/A	N/A		10.23 g	100 mL	N/A	N/A	N/A		280-88669-B-3-A MS
7	280-88669-C-3~MSD N/A	N/A		10.29 g	100 mL	N/A	N/A	N/A		280-88669-C-3-A MSD
8	280-88716-A-2 N/A	N/A		10.12 g	100 mL	N/A	N/A	N/A		280-88716-A-2-A
9	280-88678-A-1 (9056_48HR)	N/A (280-88678-1)	Solid	10.40 g	100 mL	10/10/16	8_Day_Rush	2		280-88678-A-1-A
9	280-88678-A-1 (9056_28D)	N/A (280-88678-1)	Solid	10.40 g	100 mL	10/10/16	8_Day_Rush	2		280-88678-A-1-A
10	280-88678-A-2 (9056_48HR)	N/A (280-88678-1)	Solid	10.30 g	100 mL	10/10/16	8_Day_Rush	2		280-88678-A-2-A
10	280-88678-A-2 (9056_28D)	N/A (280-88678-1)	Solid	10.30 g	100 mL	10/10/16	8_Day_Rush	2		280-88678-A-2-A
11	280-88678-B-3 (9056_48HR)	N/A (280-88678-1)	Solid	10.14 g	100 mL	10/10/16	8_Day_Rush	2		280-88678-B-3-A
11	280-88678-B-3 (9056_28D)	N/A (280-88678-1)	Solid	10.14 g	100 mL	10/10/16	8_Day_Rush	2		280-88678-B-3-A

DI_LEACH Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 280-344354 | Analyst: Phan, Thu L | Batch Open: 9/29/2016 2:22:00PM

Batch End:

Batch Notes

Balance ID	24750836
Blank Soil Lot Number	162639
Uncorrected Initial Room Temperature	na
Initial Room Temperature	na
Uncorrected Final Room Temperature	na
Final Room Temperature	na
Room Temperature Thermometer ID	na
Batch Comment	start: 1430 finish: 1530

Comments

TestAmerica Laboratories
Worklist Report

Worklist Name: 092916 Worklist Number: 51374
Instrument Name: WC_IonChrom6 Chrom Method: Anions_IC6
Injection Volume: 25.00 Units: ul
Analysis Type: Semi VOA
Batch Directory: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b
Upload Directory: \\CORPTALSAPP16\280-DN-RawData\WetChem\IonChrom6\300.0_28D

Worklist ID	Lims ID	Sample Reagents	Smp Type	Fract	Dil Fact
280-0051374-001	# 1 CCV	IC LCS_00703	CCV	1.000000	
280-0051374-002	# 2 CCB		CCB	1.000000	
280-0051374-003	# 3 MRL	IC CAL cl/so4_00118 IC Cal low_00233	MRL	1.000000	
280-0051374-004	# 4 LCS	IC LCS_00703	LCS	1.000000	
280-0051374-005	# 5 LCSD	IC LCS_00703	LCSD	1.000000	
280-0051374-006	# 6 MB		MB	1.000000	
280-0051374-007	# 7 LCS 280-344354/1-A		LCS	1.000000	
280-0051374-008	# 8 LCSD 280-344354/2-A		LCSD	1.000000	
280-0051374-009	# 9 MB 280-344354/3-A		MB	1.000000	
280-0051374-010	#10 280-88669-A-3-A		Client	1.000000	
280-0051374-011	#11 280-88669-A-3-B DU		DU	1.000000	
280-0051374-012	#12 280-88669-B-3-A MS		MS	1.000000	
280-0051374-013	#13 280-88669-C-3-A MSD		MSD	1.000000	
280-0051374-014	#14 280-88716-A-2-A		Client	1.000000	

Worklist ID	Lims ID	Sample Reagents	Smp Type	Fract	Dil Fact
280-0051374-015	#15 280-88678-A-1-A		Client	1.000000	
280-0051374-016	#16 280-88678-A-2-A		Client	1.000000	
280-0051374-017	#17 ccv	IC LCS_00703	CCV	1.000000	
280-0051374-018	#18 ccb		CCB	1.000000	
280-0051374-019	#19 280-88678-B-3-A		Client	1.000000	
280-0051374-020	#20 ccv	IC LCS_00703	CCV	1.000000	
280-0051374-021	#21 ccb		CCB	1.000000	

TestAmerica Denver

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Ion Chromatography Data Review Checklist

LIMS Batch Number: 344268-69	Worklist #: 51374	Instrument ID: IC6
Analyst/1st Reviewer/Date: TP/AB 9.30.16	Method (circle): 300.0 9056 9056A DV-WC-0077	QC Type (circle): Standard DOD Q4 DoD Q5 QAPP_____ Other_____
Matrix (circle): Water Solid Leachate		

Review Items	Yes	No	NA	2nd Rev	If No, why is data reportable?
A. Calibration/Instrument Run QC					
1. Verify intermediate standards for correct concentration stated in SOP (ICAL pts at correct concentration)	✓			—	
2. Calibrated with at least 5 standards & a blank	✓			—	
3. Elution order of analytes in ICAL confirmed to be correct	✓			—	
4. Linearity and intercept: r ≥ 0.995 (r2>0.99) & |x-intercept| < ½ RL (absolute value)	✓			—	
5. ICV, second source: run before samples 90-110% recovery / 80-120% recovery (Hydrazine)	✓			—	
6. CCV: 10% frequency & closing 90-110% recovery / 80-120% recovery (Hydrazine)	✓			—	
7. ICB/CCB: run before samples, 10% freq. & closing 8. Result < ½ RL	✓			—	
9. RL-level check standard (Anions) run before samples 50-150% Recovery	✓			—	
10. RT Window set based on midpoint of ICAL or initial CCV?	✓			—	
B. Client Sample and QC Sample Results					
11. Samples with results > linear range diluted and reanalyzed? 9.30.16	✓		X	—	Comments:
12. Manual integrations done & documented appropriately? (before & after chroms, date, initial, & reason)	X			✓	Comments:
C. Preparation/Matrix QC					
13. If samples are lab filtered are QC samples also filtered?	X			✓	
14. Method Blank: one per preparation batch Result < 1/2 RL *If no, list blank ID & explain:*	X			✓	☐ No analyte > RL in associated samples ☐ Sample results >10x blank ☐ Insufficient sample for reanalysis
15. LCS: one per preparation batch 90-110% recovery (routine) / Lab limits (Hydrazine) *If no, list LCS ID & explain:*	X			✓	☐ Insufficient sample for reanalysis ☐ LCS %R > QC limits & samples < RL
16. Matrix Retention Time Spike: one per sample (Hydrazine) MS/MSD freq.: a pair per 20 samples (Hydrazine) MS/MSD and Dup freq.: a pair per 10 samples (Anions) *If no, list QC ID & explain:*	X			✓	☐ Insufficient sample

Review Items	Yes	No	NA	2nd Rev	If No, why is data reportable?
17. MS/MSD recovery & RPD: 80-120% recovery (Anions) Lab limits (Hydrazine) 20% RPD *If no, list MS or MSD ID & explain:*	✓			—	□ LCS acceptable – matrix effects □ Native analyte > 4x spike level □ Matrix effect and native analyte > 4x spike
D. Raw Data & TALS Data Entry					
18. Raw Data					
a. Unused data is clearly identified (with reason)	✓			—	
b. All cross outs are initialed and dated	✓			—	
c. Out of control QC is clearly identified	✓			—	
d. Any data that has a qualifier is commented on with appropriate action taken	✓			—	
e. The first page of the run includes the filename, instrument, and analyst initials/signature	✓			—	
19. Run Log					
a. Unused data is clearly identified	✓			—	
b. All cross outs are initialed and dated	✓			—	
c. Analyst initials/signature provided	✓			—	
20. TALS Samples Tab					
a. LIMS Sample IDs / Containers are correct	✓			—	
b. Method and matrix are correct	✓			—	
c. Date and time match raw data	✓			—	
d. Dilutions are correct	✓			—	
e. Correct suffix designated (where applicable)	✓			—	
21. TALS Worksheet Tab is complete and correct	✓			—	
22. TALS Reagent Tab is complete and correct	✓			—	
23. TALS QC Links Tab is correct	✓			—	
24. TALS Sample Results Tab					
a. All unused data are marked Rejected or Accepted	✓			—	
b. All reported analytes are marked Primary or Secondary	✓			—	
25. TALS Batch Information Screen documentation is complete	✓			—	
26. TALS Status set to appropriate review level	✓			—	
E. Final Report and NCMs (2nd level review only)					
27. Were all job/project requirements met?	—				
28. Results for samples and QC correct on final report?	—				
29. Are all necessary scanned documents in TALS?	—				
30. NCMs reviewed for applicability, correct references to batches, grammar/typographical errors?	—				

Comments: _____

2nd Reviewer: TP **Review Date:** 10/03/16

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\01.0000.d
Lims ID: CCV
Client ID:
Sample Type: CCV
Inject. Date: 29-Sep-2016 09:29:00 ALS Bottle#: 0 Worklist Smp#: 1
Injection Vol: 25.0 ul Dil. Factor: 1.0000
Sample Info: 280-0051374-001
Operator ID: Instrument ID: WC_IonChrom6
Sublist: chrom-Anions_IC6*sub4

Method: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\Anions_IC6.m
Limit Group: Wet - Anions 28D
Last Update: 30-Sep-2016 07:19:54 Calib Date: 01-Sep-2016 11:34:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\07.0000.d

Column 1 : Det: 0005
Process Host: XAWRK016

First Level Reviewer: phantl Date: 29-Sep-2016 13:20:11

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride	1.958	1.950	0.008	131873285	5.00	5.05	
2 Chloride	3.317	3.350	-0.033	1622162453	100.0	99.2	
3 Nitrite as N	3.925	3.967	-0.042	182708982	5.00	5.01	
4 Bromide	6.392	6.508	-0.116	35494343	5.00	4.96	
5 Nitrate as N	6.850	6.992	-0.142	208834676	5.00	5.02	
6 Sulfate	9.292	9.642	-0.350	1215534322	100.0	100.6	
7 Orthophosphate as P	11.792	12.292	-0.500	79846695	5.00	4.41	

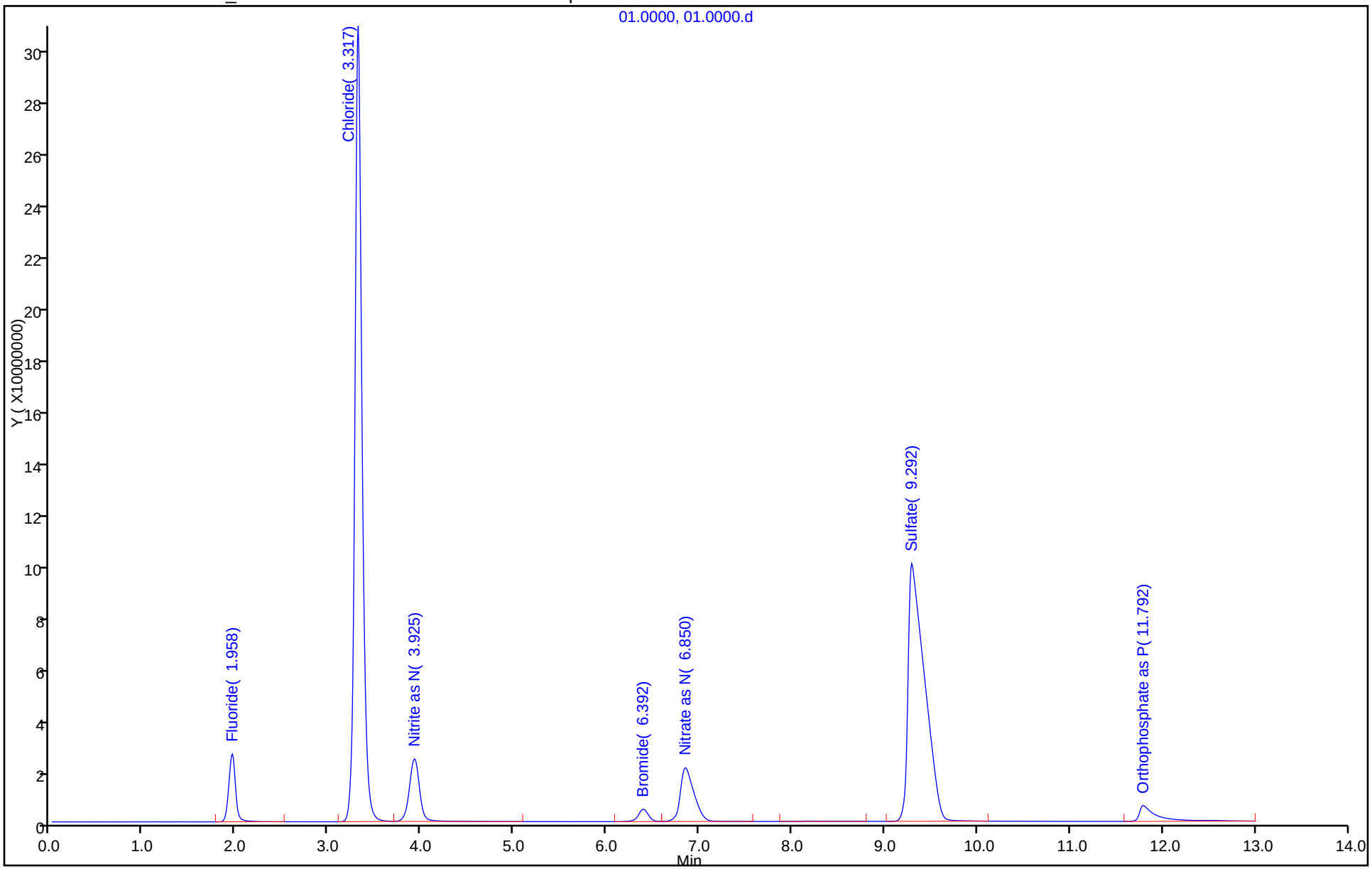
Reagents:

IC LCS_00703 Amount Added: 5.00 Units: mL

Report Date: 30-Sep-2016 07:19:54 Chrom Revision: 2.2 08-Sep-2016 14:45:52

TestAmerica Denver

Data File:	\\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\01.0000.d				
Injection Date:	29-Sep-2016 09:29:00	Instrument ID:	WC_IonChrom6	Operator ID:	
Lims ID:	CCV			Worklist Smp#:	1
Client ID:					
Injection Vol:	25.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC6	Limit Group:	Wet - Anions 28D		



TestAmerica Denver
Area/Height Percent Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\02.0000.d
Lims ID: CCB
Client ID:
Sample Type: CCB
Inject. Date: 29-Sep-2016 09:47:00 ALS Bottle#: 0 Worklist Smp#: 2
Injection Vol: 25.0 ul Dil. Factor: 1.0000
Sample Info: 280-0051374-002
Operator ID: Instrument ID: WC_IonChrom6

Method: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\Anions_IC6.m
Limit Group: Wet - Anions
Last Update: 30-Sep-2016 07:19:54 Calib Date: 01-Sep-2016 11:34:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\07.0000.d
Process Host: XAWRK016

Detector: 0005
Number of peaks found: 2

RT	Start RT	End RT	Area	Area%	A/Ht Ratio	Flags	Compound Identification
8.275	8.000	8.650	1285280	70.77	12.77		
12.675	12.275	12.850	530747	29.23	15.01		7 Orthophosphate as P
			1816027			Totals	

Total Unknown Area% = 70.77

Flag Legend
M - Manually Integrated
A - User Assigned Compound
B - Overlapped Base Peak
O - Overlapping Peak
e - Potential Peak Saturation

TestAmerica Denver
Target Compound Quantitation Report

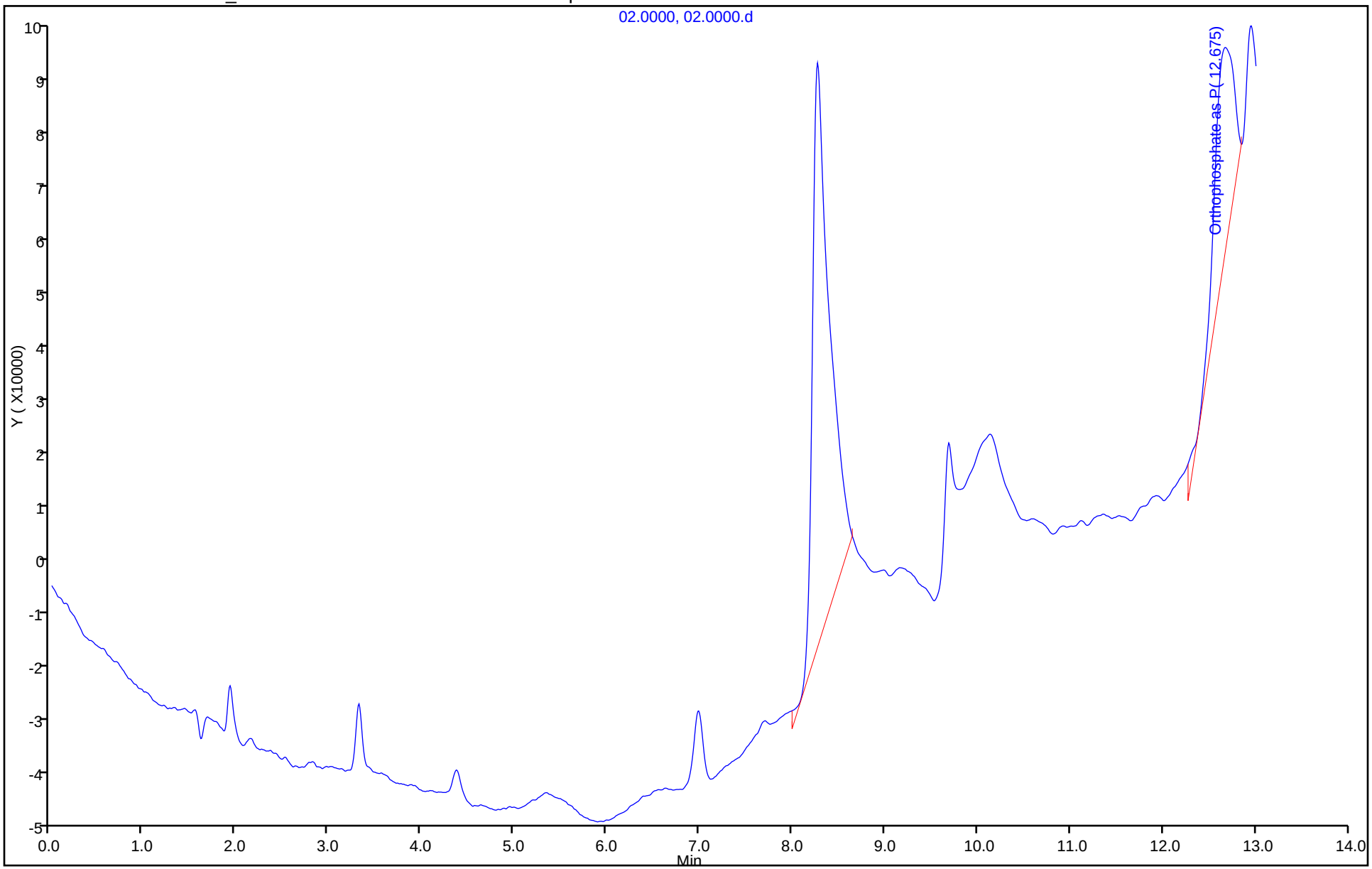
Data File:	\\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\02.0000.d				
Lims ID:	CCB				
Client ID:					
Sample Type:	CCB				
Inject. Date:	29-Sep-2016 09:47:00	ALS Bottle#:	0	Worklist Smp#:	2
Injection Vol:	25.0 ul	Dil. Factor:	1.0000		
Sample Info:	280-0051374-002				
Operator ID:		Instrument ID:	WC_IonChrom6		
Method:	\\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\Anions_IC6.m				
Limit Group:	Wet - Anions				
Last Update:	30-Sep-2016 07:19:54	Calib Date:	01-Sep-2016 11:34:00		
Integrator:	Falcon				
Quant Method:	External Standard	Quant By:	Initial Calibration		
Last ICal File:	\\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\07.0000.d				
Column 1 :			Det: 0005		
Process Host:	XAWRK016				

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride		1.950				ND	
2 Chloride		3.350				ND	
3 Nitrite as N		3.967				ND	
4 Bromide		6.508				ND	
5 Nitrate as N		6.992				ND	
6 Sulfate		9.642				ND	
7 Orthophosphate as P	12.675	12.292	0.383	530747		-0.0997	

Report Date: 30-Sep-2016 07:19:56 Chrom Revision: 2.2 08-Sep-2016 14:45:52

TestAmerica Denver

Data File:	\\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\02.0000.d				
Injection Date:	29-Sep-2016 09:47:00	Instrument ID:	WC_IonChrom6	Operator ID:	
Lims ID:	CCB			Worklist Smp#:	2
Client ID:					
Injection Vol:	25.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC6	Limit Group:	Wet - Anions		



TestAmerica Denver
Area/Height Percent Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\02.0000.d
Lims ID: CCB
Client ID:
Sample Type: CCB
Inject. Date: 29-Sep-2016 09:47:00 ALS Bottle#: 0 Worklist Smp#: 2
Injection Vol: 25.0 ul Dil. Factor: 1.0000
Sample Info: 280-0051374-002
Operator ID: Instrument ID: WC_IonChrom6

Method: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\Anions_IC6.m
Limit Group: Wet - Anions 28D
Last Update: 30-Sep-2016 07:19:54 Calib Date: 01-Sep-2016 11:34:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\07.0000.d
Process Host: XAWRK016

Detector: 0005
Number of peaks found: 2

RT	Start RT	End RT	Area	Area%	A/Ht Ratio	Flags	Compound Identification
8.275	8.000	8.650	1285280	70.77	12.77		
12.675	12.275	12.850	530747	29.23	15.01		7 Orthophosphate as P
			1816027			Totals	

Total Unknown Area% = 70.77

Flag Legend
M - Manually Integrated
A - User Assigned Compound
B - Overlapped Base Peak
O - Overlapping Peak
e - Potential Peak Saturation

TestAmerica Denver
Target Compound Quantitation Report

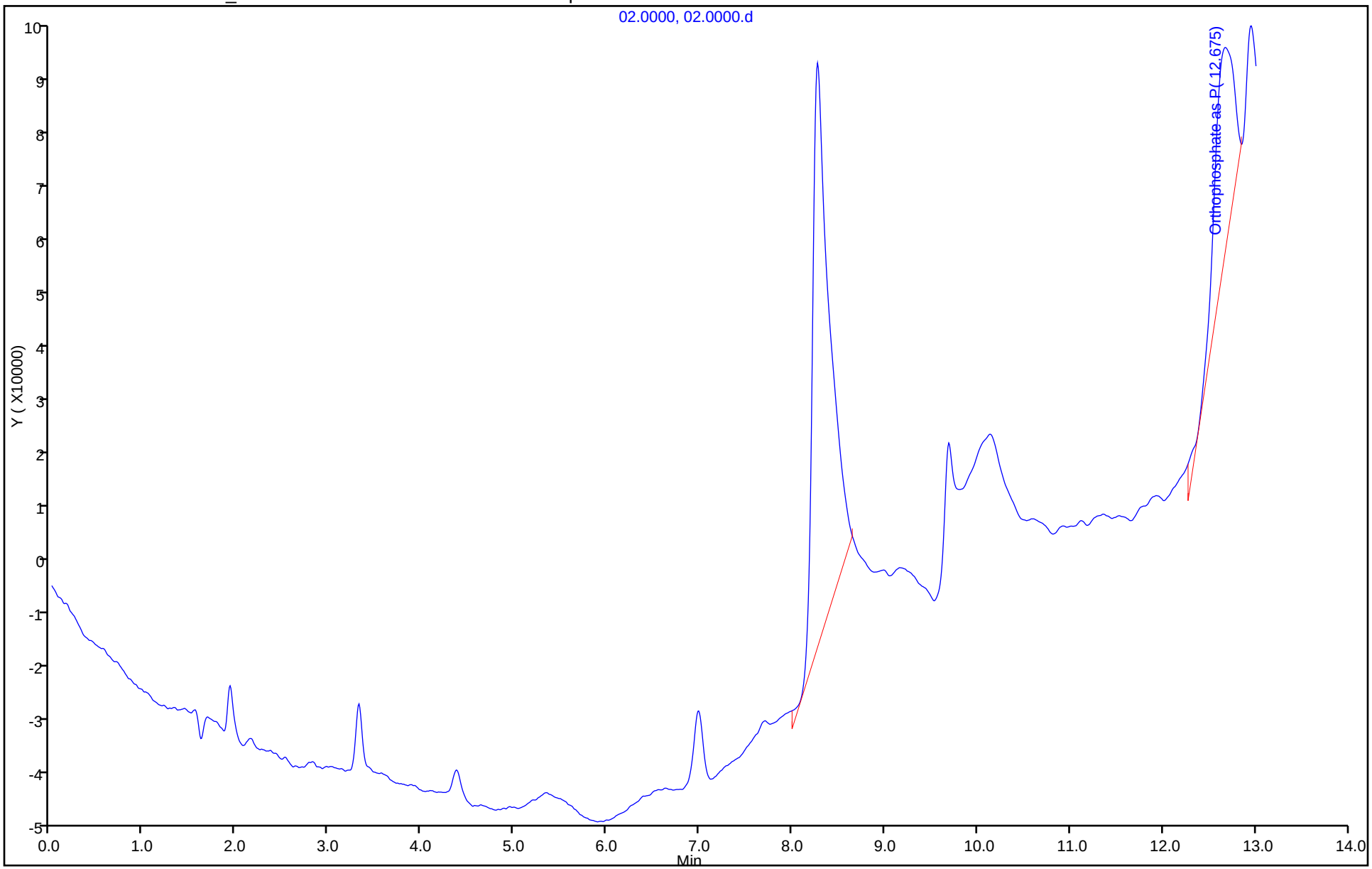
Data File:	\\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\02.0000.d				
Lims ID:	CCB				
Client ID:					
Sample Type:	CCB				
Inject. Date:	29-Sep-2016 09:47:00	ALS Bottle#:	0	Worklist Smp#:	2
Injection Vol:	25.0 ul	Dil. Factor:	1.0000		
Sample Info:	280-0051374-002				
Operator ID:		Instrument ID:	WC_IonChrom6		
Method:	\\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\Anions_IC6.m				
Limit Group:	Wet - Anions 28D				
Last Update:	30-Sep-2016 07:19:54	Calib Date:	01-Sep-2016 11:34:00		
Integrator:	Falcon				
Quant Method:	External Standard	Quant By:	Initial Calibration		
Last ICal File:	\\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\07.0000.d				
Column 1 :			Det: 0005		
Process Host:	XAWRK016				

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride		1.950				ND	
2 Chloride		3.350				ND	
3 Nitrite as N		3.967				ND	
4 Bromide		6.508				ND	
5 Nitrate as N		6.992				ND	
6 Sulfate		9.642				ND	
7 Orthophosphate as P	12.675	12.292	0.383	530747		-0.0997	

Report Date: 30-Sep-2016 07:19:56 Chrom Revision: 2.2 08-Sep-2016 14:45:52

TestAmerica Denver

Data File:	\\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\02.0000.d				
Injection Date:	29-Sep-2016 09:47:00	Instrument ID:	WC_IonChrom6	Operator ID:	
Lims ID:	CCB			Worklist Smp#:	2
Client ID:					
Injection Vol:	25.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC6	Limit Group:	Wet - Anions 28D		



TestAmerica Denver
Area/Height Percent Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\03.0000.d
Lims ID: MRL
Client ID:
Sample Type: MRL
Inject. Date: 29-Sep-2016 10:04:00 ALS Bottle#: 0 Worklist Smp#: 3
Injection Vol: 25.0 ul Dil. Factor: 1.0000
Sample Info: 280-0051374-003
Operator ID: Instrument ID: WC_IonChrom6

Method: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\Anions_IC6.m
Limit Group: Wet - Anions
Last Update: 30-Sep-2016 07:19:54 Calib Date: 01-Sep-2016 11:34:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\07.0000.d
Process Host: XAWRK016

Detector: 0005
Number of peaks found: 8

RT	Start RT	End RT	Area	Area%	A/Ht Ratio	Flags	Compound Identification
1.933	1.808	2.133	5775309	5.78	3.97		1 Fluoride
3.292	3.083	3.658	40463131	40.53	5.11		2 Chloride
3.867	3.658	4.200	8063526	8.08	5.72		3 Nitrite as N
6.367	6.117	6.583	1350690	1.35	7.83		4 Bromide
6.942	6.625	7.233	8406533	8.42	7.58		5 Nitrate as N
8.275	8.067	8.650	1400885	1.40	14.05		
9.633	9.375	10.025	30170592	30.22	5.47		6 Sulfate
12.550	12.225	13.000	4211386	4.22	19.15		7 Orthophosphate as P
			99842052			Totals	

Total Unknown Area% = 1.40

Flag Legend
M - Manually Integrated
A - User Assigned Compound
B - Overlapped Base Peak
O - Overlapping Peak
e - Potential Peak Saturation

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\03.0000.d
Lims ID: MRL
Client ID:
Sample Type: MRL
Inject. Date: 29-Sep-2016 10:04:00 ALS Bottle#: 0 Worklist Smp#: 3
Injection Vol: 25.0 ul Dil. Factor: 1.0000
Sample Info: 280-0051374-003
Operator ID: Instrument ID: WC_IonChrom6

Method: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\Anions_IC6.m
Limit Group: Wet - Anions
Last Update: 30-Sep-2016 07:19:54 Calib Date: 01-Sep-2016 11:34:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\07.0000.d

Column 1 : Det: 0005
Process Host: XAWRK016

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride	1.933	1.950	-0.017	5775309	0.2000	0.1759	
2 Chloride	3.292	3.350	-0.058	40463131	2.50	2.52	
3 Nitrite as N	3.867	3.967	-0.100	8063526	0.2000	0.1846	
4 Bromide	6.367	6.508	-0.141	1350690	0.2000	0.2094	
5 Nitrate as N	6.942	6.992	-0.050	8406533	0.2000	0.2116	
6 Sulfate	9.633	9.642	-0.009	30170592	2.50	2.51	
7 Orthophosphate as P	12.550	12.292	0.258	4211386	0.2000	0.1096	

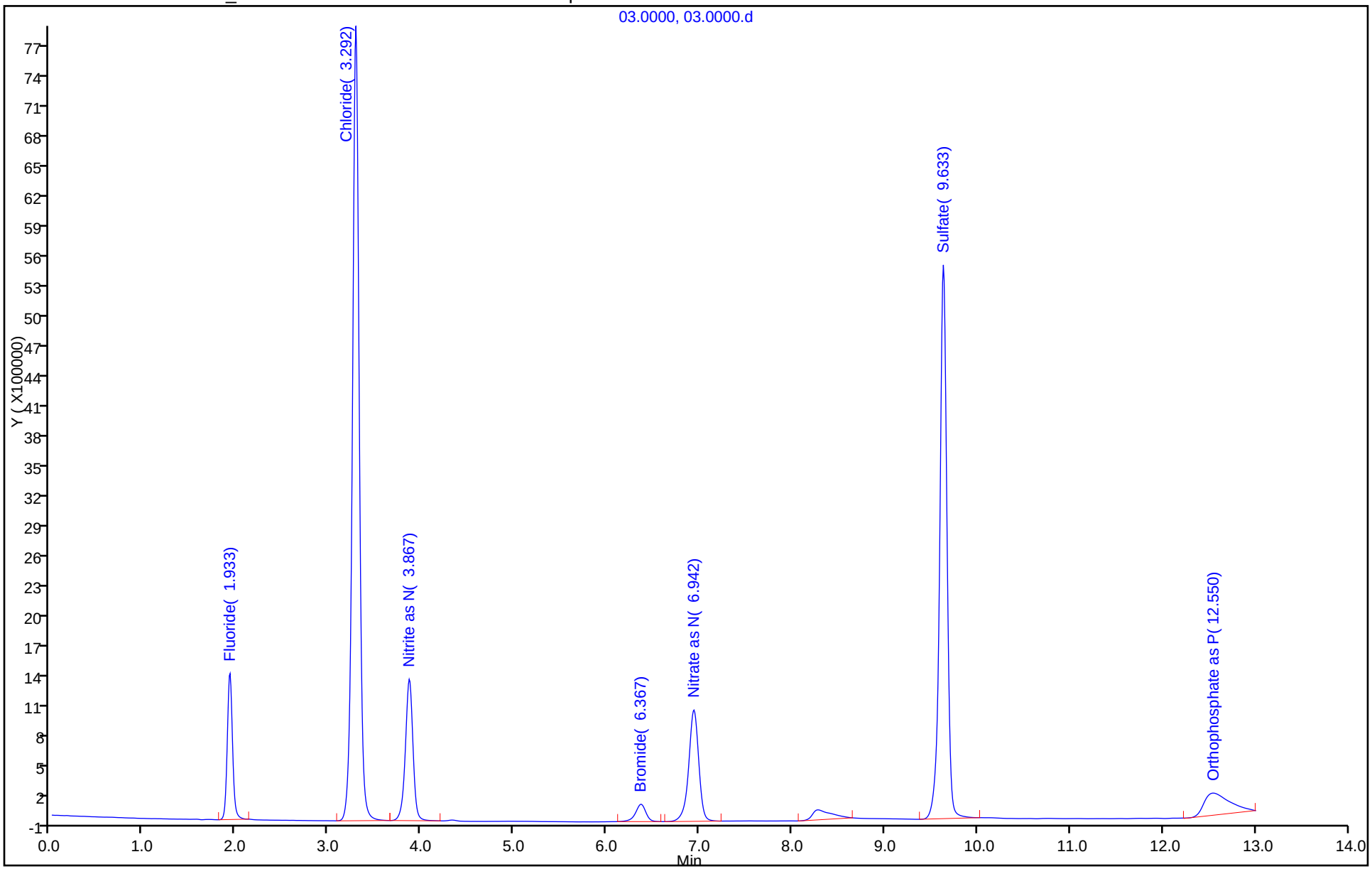
Reagents:

IC CAL cl/so4_00118 Amount Added: 0.05 Units: mL
IC Cal low_00233 Amount Added: 0.02 Units: mL

Report Date: 30-Sep-2016 07:19:58 Chrom Revision: 2.2 08-Sep-2016 14:45:52

TestAmerica Denver

Data File:	\\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\03.0000.d				
Injection Date:	29-Sep-2016 10:04:00	Instrument ID:	WC_IonChrom6	Operator ID:	
Lims ID:	MRL			Worklist Smp#:	3
Client ID:					
Injection Vol:	25.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC6	Limit Group:	Wet - Anions		



TestAmerica Denver
Area/Height Percent Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\03.0000.d
Lims ID: MRL
Client ID:
Sample Type: MRL
Inject. Date: 29-Sep-2016 10:04:00 ALS Bottle#: 0 Worklist Smp#: 3
Injection Vol: 25.0 ul Dil. Factor: 1.0000
Sample Info: 280-0051374-003
Operator ID: Instrument ID: WC_IonChrom6

Method: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\Anions_IC6.m
Limit Group: Wet - Anions 28D
Last Update: 30-Sep-2016 07:19:54 Calib Date: 01-Sep-2016 11:34:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\07.0000.d
Process Host: XAWRK016

Detector: 0005
Number of peaks found: 8

RT	Start RT	End RT	Area	Area%	A/Ht Ratio	Flags	Compound Identification
1.933	1.808	2.133	5775309	5.78	3.97		1 Fluoride
3.292	3.083	3.658	40463131	40.53	5.11		2 Chloride
3.867	3.658	4.200	8063526	8.08	5.72		3 Nitrite as N
6.367	6.117	6.583	1350690	1.35	7.83		4 Bromide
6.942	6.625	7.233	8406533	8.42	7.58		5 Nitrate as N
8.275	8.067	8.650	1400885	1.40	14.05		
9.633	9.375	10.025	30170592	30.22	5.47		6 Sulfate
12.550	12.225	13.000	4211386	4.22	19.15		7 Orthophosphate as P
			99842052			Totals	

Total Unknown Area% = 1.40

Flag Legend
M - Manually Integrated
A - User Assigned Compound
B - Overlapped Base Peak
O - Overlapping Peak
e - Potential Peak Saturation

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\03.0000.d
Lims ID: MRL
Client ID:
Sample Type: MRL
Inject. Date: 29-Sep-2016 10:04:00 ALS Bottle#: 0 Worklist Smp#: 3
Injection Vol: 25.0 ul Dil. Factor: 1.0000
Sample Info: 280-0051374-003
Operator ID: Instrument ID: WC_IonChrom6

Method: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\Anions_IC6.m
Limit Group: Wet - Anions 28D
Last Update: 30-Sep-2016 07:19:54 Calib Date: 01-Sep-2016 11:34:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\07.0000.d

Column 1 : Det: 0005
Process Host: XAWRK016

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride	1.933	1.950	-0.017	5775309	0.2000	0.1759	
2 Chloride	3.292	3.350	-0.058	40463131	2.50	2.52	
3 Nitrite as N	3.867	3.967	-0.100	8063526	0.2000	0.1846	
4 Bromide	6.367	6.508	-0.141	1350690	0.2000	0.2094	
5 Nitrate as N	6.942	6.992	-0.050	8406533	0.2000	0.2116	
6 Sulfate	9.633	9.642	-0.009	30170592	2.50	2.51	
7 Orthophosphate as P	12.550	12.292	0.258	4211386	0.2000	0.1096	

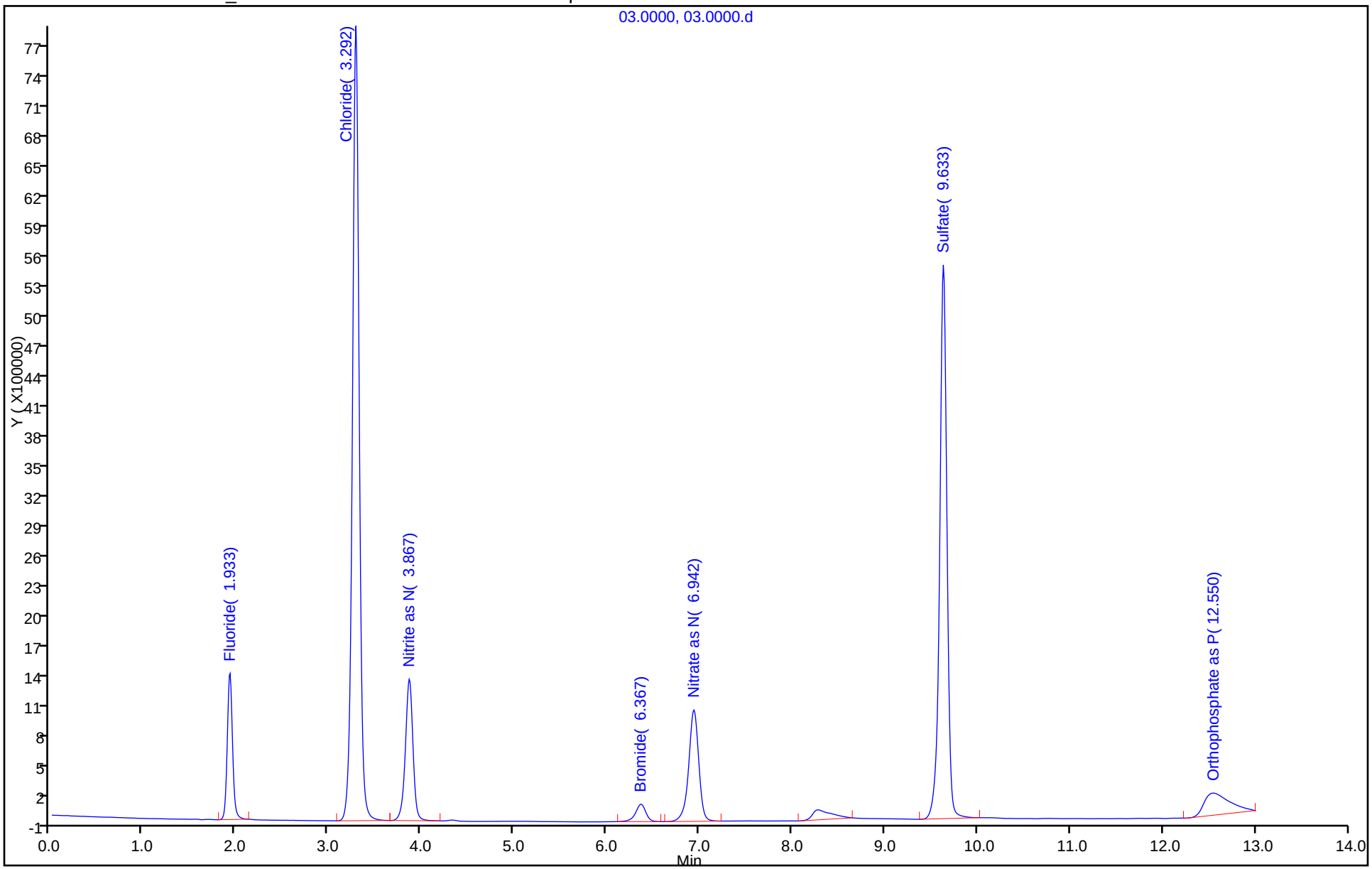
Reagents:

IC CAL cl/so4_00118 Amount Added: 0.05 Units: mL
IC Cal low_00233 Amount Added: 0.02 Units: mL

Report Date: 30-Sep-2016 07:19:58 Chrom Revision: 2.2 08-Sep-2016 14:45:52

TestAmerica Denver

Data File:	\\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\03.0000.d				
Injection Date:	29-Sep-2016 10:04:00	Instrument ID:	WC_IonChrom6	Operator ID:	
Lims ID:	MRL			Worklist Smp#:	3
Client ID:					
Injection Vol:	25.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC6	Limit Group:	Wet - Anions 28D		



Report Date: 30-Sep-2016 07:20:07 Chrom Revision: 2.2 08-Sep-2016 14:45:52

TestAmerica Denver
Area/Height Percent Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\07.0000.d
Lims ID: LCS 280-344354/1-A
Client ID:
Sample Type: LCS
Inject. Date: 29-Sep-2016 16:52:00 ALS Bottle#: 0 Worklist Smp#: 7
Injection Vol: 25.0 ul Dil. Factor: 1.0000
Sample Info: 280-0051374-007
Misc. Info.: 29783 F
Operator ID: Instrument ID: WC_IonChrom6

Method: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\Anions_IC6.m
Limit Group: Wet - Anions
Last Update: 30-Sep-2016 07:19:54 Calib Date: 01-Sep-2016 11:34:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\07.0000.d
Process Host: XAWRK016

First Level Reviewer: bensona Date: 30-Sep-2016 07:18:07

Detector: 0005
Number of peaks found: 8

RT	Start RT	End RT	Area	Area%	A/Ht Ratio	Flags	Compound Identification
1.950	1.767	2.517	134725052	3.80	5.13		1 Fluoride
3.325	3.108	3.725	1668058293	47.03	5.44		2 Chloride
3.950	3.725	5.125	184344882	5.20	7.78		3 Nitrite as N
6.475	6.100	6.667	35449459	1.00	7.67		4 Bromide
6.933	6.675	7.433	209930073	5.92	10.42		5 Nitrate as N
8.375	8.133	8.742	2229765	0.06	18.82		
9.542	9.200	10.392	1234252227	34.80	13.27		6 Sulfate
12.242	12.025	13.000	78110898	2.20	14.45		7 Orthophosphate as P
			3547100649			Totals	

Total Unknown Area% = 0.06

Flag Legend
M - Manually Integrated
A - User Assigned Compound
B - Overlapped Base Peak
O - Overlapping Peak
e - Potential Peak Saturation

TestAmerica Denver
Target Compound Quantitation Report

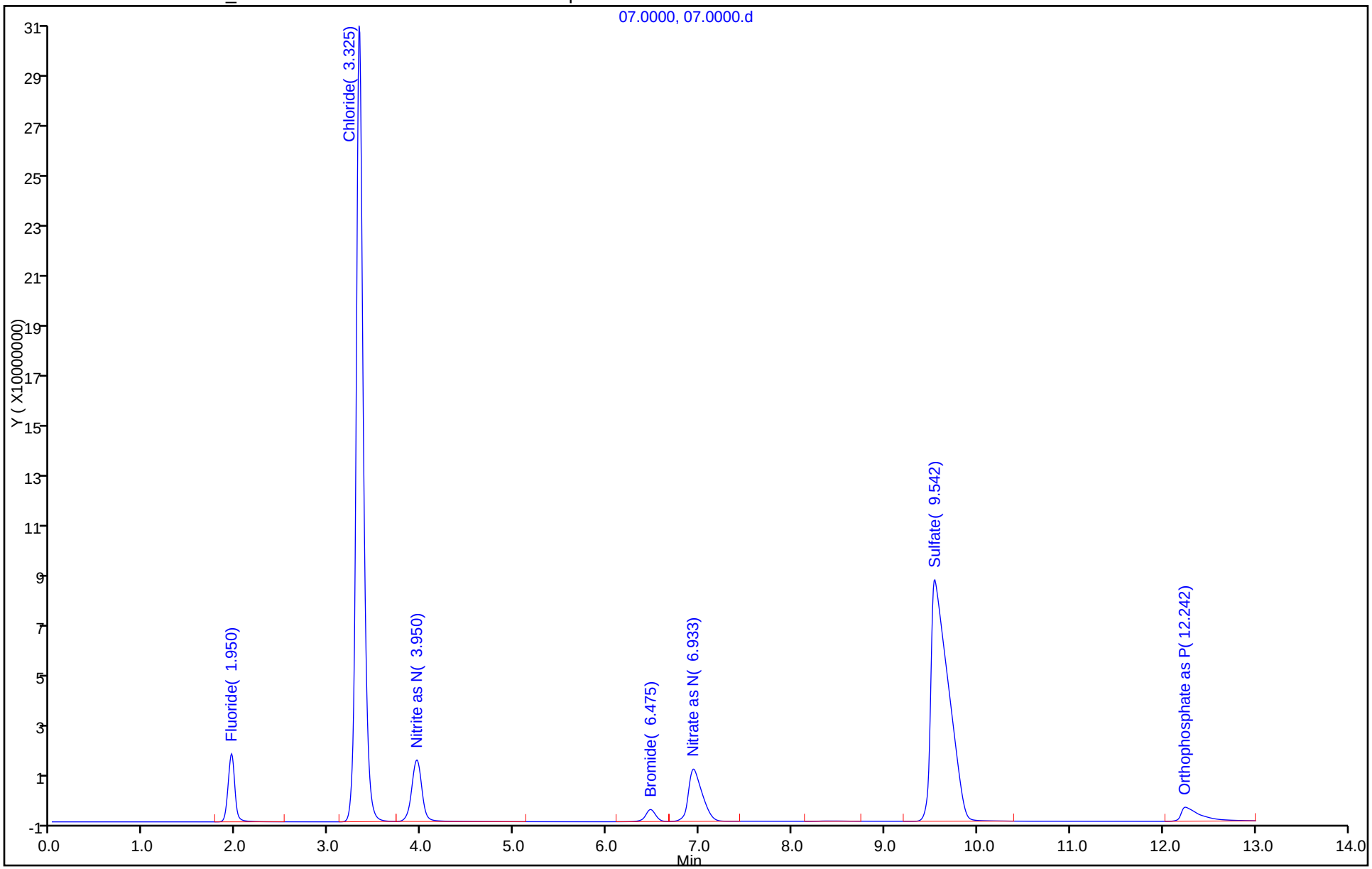
Data File:	\\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\07.0000.d				
Lims ID:	LCS 280-344354/1-A				
Client ID:					
Sample Type:	LCS				
Inject. Date:	29-Sep-2016 16:52:00	ALS Bottle#:	0	Worklist Smp#:	7
Injection Vol:	25.0 ul	Dil. Factor:	1.0000		
Sample Info:	280-0051374-007				
Misc. Info.:	29783 F				
Operator ID:		Instrument ID:	WC_IonChrom6		
Method:	\\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\Anions_IC6.m				
Limit Group:	Wet - Anions				
Last Update:	30-Sep-2016 07:19:54	Calib Date:	01-Sep-2016 11:34:00		
Integrator:	Falcon				
Quant Method:	External Standard	Quant By:	Initial Calibration		
Last ICal File:	\\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\07.0000.d				
Column 1 :			Det: 0005		
Process Host:	XAWRK016				
First Level Reviewer: bensona		Date:	30-Sep-2016 07:18:07		

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride	1.950	1.950	0.000	134725052	5.00	5.16	
2 Chloride	3.325	3.350	-0.025	1668058293	100.0	102.0	
3 Nitrite as N	3.950	3.967	-0.017	184344882	5.00	5.06	
4 Bromide	6.475	6.508	-0.033	35449459	5.00	4.95	
5 Nitrate as N	6.933	6.992	-0.059	209930073	5.00	5.04	
6 Sulfate	9.542	9.642	-0.100	1234252227	100.0	102.1	
7 Orthophosphate as P	12.242	12.292	-0.050	78110898	5.00	4.31	

Report Date: 30-Sep-2016 07:20:07 Chrom Revision: 2.2 08-Sep-2016 14:45:52

TestAmerica Denver

Data File:	\\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\07.0000.d				
Injection Date:	29-Sep-2016 16:52:00	Instrument ID:	WC_IonChrom6	Operator ID:	
Lims ID:	LCS 280-344354/1-A			Worklist Smp#:	7
Client ID:					
Injection Vol:	25.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC6	Limit Group:	Wet - Anions		



TestAmerica Denver
Area/Height Percent Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\07.0000.d
Lims ID: LCS 280-344354/1-A
Client ID:
Sample Type: LCS
Inject. Date: 29-Sep-2016 16:52:00 ALS Bottle#: 0 Worklist Smp#: 7
Injection Vol: 25.0 ul Dil. Factor: 1.0000
Sample Info: 280-0051374-007
Misc. Info.: 29783 F
Operator ID: Instrument ID: WC_IonChrom6

Method: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\Anions_IC6.m
Limit Group: Wet - Anions 28D
Last Update: 30-Sep-2016 07:19:54 Calib Date: 01-Sep-2016 11:34:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\07.0000.d
Process Host: XAWRK016

First Level Reviewer: bensona Date: 30-Sep-2016 07:18:07

Detector: 0005
Number of peaks found: 8

RT	Start RT	End RT	Area	Area%	A/Ht Ratio	Flags	Compound Identification
1.950	1.767	2.517	134725052	3.80	5.13		1 Fluoride
3.325	3.108	3.725	1668058293	47.03	5.44		2 Chloride
3.950	3.725	5.125	184344882	5.20	7.78		3 Nitrite as N
6.475	6.100	6.667	35449459	1.00	7.67		4 Bromide
6.933	6.675	7.433	209930073	5.92	10.42		5 Nitrate as N
8.375	8.133	8.742	2229765	0.06	18.82		
9.542	9.200	10.392	1234252227	34.80	13.27		6 Sulfate
12.242	12.025	13.000	78110898	2.20	14.45		7 Orthophosphate as P
			3547100649			Totals	

Total Unknown Area% = 0.06

Flag Legend
M - Manually Integrated
A - User Assigned Compound
B - Overlapped Base Peak
O - Overlapping Peak
e - Potential Peak Saturation

TestAmerica Denver
Target Compound Quantitation Report

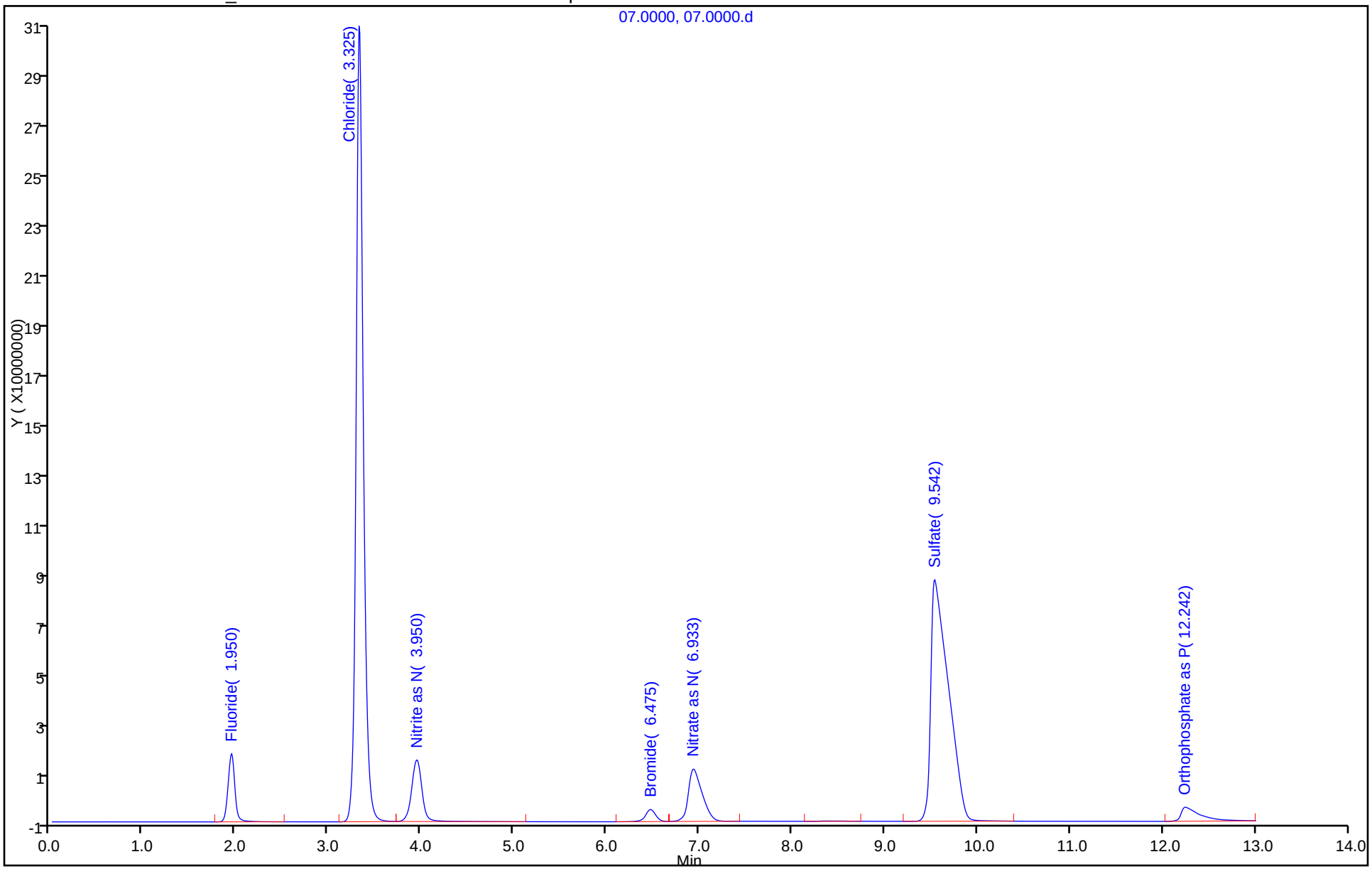
Data File:	\\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\07.0000.d				
Lims ID:	LCS 280-344354/1-A				
Client ID:					
Sample Type:	LCS				
Inject. Date:	29-Sep-2016 16:52:00	ALS Bottle#:	0	Worklist Smp#:	7
Injection Vol:	25.0 ul	Dil. Factor:	1.0000		
Sample Info:	280-0051374-007				
Misc. Info.:	29783 F				
Operator ID:		Instrument ID:	WC_IonChrom6		
Method:	\\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\Anions_IC6.m				
Limit Group:	Wet - Anions 28D				
Last Update:	30-Sep-2016 07:19:54	Calib Date:	01-Sep-2016 11:34:00		
Integrator:	Falcon				
Quant Method:	External Standard	Quant By:	Initial Calibration		
Last ICal File:	\\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\07.0000.d				
Column 1 :			Det: 0005		
Process Host:	XAWRK016				
First Level Reviewer: bensona		Date:	30-Sep-2016 07:18:07		

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride	1.950	1.950	0.000	134725052	5.00	5.16	
2 Chloride	3.325	3.350	-0.025	1668058293	100.0	102.0	
3 Nitrite as N	3.950	3.967	-0.017	184344882	5.00	5.06	
4 Bromide	6.475	6.508	-0.033	35449459	5.00	4.95	
5 Nitrate as N	6.933	6.992	-0.059	209930073	5.00	5.04	
6 Sulfate	9.542	9.642	-0.100	1234252227	100.0	102.1	
7 Orthophosphate as P	12.242	12.292	-0.050	78110898	5.00	4.31	

Report Date: 30-Sep-2016 07:20:07 Chrom Revision: 2.2 08-Sep-2016 14:45:52

TestAmerica Denver

Data File:	\\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\07.0000.d				
Injection Date:	29-Sep-2016 16:52:00	Instrument ID:	WC_IonChrom6	Operator ID:	
Lims ID:	LCS 280-344354/1-A			Worklist Smp#:	7
Client ID:					
Injection Vol:	25.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC6	Limit Group:	Wet - Anions 28D		



TestAmerica Denver
Area/Height Percent Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\08.0000.d
Lims ID: LCSD 280-344354/2-A
Client ID:
Sample Type: LCSD
Inject. Date: 29-Sep-2016 17:10:00 ALS Bottle#: 0 Worklist Smp#: 8
Injection Vol: 25.0 ul Dil. Factor: 1.0000
Sample Info: 280-0051374-008
Misc. Info.: 25660 F
Operator ID: Instrument ID: WC_IonChrom6

Method: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\Anions_IC6.m
Limit Group: Wet - Anions
Last Update: 30-Sep-2016 07:19:54 Calib Date: 01-Sep-2016 11:34:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\07.0000.d
Process Host: XAWRK016

First Level Reviewer: bensona Date: 30-Sep-2016 07:18:18

Detector: 0005
Number of peaks found: 8

RT	Start RT	End RT	Area	Area%	A/Ht Ratio	Flags	Compound Identification
1.933	1.775	2.517	134755666	3.78	4.97		1 Fluoride
3.233	3.025	3.600	1668225730	46.86	5.23		2 Chloride
3.808	3.600	4.842	186461138	5.24	7.55		3 Nitrite as N
6.325	6.008	6.542	35549699	1.00	8.07		4 Bromide
6.808	6.542	7.383	210558516	5.91	10.78		5 Nitrate as N
8.342	8.042	8.833	3189020	0.09	20.38		
9.525	9.208	10.392	1238154365	34.78	14.00		6 Sulfate
12.167	11.917	13.000	83391063	2.34	13.13		7 Orthophosphate as P
			3560285197			Totals	

Total Unknown Area% = 0.09

Flag Legend
M - Manually Integrated
A - User Assigned Compound
B - Overlapped Base Peak
O - Overlapping Peak
e - Potential Peak Saturation

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\08.0000.d
Lims ID: LCSD 280-344354/2-A
Client ID:
Sample Type: LCSD
Inject. Date: 29-Sep-2016 17:10:00 ALS Bottle#: 0 Worklist Smp#: 8
Injection Vol: 25.0 ul Dil. Factor: 1.0000
Sample Info: 280-0051374-008
Misc. Info.: 25660 F
Operator ID: Instrument ID: WC_IonChrom6

Method: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\Anions_IC6.m
Limit Group: Wet - Anions
Last Update: 30-Sep-2016 07:19:54 Calib Date: 01-Sep-2016 11:34:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\07.0000.d

Column 1 : Det: 0005
Process Host: XAWRK016

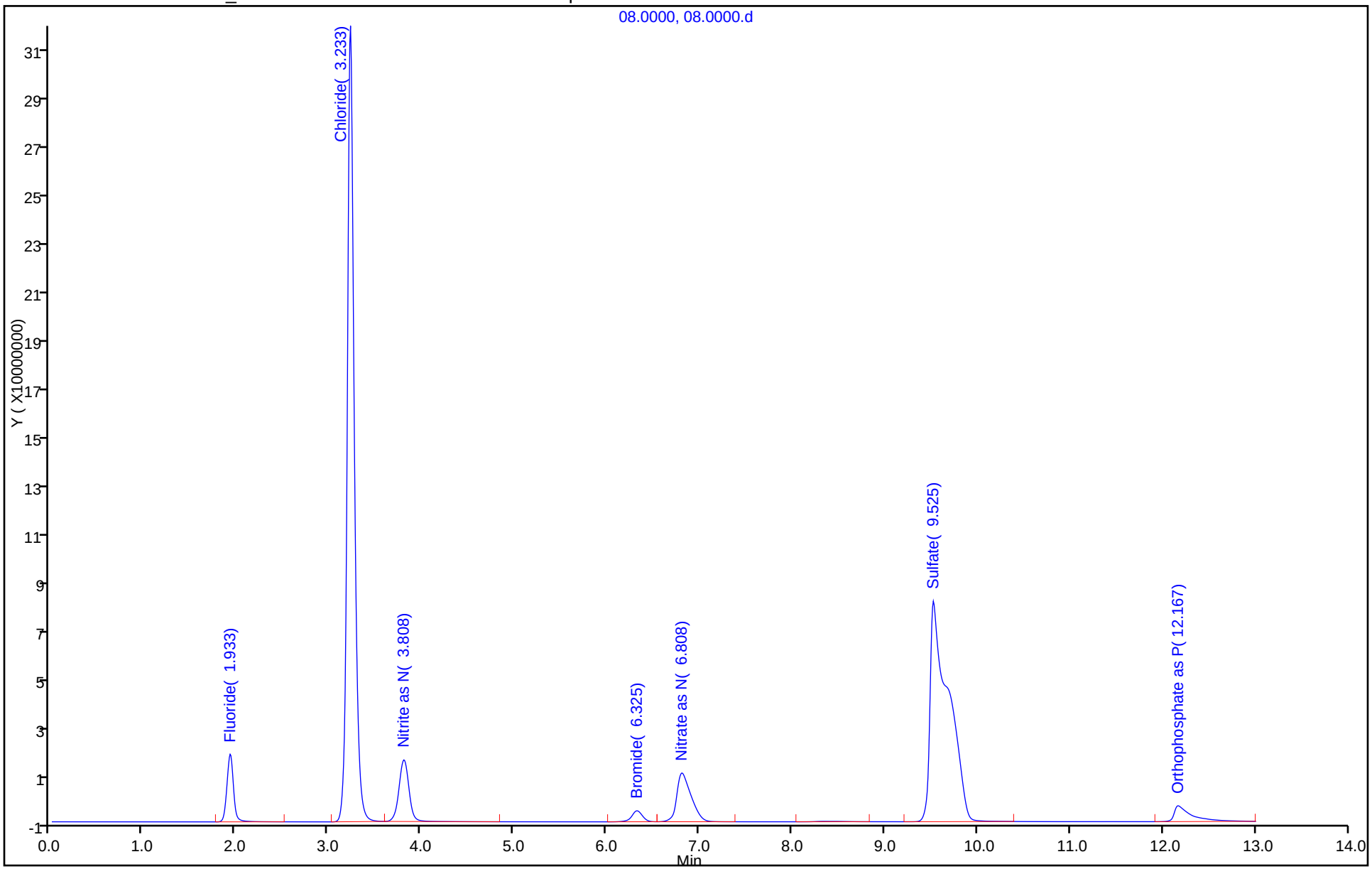
First Level Reviewer: bensona Date: 30-Sep-2016 07:18:18

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride	1.933	1.950	-0.017	134755666	5.00	5.16	
2 Chloride	3.233	3.350	-0.117	1668225730	100.0	102.0	
3 Nitrite as N	3.808	3.967	-0.159	186461138	5.00	5.12	
4 Bromide	6.325	6.508	-0.183	35549699	5.00	4.97	
5 Nitrate as N	6.808	6.992	-0.184	210558516	5.00	5.06	
6 Sulfate	9.525	9.642	-0.117	1238154365	100.0	102.5	
7 Orthophosphate as P	12.167	12.292	-0.125	83391063	5.00	4.61	

Report Date: 30-Sep-2016 07:20:09 Chrom Revision: 2.2 08-Sep-2016 14:45:52

TestAmerica Denver

Data File:	\\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\08.0000.d				
Injection Date:	29-Sep-2016 17:10:00	Instrument ID:	WC_IonChrom6	Operator ID:	
Lims ID:	LCSD 280-344354/2-A			Worklist Smp#:	8
Client ID:					
Injection Vol:	25.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC6	Limit Group:	Wet - Anions		



TestAmerica Denver
Area/Height Percent Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\08.0000.d
Lims ID: LCSD 280-344354/2-A
Client ID:
Sample Type: LCSD
Inject. Date: 29-Sep-2016 17:10:00 ALS Bottle#: 0 Worklist Smp#: 8
Injection Vol: 25.0 ul Dil. Factor: 1.0000
Sample Info: 280-0051374-008
Misc. Info.: 25660 F
Operator ID: Instrument ID: WC_IonChrom6

Method: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\Anions_IC6.m
Limit Group: Wet - Anions 28D
Last Update: 30-Sep-2016 07:19:54 Calib Date: 01-Sep-2016 11:34:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\07.0000.d
Process Host: XAWRK016

First Level Reviewer: bensona Date: 30-Sep-2016 07:18:18

Detector: 0005
Number of peaks found: 8

RT	Start RT	End RT	Area	Area%	A/Ht Ratio	Flags	Compound Identification
1.933	1.775	2.517	134755666	3.78	4.97		1 Fluoride
3.233	3.025	3.600	1668225730	46.86	5.23		2 Chloride
3.808	3.600	4.842	186461138	5.24	7.55		3 Nitrite as N
6.325	6.008	6.542	35549699	1.00	8.07		4 Bromide
6.808	6.542	7.383	210558516	5.91	10.78		5 Nitrate as N
8.342	8.042	8.833	3189020	0.09	20.38		
9.525	9.208	10.392	1238154365	34.78	14.00		6 Sulfate
12.167	11.917	13.000	83391063	2.34	13.13		7 Orthophosphate as P
			3560285197			Totals	

Total Unknown Area% = 0.09

Flag Legend
M - Manually Integrated
A - User Assigned Compound
B - Overlapped Base Peak
O - Overlapping Peak
e - Potential Peak Saturation

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\08.0000.d
Lims ID: LCSD 280-344354/2-A
Client ID:
Sample Type: LCSD
Inject. Date: 29-Sep-2016 17:10:00 ALS Bottle#: 0 Worklist Smp#: 8
Injection Vol: 25.0 ul Dil. Factor: 1.0000
Sample Info: 280-0051374-008
Misc. Info.: 25660 F
Operator ID: Instrument ID: WC_IonChrom6

Method: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\Anions_IC6.m
Limit Group: Wet - Anions 28D
Last Update: 30-Sep-2016 07:19:54 Calib Date: 01-Sep-2016 11:34:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\07.0000.d

Column 1 : Det: 0005
Process Host: XAWRK016

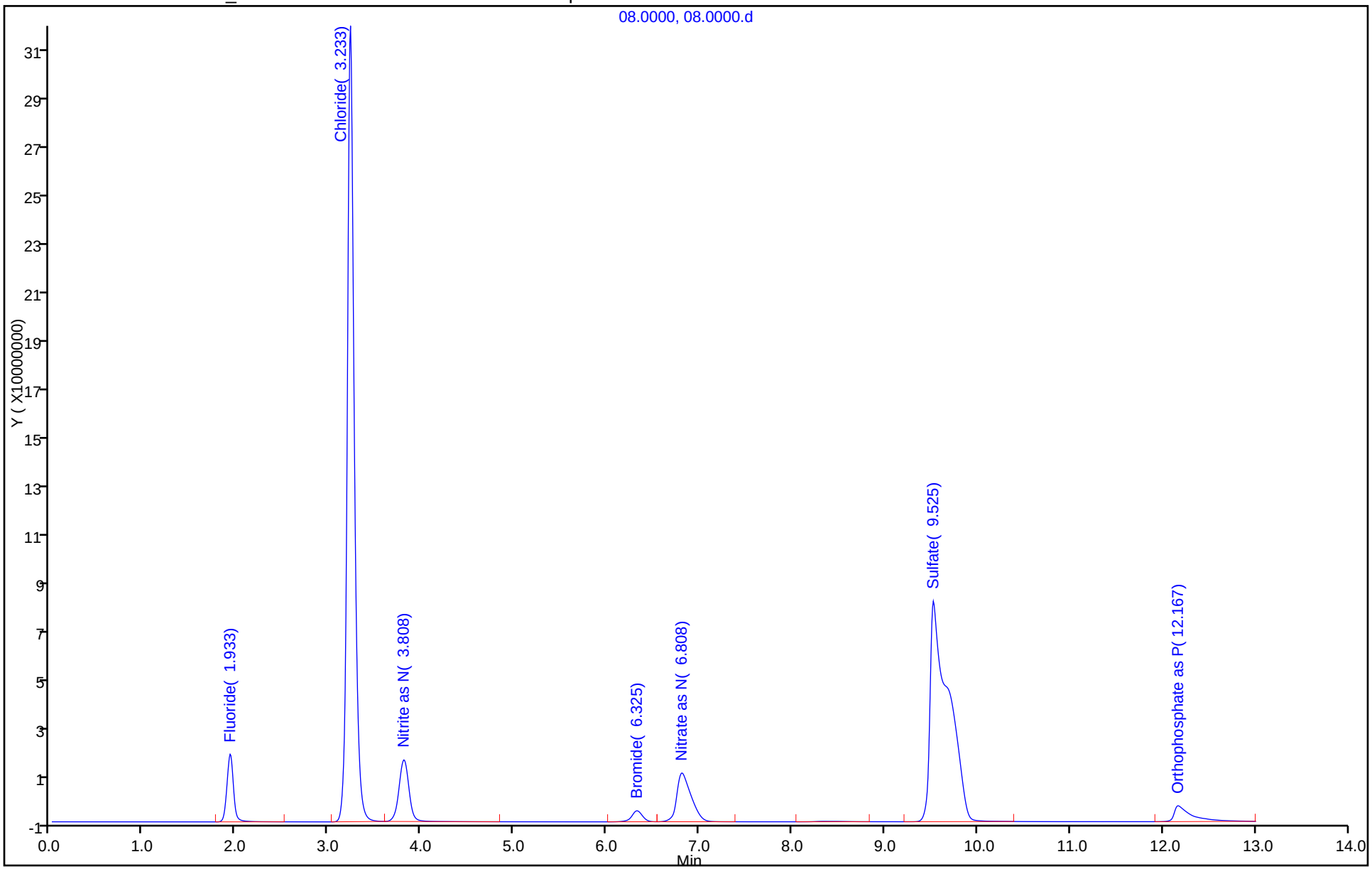
First Level Reviewer: bensona Date: 30-Sep-2016 07:18:18

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride	1.933	1.950	-0.017	134755666	5.00	5.16	
2 Chloride	3.233	3.350	-0.117	1668225730	100.0	102.0	
3 Nitrite as N	3.808	3.967	-0.159	186461138	5.00	5.12	
4 Bromide	6.325	6.508	-0.183	35549699	5.00	4.97	
5 Nitrate as N	6.808	6.992	-0.184	210558516	5.00	5.06	
6 Sulfate	9.525	9.642	-0.117	1238154365	100.0	102.5	
7 Orthophosphate as P	12.167	12.292	-0.125	83391063	5.00	4.61	

Report Date: 30-Sep-2016 07:20:09 Chrom Revision: 2.2 08-Sep-2016 14:45:52

TestAmerica Denver

Data File:	\\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\08.0000.d				
Injection Date:	29-Sep-2016 17:10:00	Instrument ID:	WC_IonChrom6	Operator ID:	
Lims ID:	LCSD 280-344354/2-A			Worklist Smp#:	8
Client ID:					
Injection Vol:	25.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC6	Limit Group:	Wet - Anions 28D		



TestAmerica Denver
Area/Height Percent Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\09.0000.d
Lims ID: MB 280-344354/3-A
Client ID:
Sample Type: MB
Inject. Date: 29-Sep-2016 17:27:00 ALS Bottle#: 0 Worklist Smp#: 9
Injection Vol: 25.0 ul Dil. Factor: 1.0000
Sample Info: 280-0051374-009
Misc. Info.: 22422 F
Operator ID: Instrument ID: WC_IonChrom6

Method: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\Anions_IC6.m
Limit Group: Wet - Anions
Last Update: 30-Sep-2016 07:19:54 Calib Date: 01-Sep-2016 11:34:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\07.0000.d
Process Host: XAWRK016

Detector: 0005
Number of peaks found: 7

RT	Start RT	End RT	Area	Area%	A/Ht Ratio	Flags	Compound Identification
1.917	1.825	2.058	362602	2.26	4.75		1 Fluoride
2.125	2.067	2.217	62363	0.39	3.69		
3.250	3.058	3.575	5093975	31.70	5.04		2 Chloride
6.883	6.642	7.108	582075	3.62	7.80		5 Nitrate as N
8.208	7.858	8.742	3409425	21.22	20.35		
9.725	9.467	10.658	4830118	30.06	6.20		6 Sulfate
12.608	12.208	13.000	1726299	10.74	17.09		7 Orthophosphate as P
			16066857			Totals	

Total Unknown Area% = 21.61

Flag Legend
M - Manually Integrated
A - User Assigned Compound
B - Overlapped Base Peak
O - Overlapping Peak
e - Potential Peak Saturation

TestAmerica Denver
Target Compound Quantitation Report

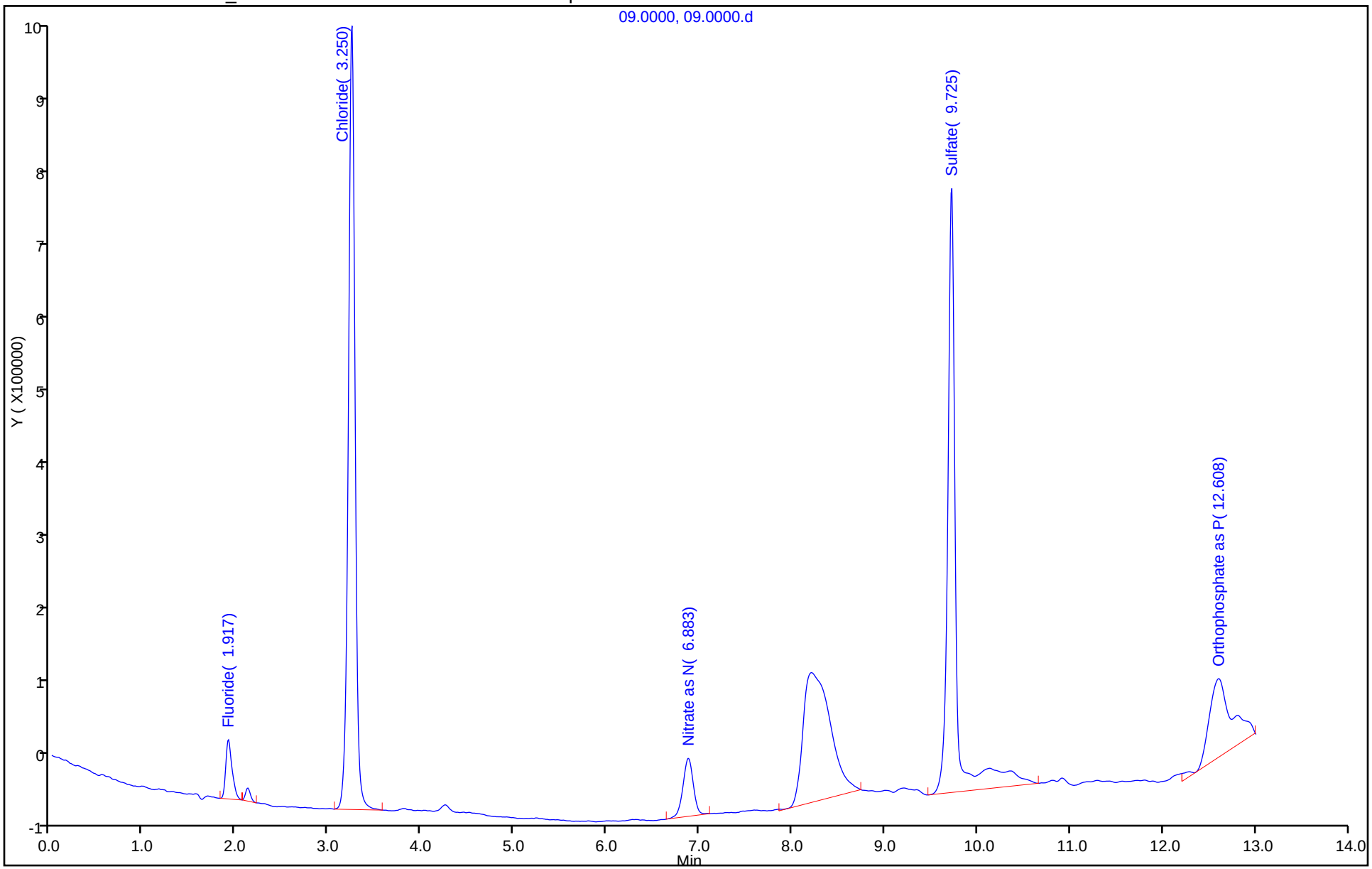
Data File:	\\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\09.0000.d				
Lims ID:	MB 280-344354/3-A				
Client ID:					
Sample Type:	MB				
Inject. Date:	29-Sep-2016 17:27:00	ALS Bottle#:	0	Worklist Smp#:	9
Injection Vol:	25.0 ul	Dil. Factor:	1.0000		
Sample Info:	280-0051374-009				
Misc. Info.:	22422 F				
Operator ID:		Instrument ID:	WC_IonChrom6		
Method:	\\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\Anions_IC6.m				
Limit Group:	Wet - Anions				
Last Update:	30-Sep-2016 07:19:54	Calib Date:	01-Sep-2016 11:34:00		
Integrator:	Falcon				
Quant Method:	External Standard	Quant By:	Initial Calibration		
Last ICal File:	\\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\07.0000.d				
Column 1 :			Det: 0005		
Process Host:	XAWRK016				

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride	1.917	1.950	-0.033	362602		-0.0333	
2 Chloride	3.250	3.350	-0.100	5093975		0.3563	
3 Nitrite as N		3.967				ND	
4 Bromide		6.508				ND	
5 Nitrate as N	6.883	6.992	-0.109	582075		0.0240	
6 Sulfate	9.725	9.642	0.083	4830118		0.4172	
7 Orthophosphate as P	12.608	12.292	0.316	1726299		-0.0317	

Report Date: 30-Sep-2016 07:20:11 Chrom Revision: 2.2 08-Sep-2016 14:45:52

TestAmerica Denver

Data File:	\\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\09.0000.d				
Injection Date:	29-Sep-2016 17:27:00	Instrument ID:	WC_IonChrom6	Operator ID:	
Lims ID:	MB 280-344354/3-A			Worklist Smp#:	9
Client ID:					
Injection Vol:	25.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC6	Limit Group:	Wet - Anions		



TestAmerica Denver
Area/Height Percent Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\09.0000.d
Lims ID: MB 280-344354/3-A
Client ID:
Sample Type: MB
Inject. Date: 29-Sep-2016 17:27:00 ALS Bottle#: 0 Worklist Smp#: 9
Injection Vol: 25.0 ul Dil. Factor: 1.0000
Sample Info: 280-0051374-009
Misc. Info.: 22422 F
Operator ID: Instrument ID: WC_IonChrom6

Method: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\Anions_IC6.m
Limit Group: Wet - Anions 28D
Last Update: 30-Sep-2016 07:19:54 Calib Date: 01-Sep-2016 11:34:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\07.0000.d
Process Host: XAWRK016

Detector: 0005
Number of peaks found: 7

RT	Start RT	End RT	Area	Area%	A/Ht Ratio	Flags	Compound Identification
1.917	1.825	2.058	362602	2.26	4.75		1 Fluoride
2.125	2.067	2.217	62363	0.39	3.69		
3.250	3.058	3.575	5093975	31.70	5.04		2 Chloride
6.883	6.642	7.108	582075	3.62	7.80		5 Nitrate as N
8.208	7.858	8.742	3409425	21.22	20.35		
9.725	9.467	10.658	4830118	30.06	6.20		6 Sulfate
12.608	12.208	13.000	1726299	10.74	17.09		7 Orthophosphate as P
			16066857			Totals	

Total Unknown Area% = 21.61

Flag Legend
M - Manually Integrated
A - User Assigned Compound
B - Overlapped Base Peak
O - Overlapping Peak
e - Potential Peak Saturation

TestAmerica Denver
Target Compound Quantitation Report

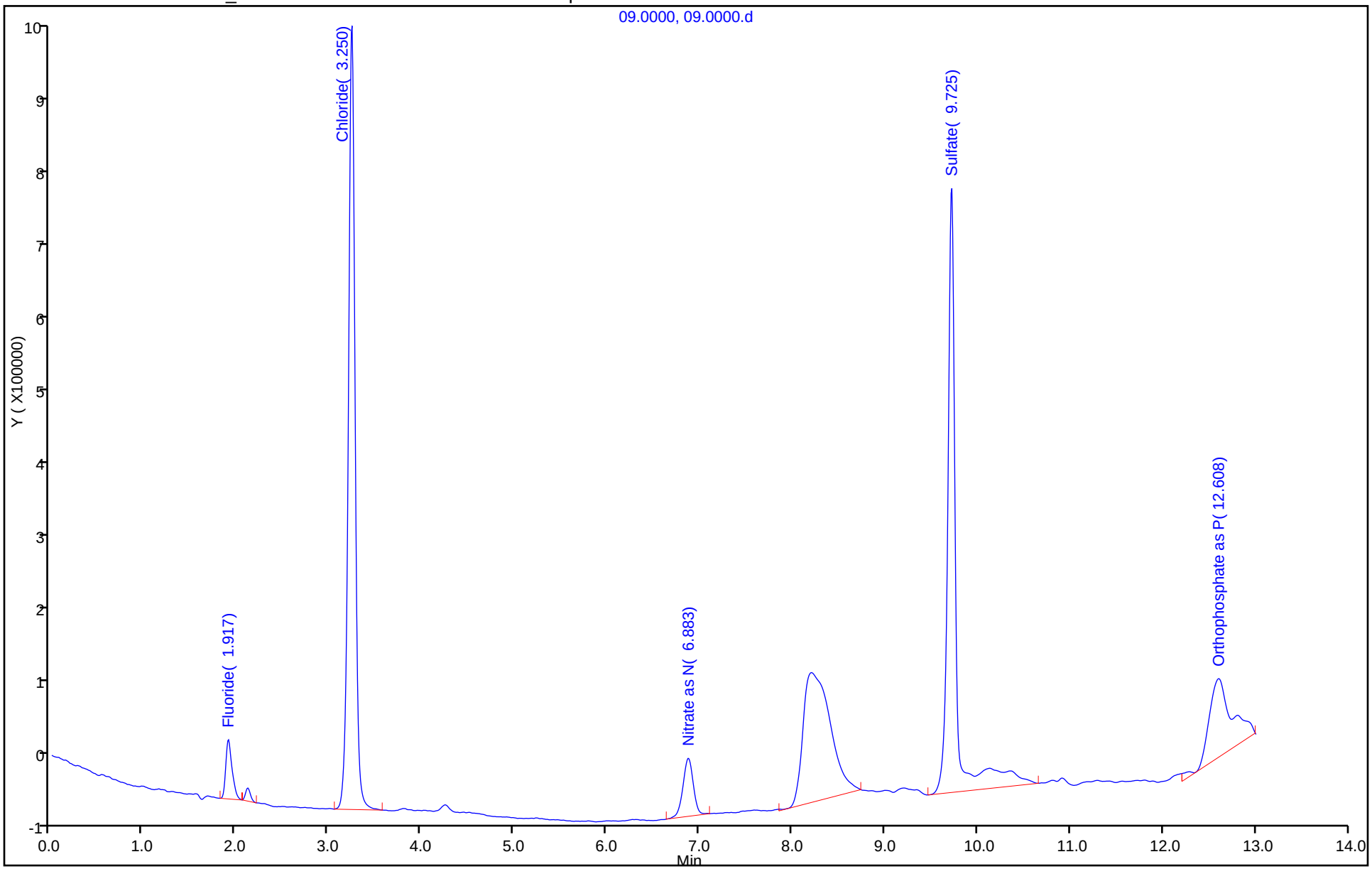
Data File:	\\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\09.0000.d				
Lims ID:	MB 280-344354/3-A				
Client ID:					
Sample Type:	MB				
Inject. Date:	29-Sep-2016 17:27:00	ALS Bottle#:	0	Worklist Smp#:	9
Injection Vol:	25.0 ul	Dil. Factor:	1.0000		
Sample Info:	280-0051374-009				
Misc. Info.:	22422 F				
Operator ID:		Instrument ID:	WC_IonChrom6		
Method:	\\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\Anions_IC6.m				
Limit Group:	Wet - Anions 28D				
Last Update:	30-Sep-2016 07:19:54	Calib Date:	01-Sep-2016 11:34:00		
Integrator:	Falcon				
Quant Method:	External Standard	Quant By:	Initial Calibration		
Last ICal File:	\\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\07.0000.d				
Column 1 :			Det: 0005		
Process Host:	XAWRK016				

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride	1.917	1.950	-0.033	362602		-0.0333	
2 Chloride	3.250	3.350	-0.100	5093975		0.3563	
3 Nitrite as N		3.967				ND	
4 Bromide		6.508				ND	
5 Nitrate as N	6.883	6.992	-0.109	582075		0.0240	
6 Sulfate	9.725	9.642	0.083	4830118		0.4172	
7 Orthophosphate as P	12.608	12.292	0.316	1726299		-0.0317	

Report Date: 30-Sep-2016 07:20:11 Chrom Revision: 2.2 08-Sep-2016 14:45:52

TestAmerica Denver

Data File:	\\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\09.0000.d				
Injection Date:	29-Sep-2016 17:27:00	Instrument ID:	WC_IonChrom6	Operator ID:	
Lims ID:	MB 280-344354/3-A			Worklist Smp#:	9
Client ID:					
Injection Vol:	25.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC6	Limit Group:	Wet - Anions 28D		



TestAmerica Denver
Area/Height Percent Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\10.0000.d
Lims ID: 280-88669-A-3-A
Client ID: CCO2D
Sample Type: Client
Inject. Date: 29-Sep-2016 17:45:00 ALS Bottle#: 0 Worklist Smp#: 10
Injection Vol: 25.0 ul Dil. Factor: 1.0000
Sample Info: 280-0051374-010
Misc. Info.: 7698 F
Operator ID: Instrument ID: WC_IonChrom6

Method: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\Anions_IC6.m
Limit Group: Wet - Anions
Last Update: 30-Sep-2016 07:20:28 Calib Date: 01-Sep-2016 11:34:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\07.0000.d
Process Host: XAWRK016

Detector: 0005
Number of peaks found: 5

RT	Start RT	End RT	Area	Area%	A/Ht Ratio	Flags	Compound Identification
1.925	1.800	2.133	9435588	1.57	4.20		1 Fluoride
3.242	3.100	3.483	1809510	0.30	4.90		2 Chloride
8.308	7.900	8.742	4021405	0.67	21.77		
9.542	9.250	10.300	583677154	97.34	9.88		6 Sulfate
12.817	12.300	13.000	677526	0.11	21.01		
			599621183			Totals	

Total Unknown Area% = 0.78

Flag Legend
M - Manually Integrated
A - User Assigned Compound
B - Overlapped Base Peak
O - Overlapping Peak
e - Potential Peak Saturation

TestAmerica Denver
Target Compound Quantitation Report

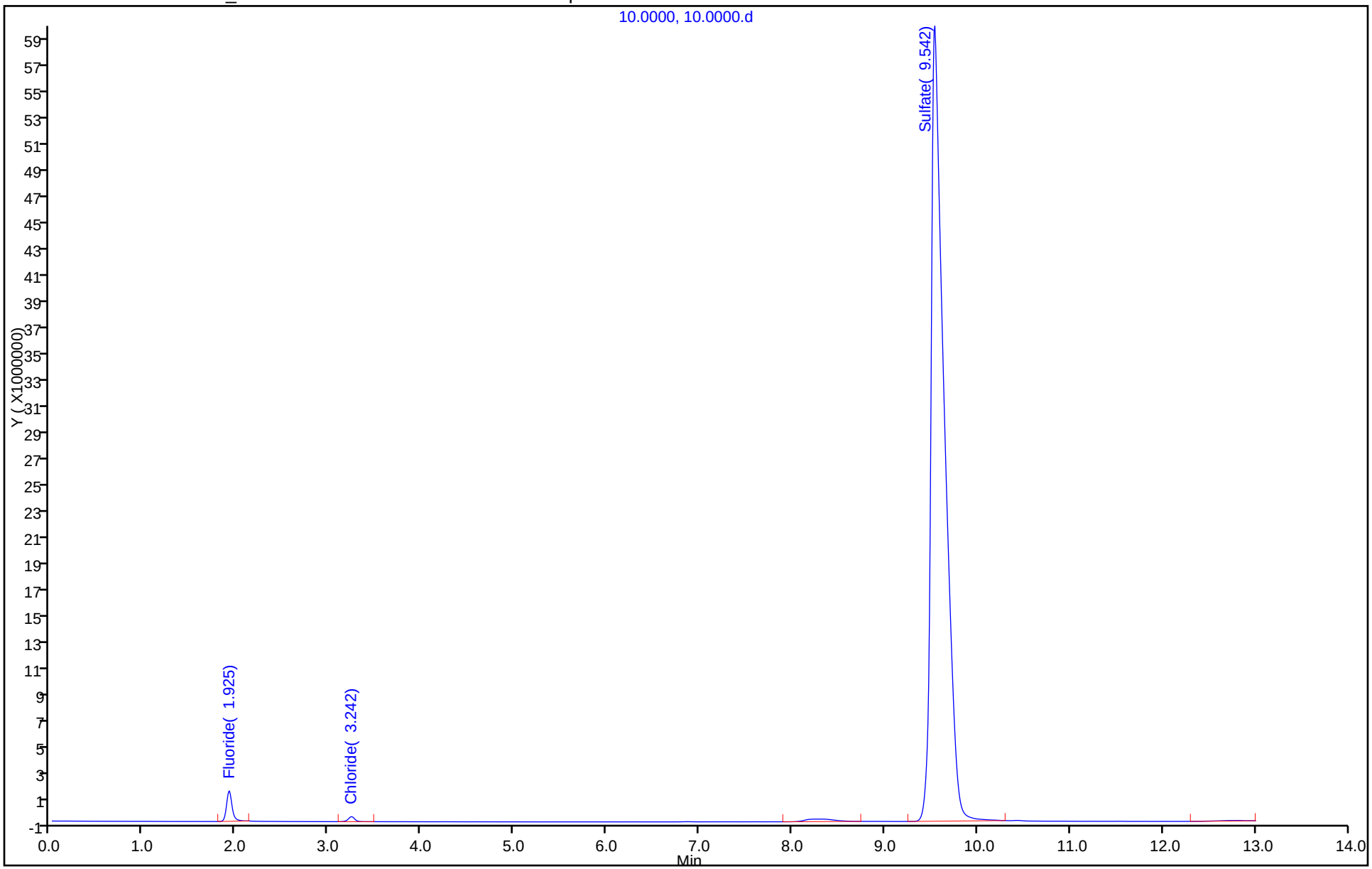
Data File:	\\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\10.0000.d				
Lims ID:	280-88669-A-3-A				
Client ID:	CCO2D				
Sample Type:	Client				
Inject. Date:	29-Sep-2016 17:45:00	ALS Bottle#:	0	Worklist Smp#:	10
Injection Vol:	25.0 ul	Dil. Factor:	1.0000		
Sample Info:	280-0051374-010				
Misc. Info.:	7698 F				
Operator ID:		Instrument ID:	WC_IonChrom6		
Method:	\\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\Anions_IC6.m				
Limit Group:	Wet - Anions				
Last Update:	30-Sep-2016 07:20:28	Calib Date:	01-Sep-2016 11:34:00		
Integrator:	Falcon				
Quant Method:	External Standard	Quant By:	Initial Calibration		
Last ICal File:	\\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\07.0000.d				
Column 1 :			Det: 0005		
Process Host:	XAWRK016				

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ug/ml	Flags
1 Fluoride	1.925	1.950	-0.025	9435588	0.3174	
2 Chloride	3.242	3.350	-0.108	1809510	0.1556	
3 Nitrite as N		3.967			ND	
4 Bromide		6.508			ND	
5 Nitrate as N		6.992			ND	
6 Sulfate	9.542	9.642	-0.100	583677154	48.3	
7 Orthophosphate as P		12.292			ND	

Report Date: 30-Sep-2016 07:30:21 Chrom Revision: 2.2 08-Sep-2016 14:45:52

TestAmerica Denver

Data File:	\\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\10.0000.d				
Injection Date:	29-Sep-2016 17:45:00	Instrument ID:	WC_IonChrom6	Operator ID:	
Lims ID:	280-88669-A-3-A	Lab Sample ID:	280-88669-3	Worklist Smp#:	10
Client ID:	CCO2D				
Injection Vol:	25.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC6	Limit Group:	Wet - Anions		



TestAmerica Denver
Area/Height Percent Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\10.0000.d
Lims ID: 280-88669-A-3-A
Client ID: CCO2D
Sample Type: Client
Inject. Date: 29-Sep-2016 17:45:00 ALS Bottle#: 0 Worklist Smp#: 10
Injection Vol: 25.0 ul Dil. Factor: 1.0000
Sample Info: 280-0051374-010
Misc. Info.: 7698 F
Operator ID: Instrument ID: WC_IonChrom6

Method: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\Anions_IC6.m
Limit Group: Wet - Anions 28D
Last Update: 30-Sep-2016 07:20:28 Calib Date: 01-Sep-2016 11:34:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\07.0000.d
Process Host: XAWRK016

Detector: 0005
Number of peaks found: 5

RT	Start RT	End RT	Area	Area%	A/Ht Ratio	Flags	Compound Identification
1.925	1.800	2.133	9435588	1.57	4.20		1 Fluoride
3.242	3.100	3.483	1809510	0.30	4.90		2 Chloride
8.308	7.900	8.742	4021405	0.67	21.77		
9.542	9.250	10.300	583677154	97.34	9.88		6 Sulfate
12.817	12.300	13.000	677526	0.11	21.01		
			599621183			Totals	

Total Unknown Area% = 0.78

Flag Legend
M - Manually Integrated
A - User Assigned Compound
B - Overlapped Base Peak
O - Overlapping Peak
e - Potential Peak Saturation

TestAmerica Denver
Target Compound Quantitation Report

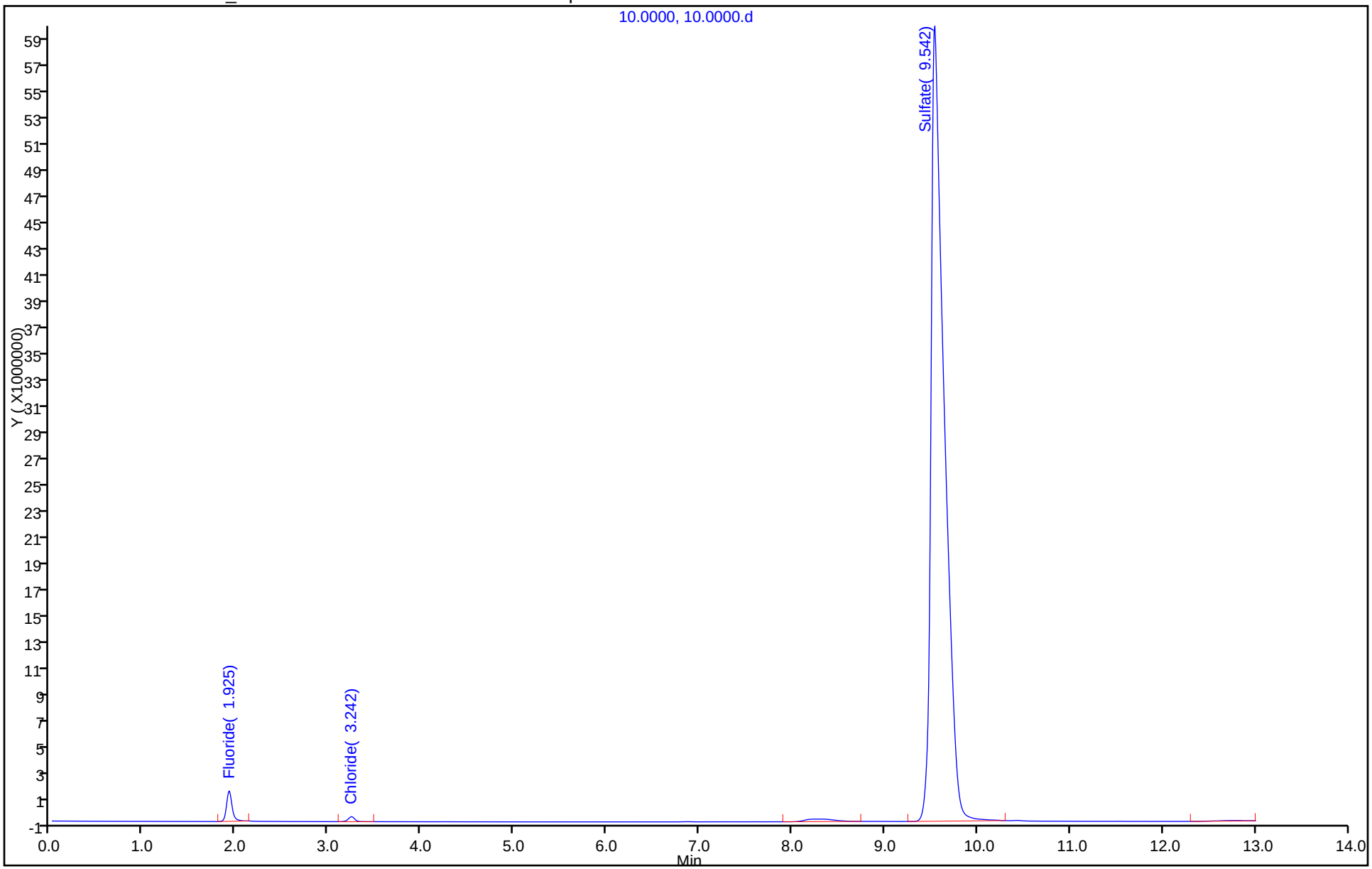
Data File:	\\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\10.0000.d				
Lims ID:	280-88669-A-3-A				
Client ID:	CCO2D				
Sample Type:	Client				
Inject. Date:	29-Sep-2016 17:45:00	ALS Bottle#:	0	Worklist Smp#:	10
Injection Vol:	25.0 ul	Dil. Factor:	1.0000		
Sample Info:	280-0051374-010				
Misc. Info.:	7698 F				
Operator ID:		Instrument ID:	WC_IonChrom6		
Method:	\\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\Anions_IC6.m				
Limit Group:	Wet - Anions 28D				
Last Update:	30-Sep-2016 07:20:28	Calib Date:	01-Sep-2016 11:34:00		
Integrator:	Falcon				
Quant Method:	External Standard	Quant By:	Initial Calibration		
Last ICal File:	\\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\07.0000.d				
Column 1 :			Det: 0005		
Process Host:	XAWRK016				

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ug/ml	Flags
1 Fluoride	1.925	1.950	-0.025	9435588	0.3174	
2 Chloride	3.242	3.350	-0.108	1809510	0.1556	
3 Nitrite as N		3.967			ND	
4 Bromide		6.508			ND	
5 Nitrate as N		6.992			ND	
6 Sulfate	9.542	9.642	-0.100	583677154	48.3	
7 Orthophosphate as P		12.292			ND	

Report Date: 30-Sep-2016 07:30:21 Chrom Revision: 2.2 08-Sep-2016 14:45:52

TestAmerica Denver

Data File:	\\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\10.0000.d				
Injection Date:	29-Sep-2016 17:45:00	Instrument ID:	WC_IonChrom6	Operator ID:	
Lims ID:	280-88669-A-3-A	Lab Sample ID:	280-88669-3	Worklist Smp#:	10
Client ID:	CCO2D				
Injection Vol:	25.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC6	Limit Group:	Wet - Anions 28D		



TestAmerica Denver
Area/Height Percent Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\11.0000.d
Lims ID: 280-88669-A-3-B DU
Client ID:
Sample Type: DU
Inject. Date: 29-Sep-2016 18:03:00 ALS Bottle#: 0 Worklist Smp#: 11
Injection Vol: 25.0 ul Dil. Factor: 1.0000
Sample Info: 280-0051374-011
Misc. Info.: 2445 F
Operator ID: Instrument ID: WC_IonChrom6

Method: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\Anions_IC6.m
Limit Group: Wet - Anions
Last Update: 30-Sep-2016 07:20:28 Calib Date: 01-Sep-2016 11:34:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\07.0000.d
Process Host: XAWRK016

Detector: 0005
Number of peaks found: 4

RT	Start RT	End RT	Area	Area%	A/Ht Ratio	Flags	Compound Identification
1.925	1.783	2.250	9958480	1.72	4.30		1 Fluoride
3.242	2.992	3.533	2087343	0.36	5.07		2 Chloride
8.300	7.892	8.742	4327974	0.75	21.79		
9.583	9.317	10.300	561670793	97.17	9.87		6 Sulfate
			578044590			Totals	

Total Unknown Area% = 0.75

Flag Legend
M - Manually Integrated
A - User Assigned Compound
B - Overlapped Base Peak
O - Overlapping Peak
e - Potential Peak Saturation

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\11.0000.d
Lims ID: 280-88669-A-3-B DU
Client ID:
Sample Type: DU
Inject. Date: 29-Sep-2016 18:03:00 ALS Bottle#: 0 Worklist Smp#: 11
Injection Vol: 25.0 ul Dil. Factor: 1.0000
Sample Info: 280-0051374-011
Misc. Info.: 2445 F
Operator ID: Instrument ID: WC_IonChrom6

Method: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\Anions_IC6.m
Limit Group: Wet - Anions
Last Update: 30-Sep-2016 07:20:28 Calib Date: 01-Sep-2016 11:34:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\07.0000.d

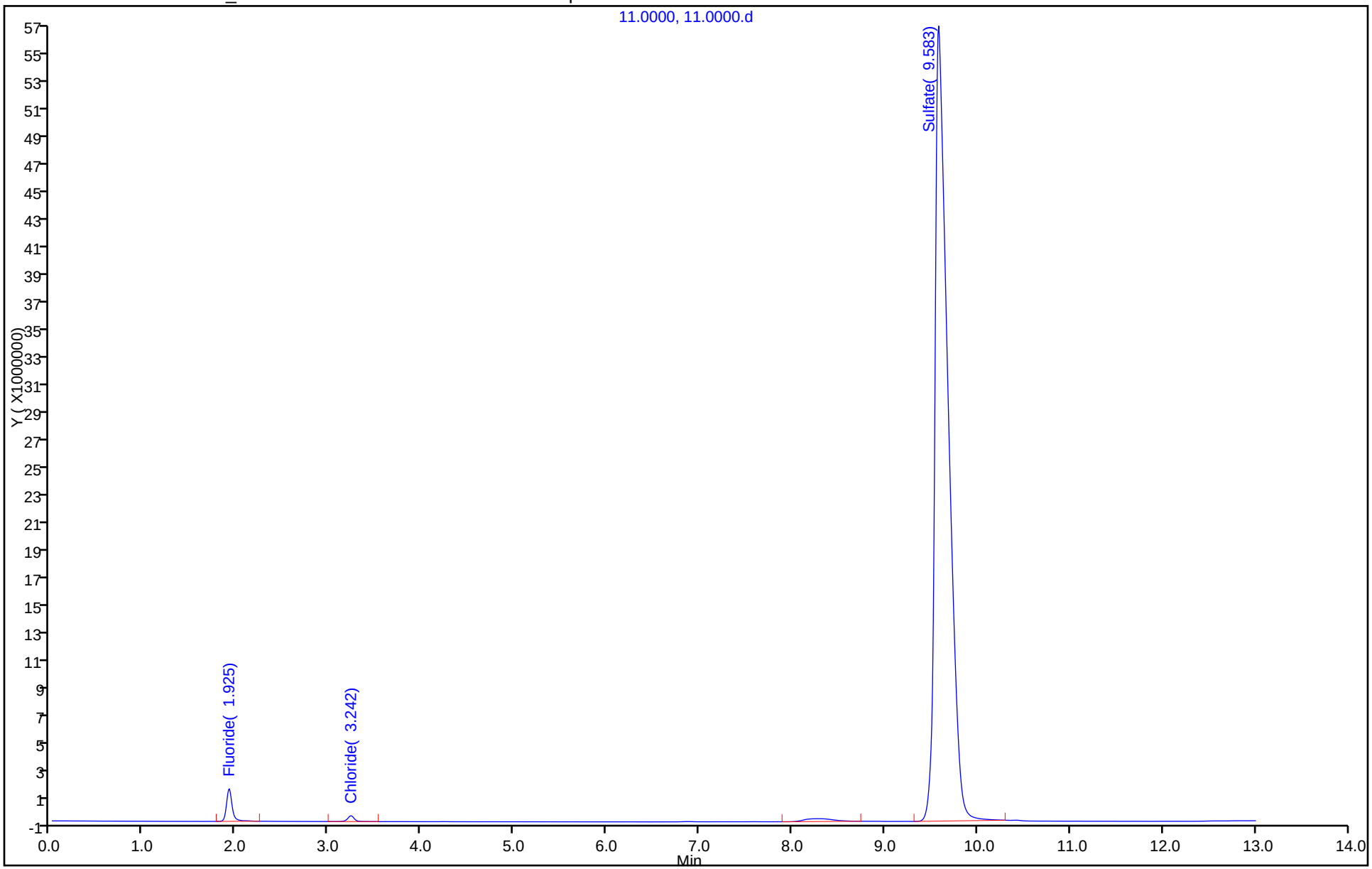
Column 1 : Det: 0005
Process Host: XAWRK016

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride	1.925	1.950	-0.025	9958480		0.3377	
2 Chloride	3.242	3.350	-0.108	2087343		0.1726	
3 Nitrite as N		3.967				ND	
4 Bromide		6.508				ND	
5 Nitrate as N		6.992				ND	
6 Sulfate	9.583	9.642	-0.059	561670793		46.5	
7 Orthophosphate as P		12.292				ND	

Report Date: 30-Sep-2016 07:30:24 Chrom Revision: 2.2 08-Sep-2016 14:45:52

TestAmerica Denver

Data File:	\\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\11.0000.d				
Injection Date:	29-Sep-2016 18:03:00	Instrument ID:	WC_IonChrom6	Operator ID:	
Lims ID:	280-88669-A-3-B DU			Worklist Smp#:	11
Client ID:					
Injection Vol:	25.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC6	Limit Group:	Wet - Anions		



TestAmerica Denver
Area/Height Percent Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\11.0000.d
Lims ID: 280-88669-A-3-B DU
Client ID:
Sample Type: DU
Inject. Date: 29-Sep-2016 18:03:00 ALS Bottle#: 0 Worklist Smp#: 11
Injection Vol: 25.0 ul Dil. Factor: 1.0000
Sample Info: 280-0051374-011
Misc. Info.: 2445 F
Operator ID: Instrument ID: WC_IonChrom6

Method: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\Anions_IC6.m
Limit Group: Wet - Anions 28D
Last Update: 30-Sep-2016 07:20:28 Calib Date: 01-Sep-2016 11:34:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\07.0000.d
Process Host: XAWRK016

Detector: 0005
Number of peaks found: 4

RT	Start RT	End RT	Area	Area%	A/Ht Ratio	Flags	Compound Identification
1.925	1.783	2.250	9958480	1.72	4.30		1 Fluoride
3.242	2.992	3.533	2087343	0.36	5.07		2 Chloride
8.300	7.892	8.742	4327974	0.75	21.79		
9.583	9.317	10.300	561670793	97.17	9.87		6 Sulfate
			578044590			Totals	

Total Unknown Area% = 0.75

Flag Legend
M - Manually Integrated
A - User Assigned Compound
B - Overlapped Base Peak
O - Overlapping Peak
e - Potential Peak Saturation

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\11.0000.d
Lims ID: 280-88669-A-3-B DU
Client ID:
Sample Type: DU
Inject. Date: 29-Sep-2016 18:03:00 ALS Bottle#: 0 Worklist Smp#: 11
Injection Vol: 25.0 ul Dil. Factor: 1.0000
Sample Info: 280-0051374-011
Misc. Info.: 2445 F
Operator ID: Instrument ID: WC_IonChrom6

Method: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\Anions_IC6.m
Limit Group: Wet - Anions 28D
Last Update: 30-Sep-2016 07:20:28 Calib Date: 01-Sep-2016 11:34:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\07.0000.d

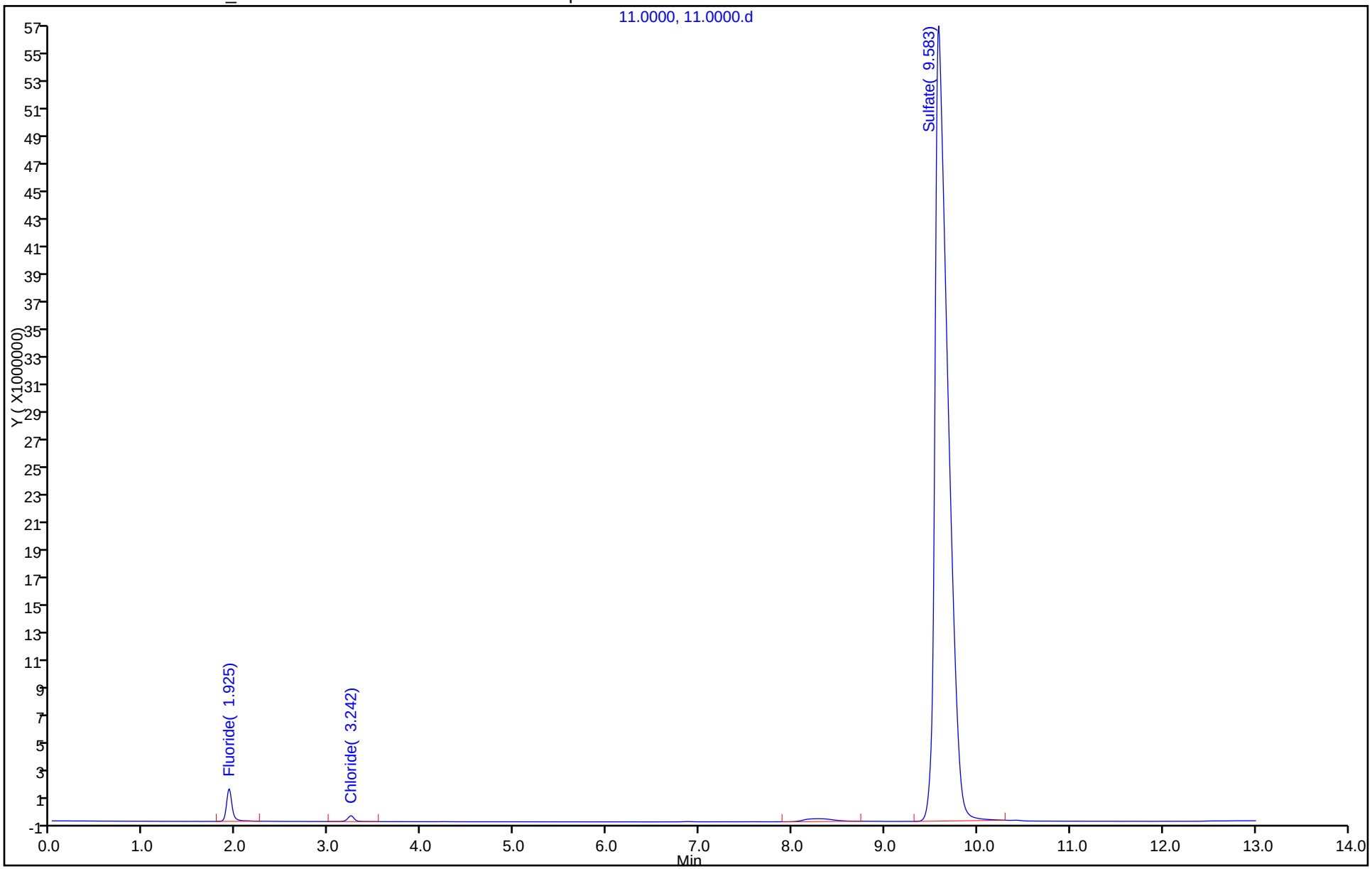
Column 1 : Det: 0005
Process Host: XAWRK016

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride	1.925	1.950	-0.025	9958480		0.3377	
2 Chloride	3.242	3.350	-0.108	2087343		0.1726	
3 Nitrite as N		3.967				ND	
4 Bromide		6.508				ND	
5 Nitrate as N		6.992				ND	
6 Sulfate	9.583	9.642	-0.059	561670793		46.5	
7 Orthophosphate as P		12.292				ND	

Report Date: 30-Sep-2016 07:30:24 Chrom Revision: 2.2 08-Sep-2016 14:45:52

TestAmerica Denver

Data File:	\\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\11.0000.d				
Injection Date:	29-Sep-2016 18:03:00	Instrument ID:	WC_IonChrom6	Operator ID:	
Lims ID:	280-88669-A-3-B DU			Worklist Smp#:	11
Client ID:					
Injection Vol:	25.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC6	Limit Group:	Wet - Anions 28D		



Report Date: 30-Sep-2016 07:30:26 Chrom Revision: 2.2 08-Sep-2016 14:45:52

TestAmerica Denver
Area/Height Percent Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\12.0000.d
Lims ID: 280-88669-B-3-A MS
Client ID: CCO2D-MS
Sample Type: MS
Inject. Date: 29-Sep-2016 18:20:00 ALS Bottle#: 0 Worklist Smp#: 12
Injection Vol: 25.0 ul Dil. Factor: 1.0000
Sample Info: 280-0051374-012
Misc. Info.: 29110 F
Operator ID: Instrument ID: WC_IonChrom6

Method: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\Anions_IC6.m
Limit Group: Wet - Anions
Last Update: 30-Sep-2016 07:20:28 Calib Date: 01-Sep-2016 11:34:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\07.0000.d
Process Host: XAWRK016

First Level Reviewer: phantl Date: 29-Sep-2016 18:52:09

Detector: 0005
Number of peaks found: 8

RT	Start RT	End RT	Area	Area%	A/Ht Ratio	Flags	Compound Identification
1.917	1.792	2.283	15733475	1.04	4.39		1 Fluoride
3.242	3.025	3.583	346171266	22.89	5.20		2 Chloride
3.817	3.583	4.725	148722568	9.83	7.19		3 Nitrite as N
6.242	5.917	6.458	30907738	2.04	8.08		4 Bromide
6.733	6.458	7.308	182041817	12.04	10.62		5 Nitrate as N
8.250	7.975	8.742	3673817	0.24	20.38		
9.550	9.283	10.383	784935692	51.90	12.00		6 Sulfate
12.850	12.350	12.850	191921	0.01	0.00		
			1512378294			Totals	

Total Unknown Area% = 0.26

Flag Legend
M - Manually Integrated
A - User Assigned Compound
B - Overlapped Base Peak
O - Overlapping Peak
e - Potential Peak Saturation

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\12.0000.d
Lims ID: 280-88669-B-3-A MS
Client ID: CCO2D-MS
Sample Type: MS
Inject. Date: 29-Sep-2016 18:20:00 ALS Bottle#: 0 Worklist Smp#: 12
Injection Vol: 25.0 ul Dil. Factor: 1.0000
Sample Info: 280-0051374-012
Misc. Info.: 29110 F
Operator ID: Instrument ID: WC_IonChrom6

Method: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\Anions_IC6.m
Limit Group: Wet - Anions
Last Update: 30-Sep-2016 07:20:28 Calib Date: 01-Sep-2016 11:34:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\07.0000.d

Column 1 : Det: 0005
Process Host: XAWRK016

First Level Reviewer: phantl Date: 29-Sep-2016 18:52:09

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride	1.917	1.950	-0.033	15733475	5.00	0.5609	
2 Chloride	3.242	3.350	-0.108	346171266	25.0	21.2	
3 Nitrite as N	3.817	3.967	-0.150	148722568	5.00	4.07	
4 Bromide	6.242	6.508	-0.266	30907738	5.00	4.32	
5 Nitrate as N	6.733	6.992	-0.259	182041817	5.00	4.37	
6 Sulfate	9.550	9.642	-0.092	784935692	25.0	65.0	
7 Orthophosphate as P		12.292			ND	ND	

QC Flag Legend

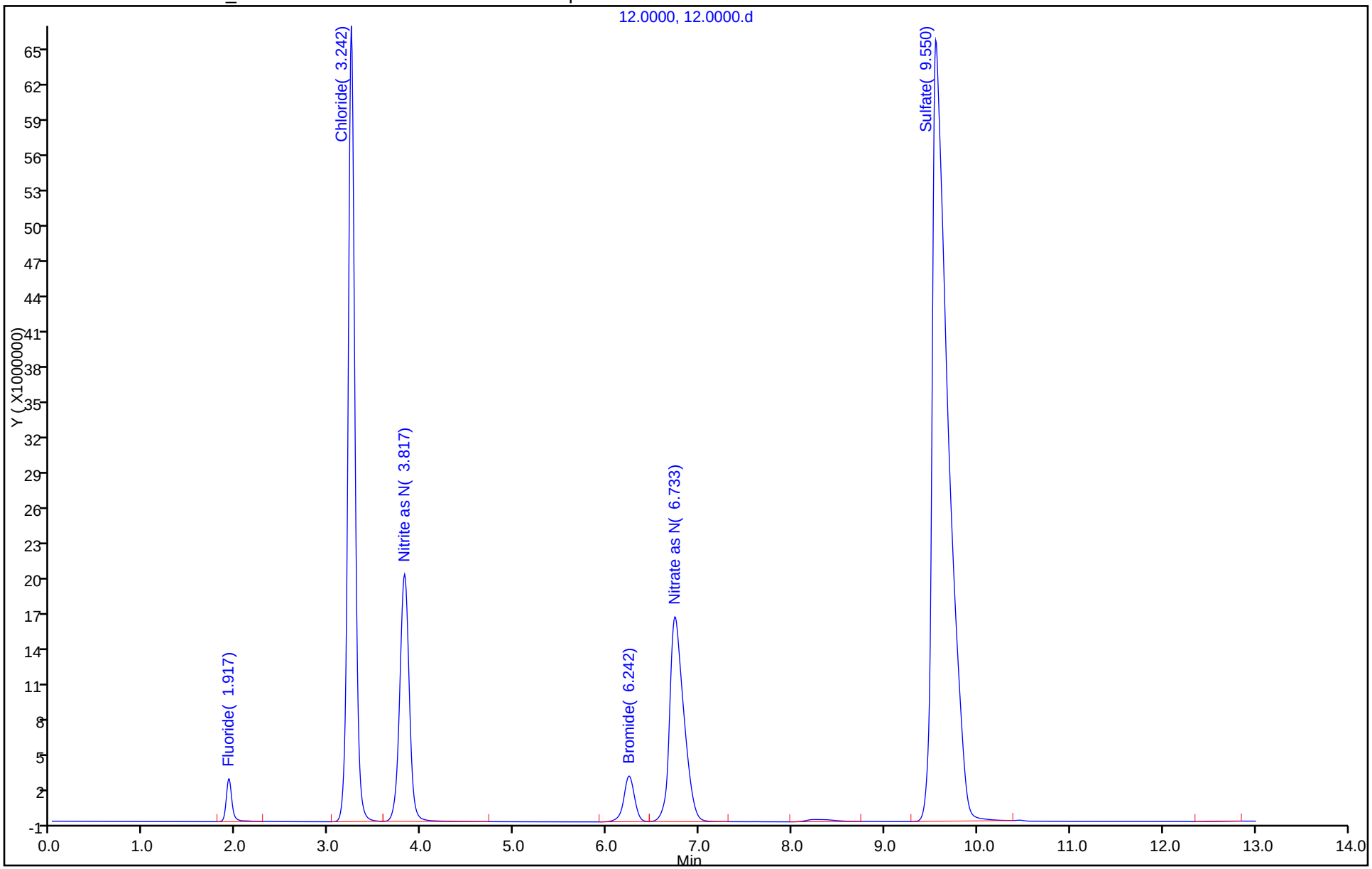
Processing Flags

ND - Not Detected or Marked ND

Report Date: 30-Sep-2016 07:30:26 Chrom Revision: 2.2 08-Sep-2016 14:45:52

TestAmerica Denver

Data File:	\\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\12.0000.d				
Injection Date:	29-Sep-2016 18:20:00	Instrument ID:	WC_IonChrom6	Operator ID:	
Lims ID:	280-88669-B-3-A MS			Worklist Smp#:	12
Client ID:	CCO2D-MS				
Injection Vol:	25.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC6	Limit Group:	Wet - Anions		



Report Date: 30-Sep-2016 07:30:26 Chrom Revision: 2.2 08-Sep-2016 14:45:52

TestAmerica Denver
Area/Height Percent Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\12.0000.d
Lims ID: 280-88669-B-3-A MS
Client ID: CCO2D-MS
Sample Type: MS
Inject. Date: 29-Sep-2016 18:20:00 ALS Bottle#: 0 Worklist Smp#: 12
Injection Vol: 25.0 ul Dil. Factor: 1.0000
Sample Info: 280-0051374-012
Misc. Info.: 29110 F
Operator ID: Instrument ID: WC_IonChrom6

Method: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\Anions_IC6.m
Limit Group: Wet - Anions 28D
Last Update: 30-Sep-2016 07:20:28 Calib Date: 01-Sep-2016 11:34:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\07.0000.d
Process Host: XAWRK016

First Level Reviewer: phantl Date: 29-Sep-2016 18:52:09

Detector: 0005
Number of peaks found: 8

RT	Start RT	End RT	Area	Area%	A/Ht Ratio	Flags	Compound Identification
1.917	1.792	2.283	15733475	1.04	4.39		1 Fluoride
3.242	3.025	3.583	346171266	22.89	5.20		2 Chloride
3.817	3.583	4.725	148722568	9.83	7.19		3 Nitrite as N
6.242	5.917	6.458	30907738	2.04	8.08		4 Bromide
6.733	6.458	7.308	182041817	12.04	10.62		5 Nitrate as N
8.250	7.975	8.742	3673817	0.24	20.38		
9.550	9.283	10.383	784935692	51.90	12.00		6 Sulfate
12.850	12.350	12.850	191921	0.01	0.00		
			1512378294			Totals	

Total Unknown Area% = 0.26

Flag Legend
M - Manually Integrated
A - User Assigned Compound
B - Overlapped Base Peak
O - Overlapping Peak
e - Potential Peak Saturation

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\12.0000.d
Lims ID: 280-88669-B-3-A MS
Client ID: CCO2D-MS
Sample Type: MS
Inject. Date: 29-Sep-2016 18:20:00 ALS Bottle#: 0 Worklist Smp#: 12
Injection Vol: 25.0 ul Dil. Factor: 1.0000
Sample Info: 280-0051374-012
Misc. Info.: 29110 F
Operator ID: Instrument ID: WC_IonChrom6

Method: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\Anions_IC6.m
Limit Group: Wet - Anions 28D
Last Update: 30-Sep-2016 07:20:28 Calib Date: 01-Sep-2016 11:34:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\07.0000.d

Column 1 : Det: 0005
Process Host: XAWRK016

First Level Reviewer: phantl Date: 29-Sep-2016 18:52:09

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride	1.917	1.950	-0.033	15733475	5.00	0.5609	
2 Chloride	3.242	3.350	-0.108	346171266	25.0	21.2	
3 Nitrite as N	3.817	3.967	-0.150	148722568	5.00	4.07	
4 Bromide	6.242	6.508	-0.266	30907738	5.00	4.32	
5 Nitrate as N	6.733	6.992	-0.259	182041817	5.00	4.37	
6 Sulfate	9.550	9.642	-0.092	784935692	25.0	65.0	
7 Orthophosphate as P		12.292			ND	ND	

QC Flag Legend

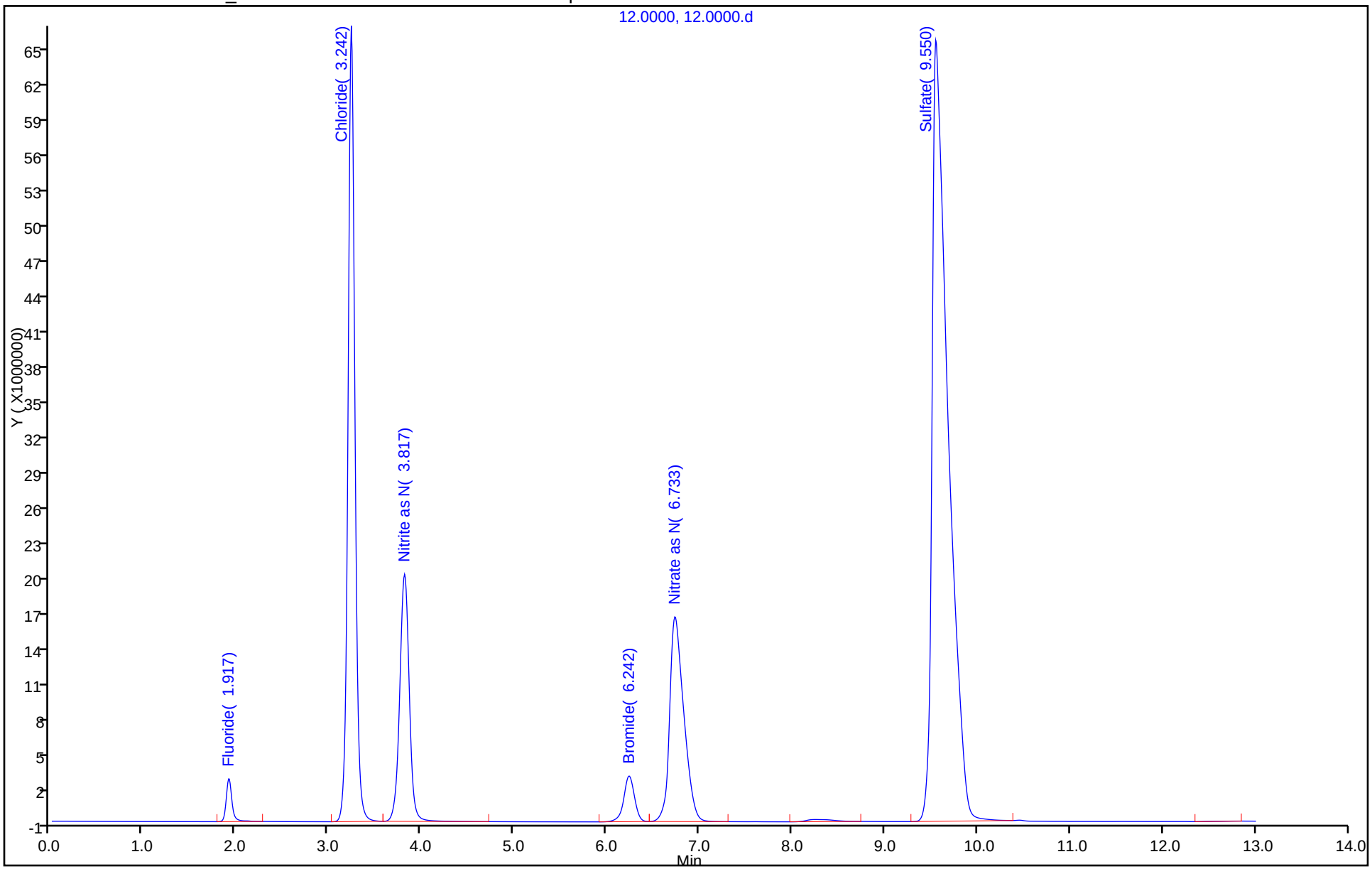
Processing Flags

ND - Not Detected or Marked ND

Report Date: 30-Sep-2016 07:30:26 Chrom Revision: 2.2 08-Sep-2016 14:45:52

TestAmerica Denver

Data File:	\\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\12.0000.d				
Injection Date:	29-Sep-2016 18:20:00	Instrument ID:	WC_IonChrom6	Operator ID:	
Lims ID:	280-88669-B-3-A MS			Worklist Smp#:	12
Client ID:	CCO2D-MS				
Injection Vol:	25.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC6	Limit Group:	Wet - Anions 28D		



TestAmerica Denver
Area/Height Percent Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\13.0000.d
Lims ID: 280-88669-C-3-A MSD
Client ID: CCO2D-MSD
Sample Type: MSD
Inject. Date: 29-Sep-2016 18:38:00 ALS Bottle#: 0 Worklist Smp#: 13
Injection Vol: 25.0 ul Dil. Factor: 1.0000
Sample Info: 280-0051374-013
Misc. Info.: 27193 F
Operator ID: Instrument ID: WC_IonChrom6

Method: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\Anions_IC6.m
Limit Group: Wet - Anions
Last Update: 30-Sep-2016 07:20:28 Calib Date: 01-Sep-2016 11:34:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\07.0000.d
Process Host: XAWRK016

Detector: 0005
Number of peaks found: 8

RT	Start RT	End RT	Area	Area%	A/Ht Ratio	Flags	Compound Identification
1.925	1.792	2.333	17072657	1.06	4.54		1 Fluoride
3.333	3.117	3.692	388481549	24.09	5.36		2 Chloride
3.925	3.692	4.867	169452336	10.51	7.32		3 Nitrite as N
6.425	6.108	6.625	33871081	2.10	7.64		4 Bromide
6.900	6.625	7.533	199580548	12.37	10.59		5 Nitrate as N
8.375	8.117	8.833	3126085	0.19	18.81		
9.608	9.300	10.392	801021915	49.67	10.90		6 Sulfate
12.625	12.358	12.908	241352	0.01	14.65		7 Orthophosphate as P
			1612847523			Totals	

Total Unknown Area% = 0.19

Flag Legend
M - Manually Integrated
A - User Assigned Compound
B - Overlapped Base Peak
O - Overlapping Peak
e - Potential Peak Saturation

TestAmerica Denver
Target Compound Quantitation Report

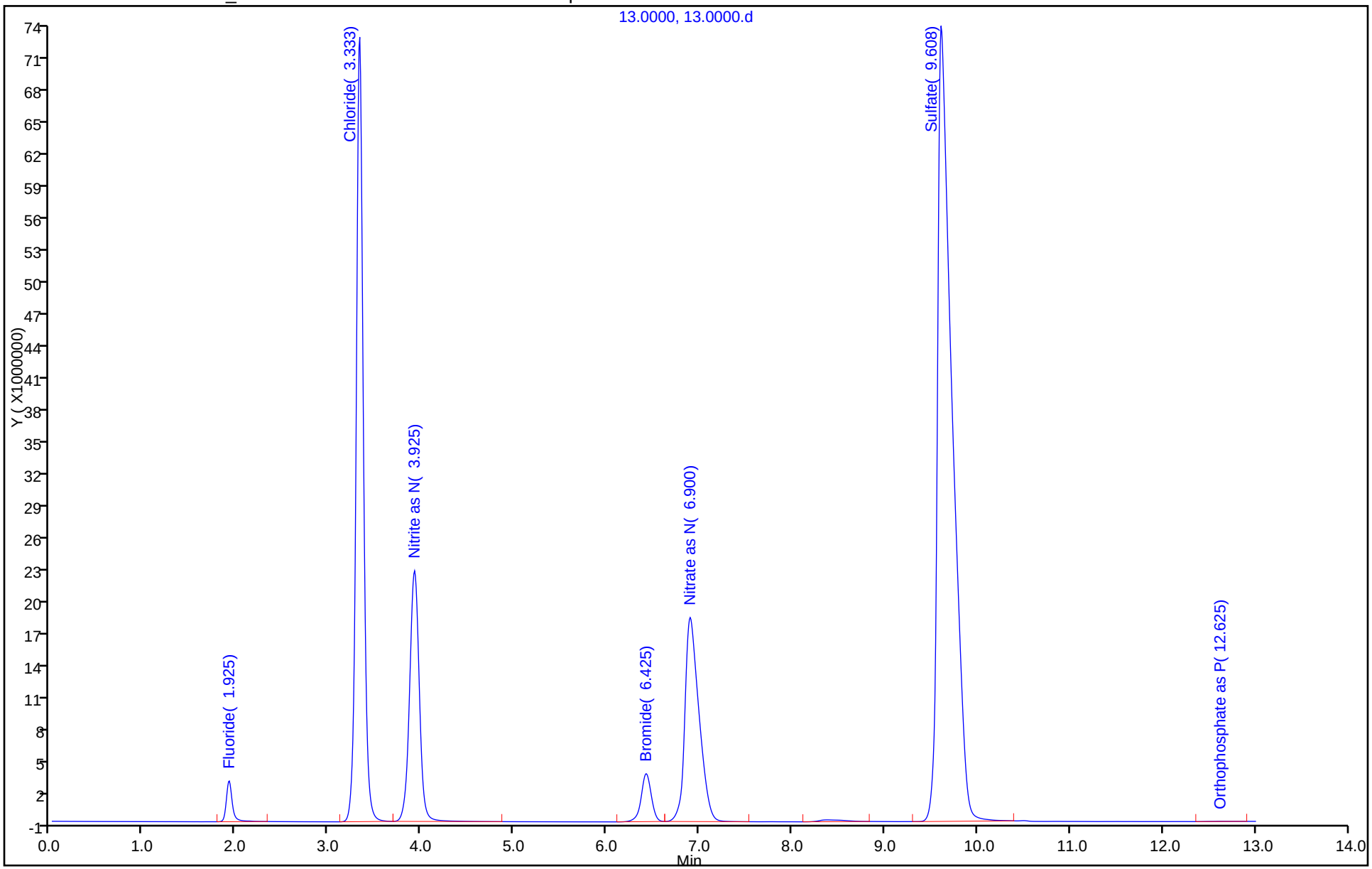
Data File:	\\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\13.0000.d				
Lims ID:	280-88669-C-3-A MSD				
Client ID:	CCO2D-MSD				
Sample Type:	MSD				
Inject. Date:	29-Sep-2016 18:38:00	ALS Bottle#:	0	Worklist Smp#:	13
Injection Vol:	25.0 ul	Dil. Factor:	1.0000		
Sample Info:	280-0051374-013				
Misc. Info.:	27193 F				
Operator ID:		Instrument ID:	WC_IonChrom6		
Method:	\\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\Anions_IC6.m				
Limit Group:	Wet - Anions				
Last Update:	30-Sep-2016 07:20:28	Calib Date:	01-Sep-2016 11:34:00		
Integrator:	Falcon				
Quant Method:	External Standard	Quant By:	Initial Calibration		
Last ICal File:	\\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\07.0000.d				
Column 1 :			Det: 0005		
Process Host:	XAWRK016				

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride	1.925	1.950	-0.025	17072657	5.00	0.6127	
2 Chloride	3.333	3.350	-0.017	388481549	25.0	23.8	
3 Nitrite as N	3.925	3.967	-0.042	169452336	5.00	4.65	
4 Bromide	6.425	6.508	-0.083	33871081	5.00	4.73	
5 Nitrate as N	6.900	6.992	-0.092	199580548	5.00	4.79	
6 Sulfate	9.608	9.642	-0.034	801021915	25.0	66.3	
7 Orthophosphate as P	12.625	12.292	0.333	241352	5.00	-0.1162	

Report Date: 30-Sep-2016 07:30:29 Chrom Revision: 2.2 08-Sep-2016 14:45:52

TestAmerica Denver

Data File:	\\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\13.0000.d				
Injection Date:	29-Sep-2016 18:38:00	Instrument ID:	WC_IonChrom6	Operator ID:	
Lims ID:	280-88669-C-3-A MSD			Worklist Smp#:	13
Client ID:	CCO2D-MSD				
Injection Vol:	25.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC6	Limit Group:	Wet - Anions		



TestAmerica Denver
Area/Height Percent Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\13.0000.d
Lims ID: 280-88669-C-3-A MSD
Client ID: CCO2D-MSD
Sample Type: MSD
Inject. Date: 29-Sep-2016 18:38:00 ALS Bottle#: 0 Worklist Smp#: 13
Injection Vol: 25.0 ul Dil. Factor: 1.0000
Sample Info: 280-0051374-013
Misc. Info.: 27193 F
Operator ID: Instrument ID: WC_IonChrom6

Method: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\Anions_IC6.m
Limit Group: Wet - Anions 28D
Last Update: 30-Sep-2016 07:20:28 Calib Date: 01-Sep-2016 11:34:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\07.0000.d
Process Host: XAWRK016

Detector: 0005
Number of peaks found: 8

RT	Start RT	End RT	Area	Area%	A/Ht Ratio	Flags	Compound Identification
1.925	1.792	2.333	17072657	1.06	4.54		1 Fluoride
3.333	3.117	3.692	388481549	24.09	5.36		2 Chloride
3.925	3.692	4.867	169452336	10.51	7.32		3 Nitrite as N
6.425	6.108	6.625	33871081	2.10	7.64		4 Bromide
6.900	6.625	7.533	199580548	12.37	10.59		5 Nitrate as N
8.375	8.117	8.833	3126085	0.19	18.81		
9.608	9.300	10.392	801021915	49.67	10.90		6 Sulfate
12.625	12.358	12.908	241352	0.01	14.65		7 Orthophosphate as P
			1612847523			Totals	

Total Unknown Area% = 0.19

Flag Legend
M - Manually Integrated
A - User Assigned Compound
B - Overlapped Base Peak
O - Overlapping Peak
e - Potential Peak Saturation

TestAmerica Denver
Target Compound Quantitation Report

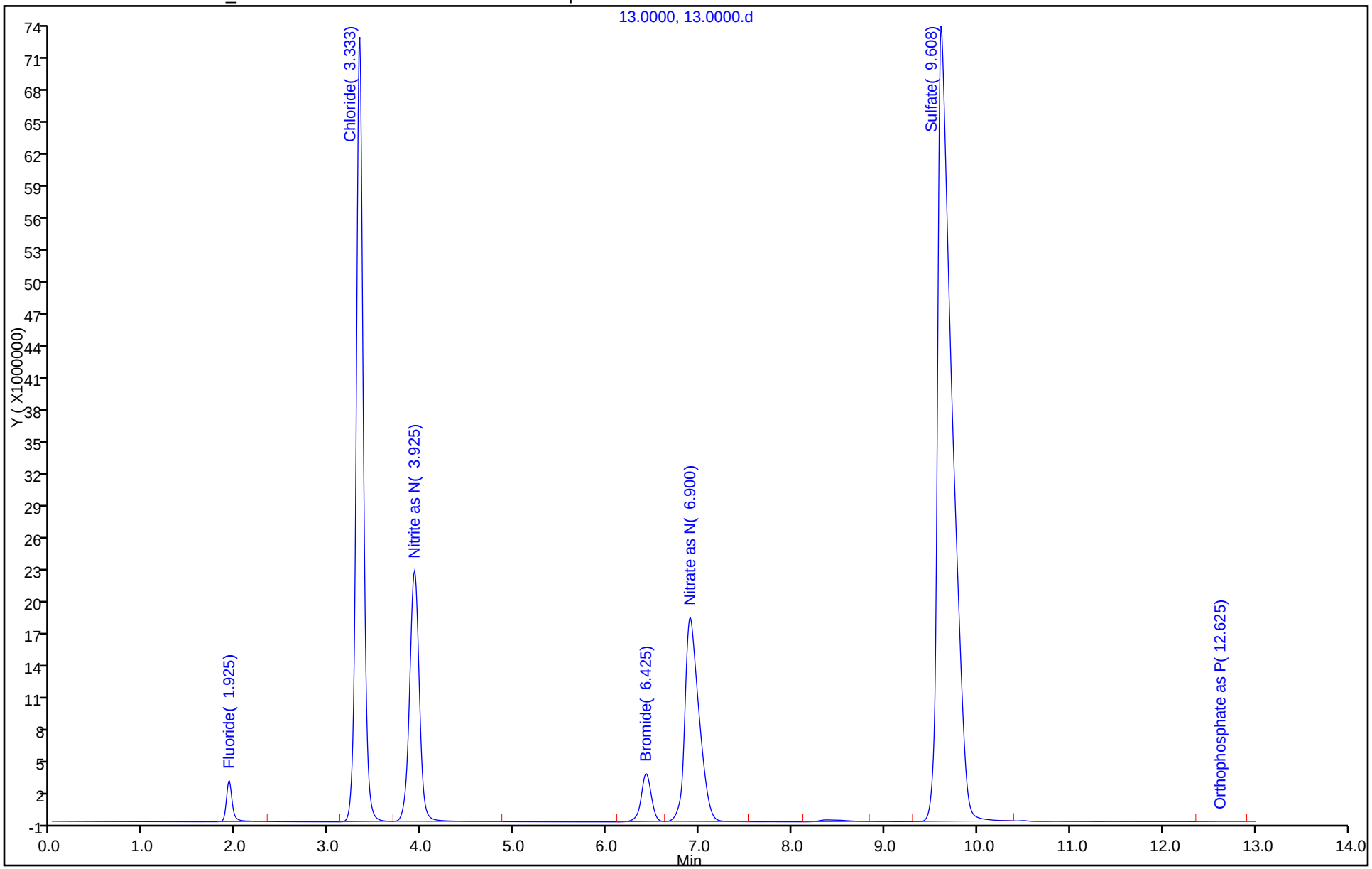
Data File:	\\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\13.0000.d				
Lims ID:	280-88669-C-3-A MSD				
Client ID:	CCO2D-MSD				
Sample Type:	MSD				
Inject. Date:	29-Sep-2016 18:38:00	ALS Bottle#:	0	Worklist Smp#:	13
Injection Vol:	25.0 ul	Dil. Factor:	1.0000		
Sample Info:	280-0051374-013				
Misc. Info.:	27193 F				
Operator ID:		Instrument ID:	WC_IonChrom6		
Method:	\\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\Anions_IC6.m				
Limit Group:	Wet - Anions 28D				
Last Update:	30-Sep-2016 07:20:28	Calib Date:	01-Sep-2016 11:34:00		
Integrator:	Falcon				
Quant Method:	External Standard	Quant By:	Initial Calibration		
Last ICal File:	\\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\07.0000.d				
Column 1 :			Det: 0005		
Process Host:	XAWRK016				

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride	1.925	1.950	-0.025	17072657	5.00	0.6127	
2 Chloride	3.333	3.350	-0.017	388481549	25.0	23.8	
3 Nitrite as N	3.925	3.967	-0.042	169452336	5.00	4.65	
4 Bromide	6.425	6.508	-0.083	33871081	5.00	4.73	
5 Nitrate as N	6.900	6.992	-0.092	199580548	5.00	4.79	
6 Sulfate	9.608	9.642	-0.034	801021915	25.0	66.3	
7 Orthophosphate as P	12.625	12.292	0.333	241352	5.00	-0.1162	

Report Date: 30-Sep-2016 07:30:29 Chrom Revision: 2.2 08-Sep-2016 14:45:52

TestAmerica Denver

Data File:	\\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\13.0000.d				
Injection Date:	29-Sep-2016 18:38:00	Instrument ID:	WC_IonChrom6	Operator ID:	
Lims ID:	280-88669-C-3-A MSD			Worklist Smp#:	13
Client ID:	CCO2D-MSD				
Injection Vol:	25.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC6	Limit Group:	Wet - Anions 28D		



TestAmerica Denver
Area/Height Percent Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\17.0000.d
Lims ID: ccv
Client ID:
Sample Type: CCV
Inject. Date: 29-Sep-2016 19:49:00 ALS Bottle#: 0 Worklist Smp#: 17
Injection Vol: 25.0 ul Dil. Factor: 1.0000
Sample Info: 280-0051374-017
Misc. Info.: 8749
Operator ID: Instrument ID: WC_IonChrom6
Sublist: chrom-Anions_IC6*sub4

Method: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\Anions_IC6.m
Limit Group: Wet - Anions
Last Update: 30-Sep-2016 07:20:22 Calib Date: 01-Sep-2016 11:34:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\07.0000.d
Process Host: XAWRK016

Detector: 0005
Number of peaks found: 8

RT	Start RT	End RT	Area	Area%	A/Ht Ratio	Flags	Compound Identification
1.942	1.775	2.533	135659422	3.85	4.97		1 Fluoride
3.242	3.033	3.617	1648175042	46.79	5.29		2 Chloride
3.833	3.617	4.750	188049730	5.34	7.45		3 Nitrite as N
6.283	5.950	6.492	35542798	1.01	8.04		4 Bromide
6.758	6.492	7.358	209658775	5.95	10.51		5 Nitrate as N
8.183	7.975	8.558	2210272	0.06	14.60		
9.392	9.117	10.208	1220245896	34.64	13.38		6 Sulfate
12.092	11.875	13.000	82955687	2.36	12.93		7 Orthophosphate as P
			3522497622			Totals	

Total Unknown Area% = 0.06

Flag Legend
M - Manually Integrated
A - User Assigned Compound
B - Overlapped Base Peak
O - Overlapping Peak
e - Potential Peak Saturation

TestAmerica Denver
CCV, Cal Verification Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\17.0000.d
Lims ID: ccv
Client ID:
Sample Type: CCV
Inject. Date: 29-Sep-2016 19:49:00 ALS Bottle#: 0 Worklist Smp#: 17
Injection Vol: 25.0 ul Dil. Factor: 1.0000
Sample Info: 280-0051374-017
Misc. Info.: 8749
Operator ID: Instrument ID: WC_IonChrom6
Sublist: chrom-Anions_IC6*sub4

Method: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\Anions_IC6.m
Limit Group: Wet - Anions
Last Update: 30-Sep-2016 07:20:22 Calib Date: 01-Sep-2016 11:34:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\07.0000.d

Column 1 : Det: 0005
Process Host: XAWRK016

Start Cal Date: 01-Sep-2016 10:05:00
End Cal Date: 01-Sep-2016 11:34:00

Compound	Standard RRF/Amt	DLT RT	Ccal Amt	Ccal RF	%D	Max. %D	%Rec
1 Fluoride	5.00	-0.008	5.20	27131884	3.9	10	104
2 Chloride	100.0	-0.108	100.8	16481750	0.8	10	101
3 Nitrite as N	5.00	-0.134	5.16	37609946	3.2	10	103
4 Bromide	5.00	-0.225	4.96	7108560	-0.7	10	99
5 Nitrate as N	5.00	-0.234	5.04	41931755	0.7	10	101
6 Sulfate	100.0	-0.250	101.0	12202459	1	10	101
7 Orthophosphate as P	5.00	-0.200	4.59	16591137	-8.3	10	92

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\17.0000.d
Lims ID: ccv
Client ID:
Sample Type: CCV
Inject. Date: 29-Sep-2016 19:49:00 ALS Bottle#: 0 Worklist Smp#: 17
Injection Vol: 25.0 ul Dil. Factor: 1.0000
Sample Info: 280-0051374-017
Misc. Info.: 8749
Operator ID: Instrument ID: WC_IonChrom6
Sublist: chrom-Anions_IC6*sub4

Method: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\Anions_IC6.m
Limit Group: Wet - Anions
Last Update: 30-Sep-2016 07:20:22 Calib Date: 01-Sep-2016 11:34:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\07.0000.d

Column 1 : Det: 0005
Process Host: XAWRK016

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride	1.942	1.950	-0.008	135659422	5.00	5.20	
2 Chloride	3.242	3.350	-0.108	1648175042	100.0	100.8	
3 Nitrite as N	3.833	3.967	-0.134	188049730	5.00	5.16	
4 Bromide	6.283	6.508	-0.225	35542798	5.00	4.96	
5 Nitrate as N	6.758	6.992	-0.234	209658775	5.00	5.04	
6 Sulfate	9.392	9.642	-0.250	1220245896	100.0	101.0	
7 Orthophosphate as P	12.092	12.292	-0.200	82955687	5.00	4.59	

Reagents:

IC LCS_00703 Amount Added: 5.00 Units: mL

Report Date: 30-Sep-2016 07:20:24 Chrom Revision: 2.2 08-Sep-2016 14:45:52

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\17.0000.d

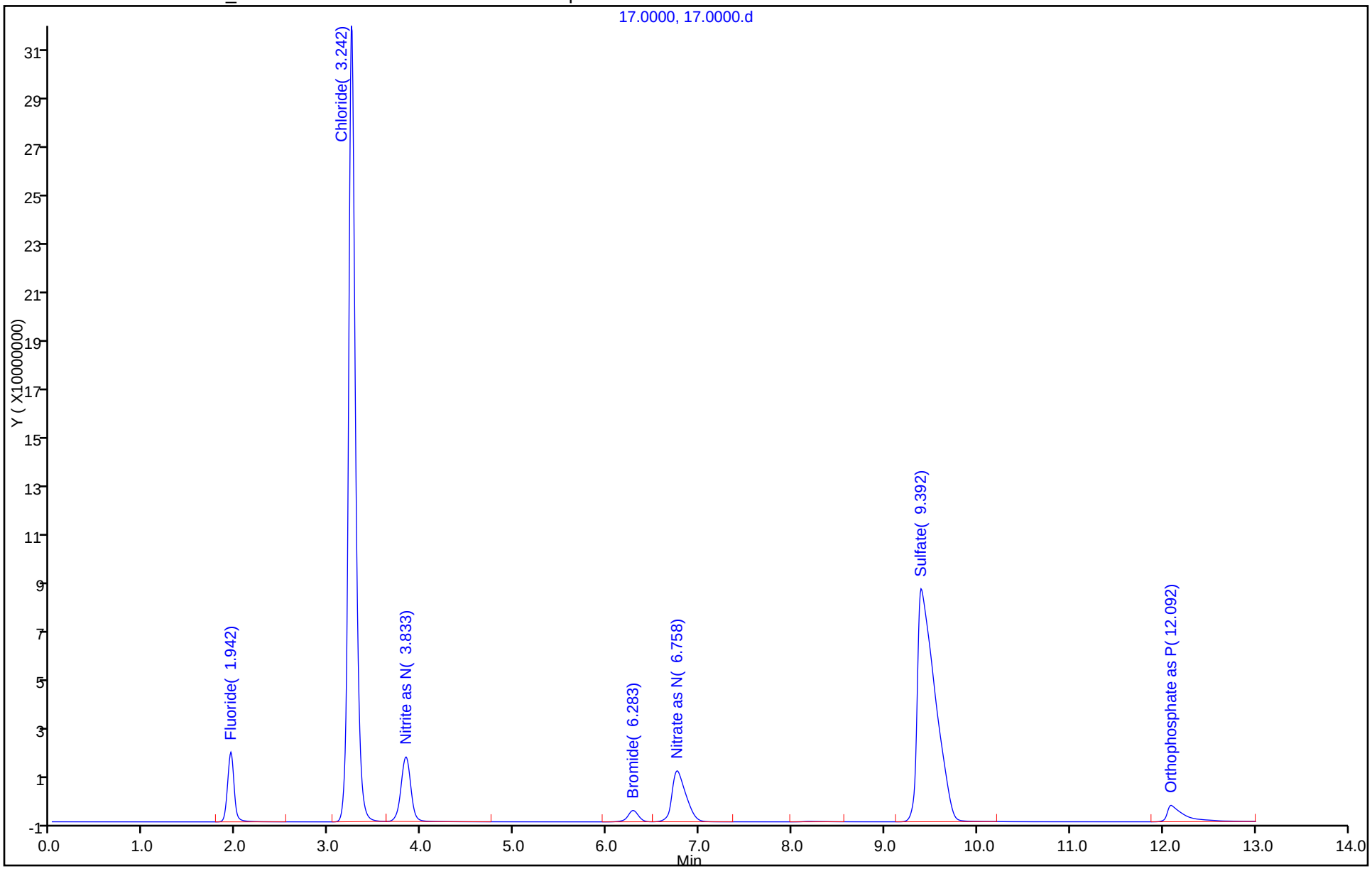
Injection Date: 29-Sep-2016 19:49:00 Instrument ID: WC_IonChrom6 Operator ID:

Lims ID: ccv Worklist Smp#: 17

Client ID:

Injection Vol: 25.0 ul Dil. Factor: 1.0000 ALS Bottle#: 0

Method: Anions_IC6 Limit Group: Wet - Anions



TestAmerica Denver
Area/Height Percent Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\17.0000.d
Lims ID: ccv
Client ID:
Sample Type: CCV
Inject. Date: 29-Sep-2016 19:49:00 ALS Bottle#: 0 Worklist Smp#: 17
Injection Vol: 25.0 ul Dil. Factor: 1.0000
Sample Info: 280-0051374-017
Misc. Info.: 8749
Operator ID: Instrument ID: WC_IonChrom6
Sublist: chrom-Anions_IC6*sub4

Method: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\Anions_IC6.m
Limit Group: Wet - Anions 28D
Last Update: 30-Sep-2016 07:20:22 Calib Date: 01-Sep-2016 11:34:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\07.0000.d
Process Host: XAWRK016

Detector: 0005
Number of peaks found: 8

RT	Start RT	End RT	Area	Area%	A/Ht Ratio	Flags	Compound Identification
1.942	1.775	2.533	135659422	3.85	4.97		1 Fluoride
3.242	3.033	3.617	1648175042	46.79	5.29		2 Chloride
3.833	3.617	4.750	188049730	5.34	7.45		3 Nitrite as N
6.283	5.950	6.492	35542798	1.01	8.04		4 Bromide
6.758	6.492	7.358	209658775	5.95	10.51		5 Nitrate as N
8.183	7.975	8.558	2210272	0.06	14.60		
9.392	9.117	10.208	1220245896	34.64	13.38		6 Sulfate
12.092	11.875	13.000	82955687	2.36	12.93		7 Orthophosphate as P
			3522497622			Totals	

Total Unknown Area% = 0.06

Flag Legend
M - Manually Integrated
A - User Assigned Compound
B - Overlapped Base Peak
O - Overlapping Peak
e - Potential Peak Saturation

TestAmerica Denver
CCV, Cal Verification Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\17.0000.d
Lims ID: ccv
Client ID:
Sample Type: CCV
Inject. Date: 29-Sep-2016 19:49:00 ALS Bottle#: 0 Worklist Smp#: 17
Injection Vol: 25.0 ul Dil. Factor: 1.0000
Sample Info: 280-0051374-017
Misc. Info.: 8749
Operator ID: Instrument ID: WC_IonChrom6
Sublist: chrom-Anions_IC6*sub4

Method: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\Anions_IC6.m
Limit Group: Wet - Anions 28D
Last Update: 30-Sep-2016 07:20:22 Calib Date: 01-Sep-2016 11:34:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\07.0000.d

Column 1 : Det: 0005
Process Host: XAWRK016

Start Cal Date: 01-Sep-2016 10:05:00
End Cal Date: 01-Sep-2016 11:34:00

Compound	Standard RRF/Amt	DLT RT	Ccal Amt	Ccal RF	%D	Max. %D	%Rec
1 Fluoride	5.00	-0.008	5.20	27131884	3.9	10	104
2 Chloride	100.0	-0.108	100.8	16481750	0.8	10	101
3 Nitrite as N	5.00	-0.134	5.16	37609946	3.2	10	103
4 Bromide	5.00	-0.225	4.96	7108560	-0.7	10	99
5 Nitrate as N	5.00	-0.234	5.04	41931755	0.7	10	101
6 Sulfate	100.0	-0.250	101.0	12202459	1	10	101
7 Orthophosphate as P	5.00	-0.200	4.59	16591137	-8.3	10	92

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\17.0000.d
Lims ID: ccv
Client ID:
Sample Type: CCV
Inject. Date: 29-Sep-2016 19:49:00 ALS Bottle#: 0 Worklist Smp#: 17
Injection Vol: 25.0 ul Dil. Factor: 1.0000
Sample Info: 280-0051374-017
Misc. Info.: 8749
Operator ID: Instrument ID: WC_IonChrom6
Sublist: chrom-Anions_IC6*sub4

Method: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\Anions_IC6.m
Limit Group: Wet - Anions 28D
Last Update: 30-Sep-2016 07:20:22 Calib Date: 01-Sep-2016 11:34:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\07.0000.d

Column 1 : Det: 0005
Process Host: XAWRK016

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride	1.942	1.950	-0.008	135659422	5.00	5.20	
2 Chloride	3.242	3.350	-0.108	1648175042	100.0	100.8	
3 Nitrite as N	3.833	3.967	-0.134	188049730	5.00	5.16	
4 Bromide	6.283	6.508	-0.225	35542798	5.00	4.96	
5 Nitrate as N	6.758	6.992	-0.234	209658775	5.00	5.04	
6 Sulfate	9.392	9.642	-0.250	1220245896	100.0	101.0	
7 Orthophosphate as P	12.092	12.292	-0.200	82955687	5.00	4.59	

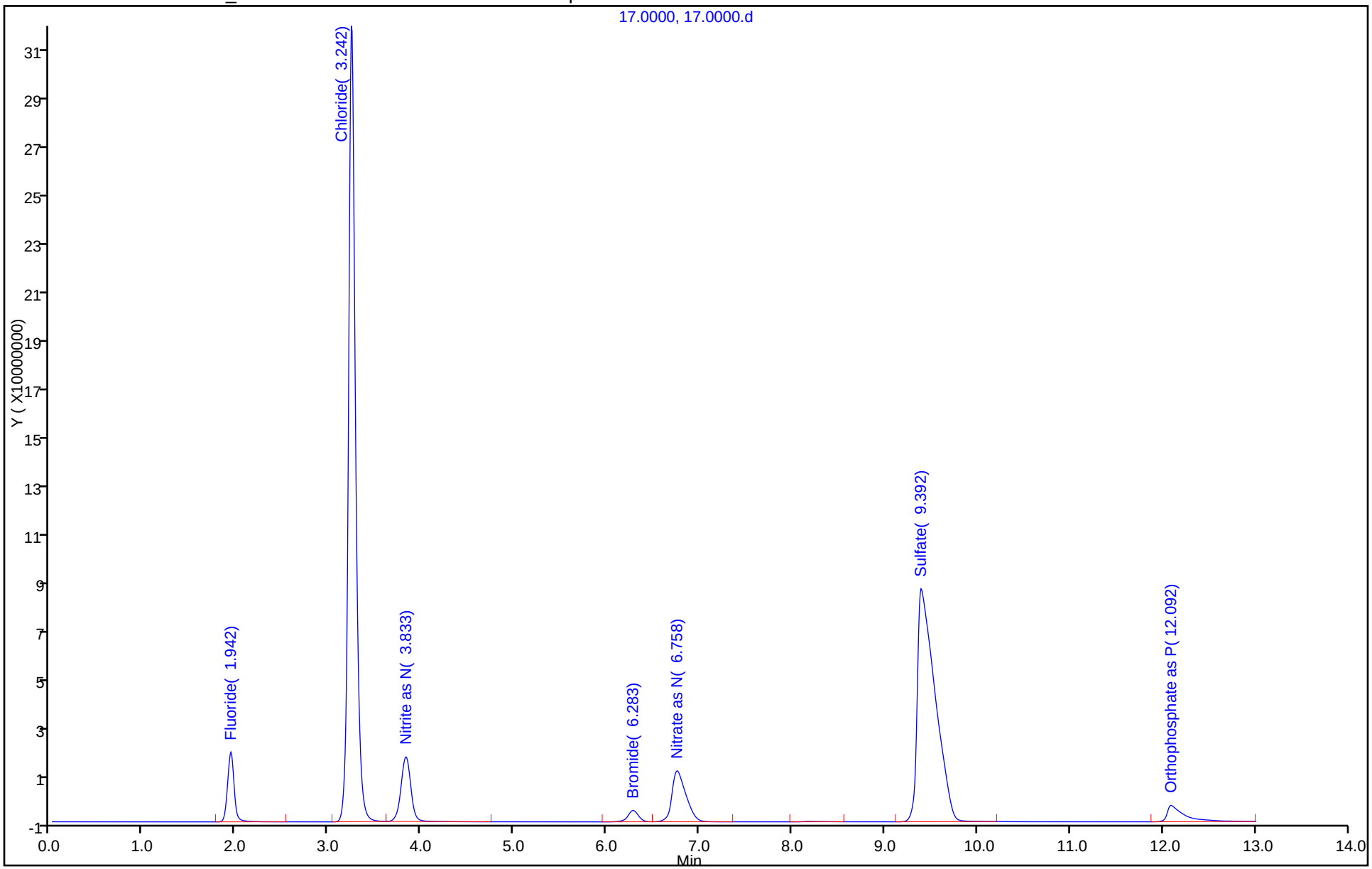
Reagents:

IC LCS_00703 Amount Added: 5.00 Units: mL

Report Date: 30-Sep-2016 07:20:23 Chrom Revision: 2.2 08-Sep-2016 14:45:52

TestAmerica Denver

Data File:	\\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\17.0000.d				
Injection Date:	29-Sep-2016 19:49:00	Instrument ID:	WC_IonChrom6	Operator ID:	
Lims ID:	ccv			Worklist Smp#:	17
Client ID:					
Injection Vol:	25.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC6	Limit Group:	Wet - Anions 28D		



TestAmerica Denver
Area/Height Percent Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\18.0000.d
Lims ID: ccb
Client ID:
Sample Type: CCB
Inject. Date: 29-Sep-2016 20:07:00 ALS Bottle#: 0 Worklist Smp#: 18
Injection Vol: 25.0 ul Dil. Factor: 1.0000
Sample Info: 280-0051374-018
Misc. Info.: 22886
Operator ID: Instrument ID: WC_IonChrom6

Method: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\Anions_IC6.m
Limit Group: Wet - Anions
Last Update: 30-Sep-2016 07:20:22 Calib Date: 01-Sep-2016 11:34:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\07.0000.d
Process Host: XAWRK016

Detector: 0005
Number of peaks found: 3

RT	Start RT	End RT	Area	Area%	A/Ht Ratio	Flags	Compound Identification
1.917	1.825	2.033	250526	6.18	3.82		1 Fluoride
8.258	8.017	8.558	2103970	51.88	14.10		
12.583	12.200	13.000	1700913	41.94	21.18		7 Orthophosphate as P
			4055409			Totals	

Total Unknown Area% = 51.88

Flag Legend
M - Manually Integrated
A - User Assigned Compound
B - Overlapped Base Peak
O - Overlapping Peak
e - Potential Peak Saturation

TestAmerica Denver
Target Compound Quantitation Report

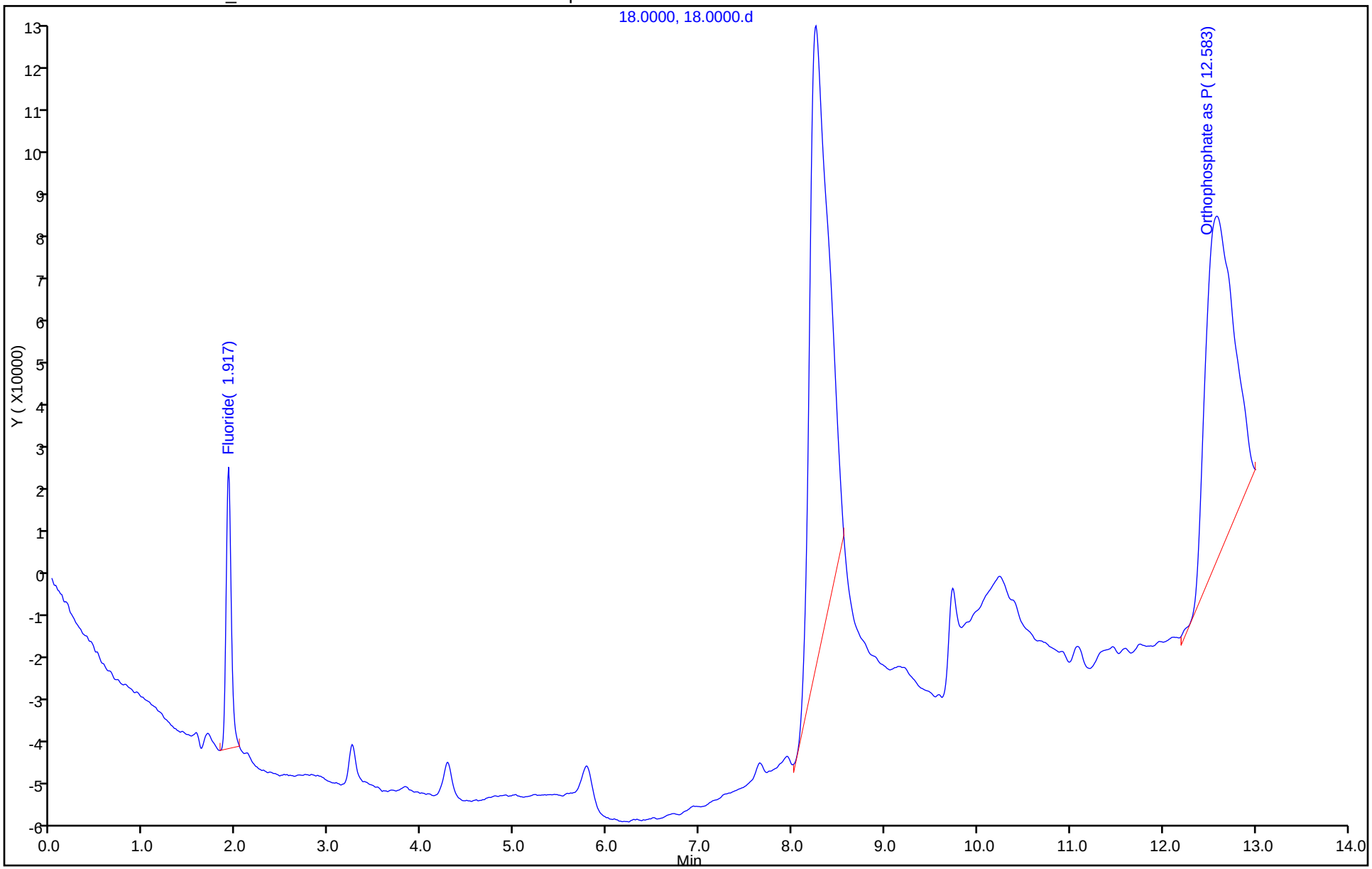
Data File:	\\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\18.0000.d				
Lims ID:	ccb				
Client ID:					
Sample Type:	CCB				
Inject. Date:	29-Sep-2016 20:07:00	ALS Bottle#:	0	Worklist Smp#:	18
Injection Vol:	25.0 ul	Dil. Factor:	1.0000		
Sample Info:	280-0051374-018				
Misc. Info.:	22886				
Operator ID:		Instrument ID:	WC_IonChrom6		
Method:	\\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\Anions_IC6.m				
Limit Group:	Wet - Anions				
Last Update:	30-Sep-2016 07:20:22	Calib Date:	01-Sep-2016 11:34:00		
Integrator:	Falcon				
Quant Method:	External Standard	Quant By:	Initial Calibration		
Last ICal File:	\\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\07.0000.d				
Column 1 :			Det: 0005		
Process Host:	XAWRK016				

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride	1.917	1.950	-0.033	250526		-0.0377	
2 Chloride		3.350				ND	
3 Nitrite as N		3.967				ND	
4 Bromide		6.508				ND	
5 Nitrate as N		6.992				ND	
6 Sulfate		9.642				ND	
7 Orthophosphate as P	12.583	12.292	0.291	1700913		-0.0332	

Report Date: 30-Sep-2016 07:20:26 Chrom Revision: 2.2 08-Sep-2016 14:45:52

TestAmerica Denver

Data File:	\\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\18.0000.d				
Injection Date:	29-Sep-2016 20:07:00	Instrument ID:	WC_IonChrom6	Operator ID:	
Lims ID:	ccb			Worklist Smp#:	18
Client ID:					
Injection Vol:	25.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC6	Limit Group:	Wet - Anions		



TestAmerica Denver
Area/Height Percent Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\18.0000.d
Lims ID: ccb
Client ID:
Sample Type: CCB
Inject. Date: 29-Sep-2016 20:07:00 ALS Bottle#: 0 Worklist Smp#: 18
Injection Vol: 25.0 ul Dil. Factor: 1.0000
Sample Info: 280-0051374-018
Misc. Info.: 22886
Operator ID: Instrument ID: WC_IonChrom6

Method: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\Anions_IC6.m
Limit Group: Wet - Anions 28D
Last Update: 30-Sep-2016 07:20:22 Calib Date: 01-Sep-2016 11:34:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\07.0000.d
Process Host: XAWRK016

Detector: 0005
Number of peaks found: 3

RT	Start RT	End RT	Area	Area%	A/Ht Ratio	Flags	Compound Identification
1.917	1.825	2.033	250526	6.18	3.82		1 Fluoride
8.258	8.017	8.558	2103970	51.88	14.10		
12.583	12.200	13.000	1700913	41.94	21.18		7 Orthophosphate as P
			4055409			Totals	

Total Unknown Area% = 51.88

Flag Legend
M - Manually Integrated
A - User Assigned Compound
B - Overlapped Base Peak
O - Overlapping Peak
e - Potential Peak Saturation

TestAmerica Denver
Target Compound Quantitation Report

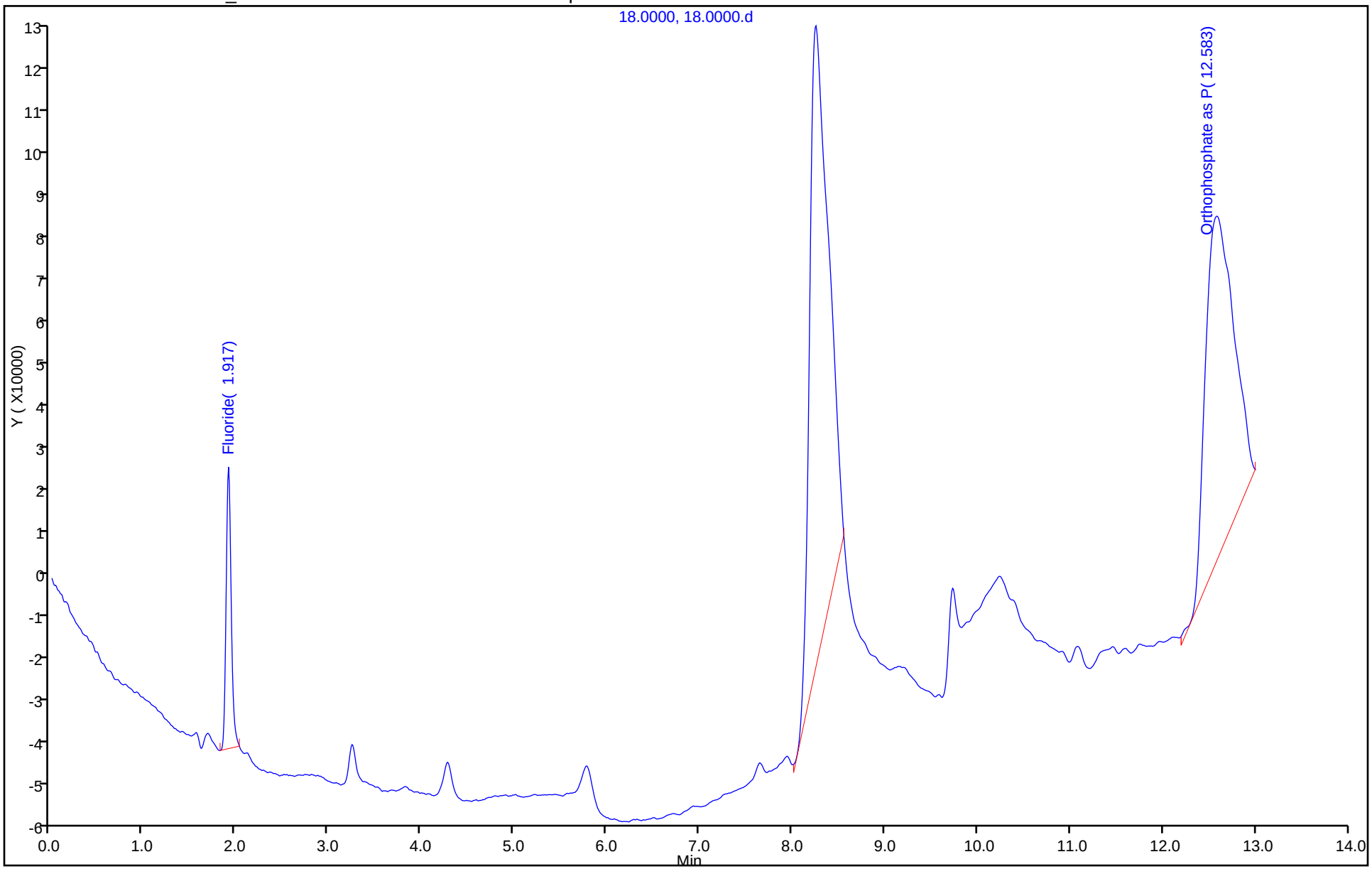
Data File:	\\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\18.0000.d				
Lims ID:	ccb				
Client ID:					
Sample Type:	CCB				
Inject. Date:	29-Sep-2016 20:07:00	ALS Bottle#:	0	Worklist Smp#:	18
Injection Vol:	25.0 ul	Dil. Factor:	1.0000		
Sample Info:	280-0051374-018				
Misc. Info.:	22886				
Operator ID:		Instrument ID:	WC_IonChrom6		
Method:	\\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\Anions_IC6.m				
Limit Group:	Wet - Anions 28D				
Last Update:	30-Sep-2016 07:20:22	Calib Date:	01-Sep-2016 11:34:00		
Integrator:	Falcon				
Quant Method:	External Standard	Quant By:	Initial Calibration		
Last ICal File:	\\ChromNA\Denver\ChromData\WC_IonChrom6\20160901-50495.b\07.0000.d				
Column 1 :			Det: 0005		
Process Host:	XAWRK016				

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride	1.917	1.950	-0.033	250526		-0.0377	
2 Chloride		3.350				ND	
3 Nitrite as N		3.967				ND	
4 Bromide		6.508				ND	
5 Nitrate as N		6.992				ND	
6 Sulfate		9.642				ND	
7 Orthophosphate as P	12.583	12.292	0.291	1700913		-0.0332	

Report Date: 30-Sep-2016 07:20:26 Chrom Revision: 2.2 08-Sep-2016 14:45:52

TestAmerica Denver

Data File:	\\ChromNA\Denver\ChromData\WC_IonChrom6\20160929-51374.b\18.0000.d				
Injection Date:	29-Sep-2016 20:07:00	Instrument ID:	WC_IonChrom6	Operator ID:	
Lims ID:	ccb			Worklist Smp#:	18
Client ID:					
Injection Vol:	25.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC6	Limit Group:	Wet - Anions 28D		



GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: TestAmerica Denver Job No.: 280-88669-1

SDG No.:

Batch Number: 344083 Batch Start Date: 09/28/16 08:11 Batch Analyst: Lehman, Jeffrey M

Batch Method: SM 3500 CR D Batch End Date:

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	SamplepH	ColorBlk	UnCorResp	CalcMsg
IC 280-344083/1		SM 3500 CR D		10 mL	10 mL				Color Resp. is Blank
IC 280-344083/2		SM 3500 CR D		10 mL	10 mL				Color Resp. is Blank
IC 280-344083/3		SM 3500 CR D		10 mL	10 mL				Color Resp. is Blank
IC 280-344083/4		SM 3500 CR D		10 mL	10 mL				Color Resp. is Blank
IC 280-344083/5		SM 3500 CR D		10 mL	10 mL				Color Resp. is Blank
ICV 280-344083/6		SM 3500 CR D		10 mL	10 mL				Color Resp. is Blank
ICB 280-344083/7		SM 3500 CR D		10 mL	10 mL				Color Resp. is Blank
LCS 280-344164/1-A		SM 3500 CR D		10 mL	10 mL				Color Resp. is Blank
LCSD 280-344164/2-A		SM 3500 CR D		10 mL	10 mL				Color Resp. is Blank
MB 280-344164/3-A		SM 3500 CR D		10 mL	10 mL				Color Resp. is Blank
CCV 280-344083/17		SM 3500 CR D		10 mL	10 mL				Color Resp. is Blank
CCB 280-344083/18		SM 3500 CR D		10 mL	10 mL				Color Resp. is Blank
280-88669-A-1	CCO2D	SM 3500 CR D	T	10 mL	10 mL	5 SU	0.001 Absorbance	0.004 Absorbance	OK
280-88669-A-1 DU	CCO2D	SM 3500 CR D	T	10 mL	10 mL		0.001 Absorbance	0.005 Absorbance	OK
280-88669-A-1 MS	CCO2D-MS	SM 3500 CR D	T	10 mL	10 mL		0.001 Absorbance	0.076 Absorbance	OK
280-88669-A-1 MSD	CCO2D-MSD	SM 3500 CR D	T	10 mL	10 mL		0.001 Absorbance	0.080 Absorbance	OK
CCV 280-344083/23		SM 3500 CR D		10 mL	10 mL			0.119 Absorbance	OK w/o Correction
CCB 280-344083/24		SM 3500 CR D		10 mL	10 mL			0.001 Absorbance	OK w/o Correction

Lab Sample ID	Client Sample ID	Method Chain	Basis	CR6 ICV int 01127	CR6 Int cal 00721	CR6 spike sou 00738	AnalysisComment		
IC 280-344083/1		SM 3500 CR D			0.1 mL				
IC 280-344083/2		SM 3500 CR D			0.2 mL				

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.: 280-88669-1

SDG No.:

Batch Number: 344083 Batch Start Date: 09/28/16 08:11 Batch Analyst: Lehman, Jeffrey M

Batch Method: SM 3500 CR D Batch End Date:

Lab Sample ID	Client Sample ID	Method Chain	Basis	CR6 ICV int 01127	CR6 Int cal 00721	CR6 spike sou 00738	AnalysisComment		
IC 280-344083/3		SM 3500 CR D			0.5 mL				
IC 280-344083/4		SM 3500 CR D			1 mL				
IC 280-344083/5		SM 3500 CR D			2 mL				
ICV 280-344083/6		SM 3500 CR D		0.5 mL					
ICB 280-344083/7		SM 3500 CR D							
LCS 280-344164/1-A		SM 3500 CR D				0.1 mL			
LCSD 280-344164/2-A		SM 3500 CR D				0.1 mL			
MB 280-344164/3-A		SM 3500 CR D							
CCV 280-344083/17		SM 3500 CR D		1 mL					
CCB 280-344083/18		SM 3500 CR D							
280-88669-A-1	CCO2D	SM 3500 CR D	T				pH = 1.3		
280-88669-A-1 DU	CCO2D	SM 3500 CR D	T			0.1 mL			
280-88669-A-1 MS	CCO2D-MS	SM 3500 CR D	T			0.1 mL			
280-88669-A-1 MSD	CCO2D-MSD	SM 3500 CR D	T						
CCV 280-344083/23		SM 3500 CR D		1 mL					
CCB 280-344083/24		SM 3500 CR D							

Batch Notes	
Acid Used for pH Adjustment ID	50% H2SO4_0026
Color Reagent ID	CR^6ColorR_00259
First End time	22:55
pH Paper ID	HC682547
Pipette ID	5000elj, 1000nxn, 100bb

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.: 280-88669-1

SDG No.:

Batch Number: 344083 Batch Start Date: 09/28/16 08:11 Batch Analyst: Lehman, Jeffrey M

Batch Method: SM 3500 CR D Batch End Date:

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.

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: TestAmerica Denver Job No.: 280-88669-1

SDG No.:

Batch Number: 344164 Batch Start Date: 09/28/16 12:50 Batch Analyst: Lehman, Jeffrey M

Batch Method: FILTRATION Batch End Date:

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount				
LCS 280-344164/1		FILTRATION, SM 3500 CR D		10 mL	10 mL				
LCSD 280-344164/2		FILTRATION, SM 3500 CR D		10 mL	10 mL				
MB 280-344164/3		FILTRATION, SM 3500 CR D		10 mL	10 mL				

Batch Notes	
Filter ID	9622282
Lot # of Nitric Acid	148204

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.: 280-88669-1

SDG No.:

Batch Number: 347014 Batch Start Date: 10/18/16 09:36 Batch Analyst: Uge, Ikem E

Batch Method: DI Leach Batch End Date:

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount				
LCS 280-347014/1		DI Leach, 9045D		40.22 g	40 mL				
280-88669-A-2	CCO2D	DI Leach, 9045D	S	40.26 g	40 mL				

Batch Notes	
Balance ID	24750836
Batch Comment	start: 1810 end 1910

Basis	Basis Description
S	Soluble

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.: 280-88669-1

SDG No.:

Batch Number: 347052 Batch Start Date: 10/18/16 13:22 Batch Analyst: Uge, Ikem E

Batch Method: 9045D Batch End Date:

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	pH 7.0 Buffer 00185	pH 7.0 ICV 00067		
ICV 280-347052/1		9045D		1 mL	1 mL		1 mL		
LCS 280-347014/1-A		9045D		1 mL	1 mL	1 mL			
280-88669-A-2-A	CCO2D	9045D	S	1 mL	1 mL				
CCV 280-347052/15		9045D		1 mL	1 mL	1 mL			

Batch Notes	
pH Buffer 1 ID	pH 2_00051
pH Buffer 2 ID	pH 4_00135
pH Buffer 3 ID	pH7 _ 00185
pH Buffer 4 ID	pH 10_00111
pH Buffer 5 ID	pH 12_00107
pH Buffer 6 ID	pH 7.0_00184
Calibration Date and Time	10/18/16 1300 IU
Electronic Slope	98.0
Instrument ID	Orion Five Star
Sufficient volume for sample dup	yes
Thermometer ID	SV-15261

Basis	Basis Description
S	Soluble

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.: 280-88669-1

SDG No.:

Batch Number: 340426 Batch Start Date: 09/01/16 09:47 Batch Analyst: Benson, Alex F

Batch Method: 9056A Batch End Date:

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	CalcMsg	IC CAL cl/so4 00114	IC Cal low 00226	IC CL ICV 00013
STD 280-340426/2 IC		9056A		5 mL	5 mL	OK	0.02 mL	0.02 mL	
STD 280-340426/3 IC		9056A		5 mL	5 mL	OK	0.05 mL	0.05 mL	
STD 280-340426/4 IC		9056A		5 mL	5 mL	OK	0.1 mL	0.1 mL	
STD 280-340426/5 IC		9056A		5 mL	5 mL	OK	1.2 mL	0.4 mL	
STD 280-340426/6 IC		9056A		5 mL	5 mL	OK	2.4 mL	0.8 mL	
STD 280-340426/7 IC		9056A		5 mL	5 mL	OK	4 mL	1 mL	
ICV 280-340426/8		9056A		5 mL	5 mL	OK			0.4 mL
ICB 280-340426/9		9056A		5 mL	5 mL	OK			

Lab Sample ID	Client Sample ID	Method Chain	Basis	IC ICV 5 00154	IC SO4 ICV 00016				
STD 280-340426/2 IC		9056A							
STD 280-340426/3 IC		9056A							
STD 280-340426/4 IC		9056A							
STD 280-340426/5 IC		9056A							
STD 280-340426/6 IC		9056A							
STD 280-340426/7 IC		9056A							
ICV 280-340426/8		9056A		0.4 mL	0.4 mL				
ICB 280-340426/9		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.: 280-88669-1

SDG No.:

Batch Number: 340426 Batch Start Date: 09/01/16 09:47 Batch Analyst: Benson, Alex F

Batch Method: 9056A Batch End Date:

Batch Notes	
Batch Comment	pipettes: 100-C, 1000-Z, 5000IC
Regeneration Solution ID	160561175011
Perform Calculation (0=No, 1=Yes)	1

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.: 280-88669-1

SDG No.:

Batch Number: 340427 Batch Start Date: 09/01/16 09:47 Batch Analyst: Benson, Alex F

Batch Method: 9056A Batch End Date:

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	IC CAL cl/so4 00114	IC Cal low 00226	IC CL ICV 00013	IC ICV 5 00154
STD 280-340427/2 IC		9056A		5 mL	5 mL	0.02 mL	0.02 mL		
STD 280-340427/3 IC		9056A		5 mL	5 mL	0.05 mL	0.05 mL		
STD 280-340427/4 IC		9056A		5 mL	5 mL	0.1 mL	0.1 mL		
STD 280-340427/5 IC		9056A		5 mL	5 mL	1.2 mL	0.4 mL		
STD 280-340427/6 IC		9056A		5 mL	5 mL	2.4 mL	0.8 mL		
STD 280-340427/7 IC		9056A		5 mL	5 mL	4 mL	1 mL		
ICV 280-340427/8		9056A		5 mL	5 mL			0.4 mL	0.4 mL
ICB 280-340427/9		9056A		5 mL	5 mL				

Lab Sample ID	Client Sample ID	Method Chain	Basis	IC SO4 ICV 00016					
STD 280-340427/2 IC		9056A							
STD 280-340427/3 IC		9056A							
STD 280-340427/4 IC		9056A							
STD 280-340427/5 IC		9056A							
STD 280-340427/6 IC		9056A							
STD 280-340427/7 IC		9056A							
ICV 280-340427/8		9056A		0.4 mL					
ICB 280-340427/9		9056A							

Batch Notes	
Pipette ID	100-C, 1000-Z, 5000IC
Regeneration Solution ID	160561175011

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.: 280-88669-1

SDG No.:

Batch Number: 340427 Batch Start Date: 09/01/16 09:47 Batch Analyst: Benson, Alex F

Batch Method: 9056A Batch End Date:

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.: 280-88669-1

SDG No.:

Batch Number: 344268 Batch Start Date: 09/29/16 09:29 Batch Analyst: Benson, Alex F

Batch Method: 9056A Batch End Date:

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	CalcMsg	IC CAL cl/so4 00118	IC Cal low 00233	IC LCS 00703
CCV 280-344268/1		9056A		5 mL	5 mL	OK			5 mL
CCB 280-344268/2		9056A		5 mL	5 mL	OK			
MRL 280-344268/3		9056A		5 mL	5 mL	OK	0.05 mL	0.02 mL	
LCS 280-344354/1-A		9056A		5 mL	5 mL	OK			
LCSD 280-344354/2-A		9056A		5 mL	5 mL	OK			
MB 280-344354/3-A		9056A		5 mL	5 mL	OK			
280-88669-A-3-A	CCO2D	9056A	S	5 mL	5 mL	OK			
280-88669-A-3-B DU	CCO2D	9056A	S	5 mL	5 mL	OK			
280-88669-B-3-A MS	CCO2D-MS	9056A	S	5 mL	5 mL	OK			
280-88669-C-3-A MSD	CCO2D-MSD	9056A	S	5 mL	5 mL	OK			
CCV 280-344268/17		9056A		5 mL	5 mL	OK			5 mL
CCB 280-344268/18		9056A		5 mL	5 mL	OK			

Batch Notes	
Batch Comment	pipettes: 100-C, 1000-D, 5000IC
Regeneration Solution ID	160561175011
Perform Calculation (0=No, 1=Yes)	1

Basis	Basis Description
S	Soluble

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.: 280-88669-1

SDG No.:

Batch Number: 344269 Batch Start Date: 09/29/16 09:29 Batch Analyst: Benson, Alex F

Batch Method: 9056A Batch End Date:

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	IC CAL cl/so4 00118	IC Cal low 00233	IC LCS 00703	
CCV 280-344269/1		9056A		5 mL	5 mL			5 mL	
CCB 280-344269/2		9056A		5 mL	5 mL				
MRL 280-344269/3		9056A		5 mL	5 mL	0.05 mL	0.02 mL		
LCS 280-344354/1-A		9056A		5 mL	5 mL				
LCSD 280-344354/2-A		9056A		5 mL	5 mL				
MB 280-344354/3-A		9056A		5 mL	5 mL				
280-88669-A-3-A	CCO2D	9056A	S	5 mL	5 mL				
280-88669-A-3-B DU	CCO2D	9056A	S	5 mL	5 mL				
280-88669-B-3-A MS	CCO2D-MS	9056A	S	5 mL	5 mL				
280-88669-C-3-A MSD	CCO2D-MSD	9056A	S	5 mL	5 mL				
CCV 280-344269/17		9056A		5 mL	5 mL			5 mL	
CCB 280-344269/18		9056A		5 mL	5 mL				

Batch Notes	
Pipette ID	100-C, 1000-D, 5000IC
Regeneration Solution ID	160561175011

Basis	Basis Description
S	Soluble

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.: 280-88669-1

SDG No.:

Batch Number: 344354 Batch Start Date: 09/29/16 14:22 Batch Analyst: Phan, Thu L

Batch Method: DI Leach Batch End Date:

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	IC Cal low 00233	IC CL cal 00045	IC sulfatecal 00042	ICMS/MSD WEEK 00421
LCS 280-344354/1		DI Leach, 9056A		10.01 g	100 mL	10 mL	10 mL	10 mL	
LCS 280-344354/1		DI Leach, 9056A		10.01 g	100 mL	10 mL	10 mL	10 mL	
LCSD 280-344354/2		DI Leach, 9056A		10.00 g	100 mL	10 mL	10 mL	10 mL	
LCSD 280-344354/2		DI Leach, 9056A		10.00 g	100 mL	10 mL	10 mL	10 mL	
MB 280-344354/3		DI Leach, 9056A		10.04 g	100 mL				
MB 280-344354/3		DI Leach, 9056A		10.04 g	100 mL				
280-88669-A-3	CCO2D	DI Leach, 9056A	S	10.12 g	100 mL				
280-88669-A-3	CCO2D	DI Leach, 9056A	S	10.12 g	100 mL				
280-88669-A-3 DU	CCO2D	DI Leach, 9056A	S	10.07 g	100 mL				
280-88669-A-3 DU	CCO2D	DI Leach, 9056A	S	10.07 g	100 mL				
280-88669-B-3 MS	CCO2D-MS	DI Leach, 9056A	S	10.23 g	100 mL				1000 uL
280-88669-B-3 MS	CCO2D-MS	DI Leach, 9056A	S	10.23 g	100 mL				1000 uL
280-88669-C-3 MSD	CCO2D-MSD	DI Leach, 9056A	S	10.29 g	100 mL				1000 uL
280-88669-C-3 MSD	CCO2D-MSD	DI Leach, 9056A	S	10.29 g	100 mL				1000 uL

Batch Notes	
Balance ID	24750836
Batch Comment	start: 1430 finish: 1530
Blank Soil Lot Number	162639

Basis	Basis Description
S	Soluble

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.

Shipping and Receiving Documents

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

Chain of Custody Record

280-88669 Chain of Custody

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: Nikki Thomsen	Lab PM: DeHerrera, Jessica H	COC No: 280-57385-20244.1
Client Contact: Ms. Nikki Thomsen	Phone: 303-746-7647	E-Mail: jessica.deherrera@testamericainc.com	Page: Page 1 of 1
Company: TechLaw, Inc.			Job #:
Address: 1299 Washington Ave., Suite 270	Due Date Requested:		
City: Golden	TAT Requested (days): see special instructions		
State, Zip: CO, 80401			
Phone: 303-552-5806(Tel)	PO #: 03072.4.04.04B.A85M.00.F098		
Email: NThomsen@TechLawInc.com	WO #:		
Project Name: Gold King Mine, CO - A85M	Project #: 28015879		
Site: A8M5	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 - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	300_48HR - Nitrate, Nitrite - Water	351.2 - Nitrogen, Kjeldahl - Water	350.1 - Ammonia as N - Water	200.8_CWA - Total Chromium and Uranium - Water	3500_CR_D - Cr (VI) - Water	903.0, 904.0, A01R_U - Ra-226/228, Isotopic U - TA St. Louis	900.0 - Gross Alpha & Gross Beta - TA St. Louis - Water	9056A_28D, 9056A_48HR - Anions (Nitrate/Nitrite, Chloride/Sulfate - Solid	6020A - Total Thallium and Uranium - Solid	9045D - pH - Solid	903.0, 904.0, A01R_U - Ra-226/228, Isotopic U - TA St. Louis	900.0 - Gross Alpha & Gross Beta - TA St. Louis - Solid	350.1 - Ammonia - TA Savannah - Solid	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N	S	S	D	N	D	D	N	N	N	N	N	N		
CC02D	09/27/16	1057	G	W							X										24 Hr TAT
CC02D -MS	09/27/16	1057	G	W							X										24 Hr TAT
CC02D -MSD	09/27/16	1057	G	W							X										24 Hr TAT
CC02D	09/27/16	1130	G	S												X					48 Hr TAT
CC02D -MS	09/27/16	1130	G	S												X					48 Hr TAT
CC02D-MSD	09/27/16	1130	G	S												X					48 Hr TAT
CC02D	09/27/16	1127	G	S			~~X~~	~~X~~	~~X~~					X							48 Hr TAT
CC02D-MS	09/27/16	1127	G	S			~~X~~	~~X~~	09/27/16					X							48 Hr TAT
CC02D-MSD	09/27/16	1127	G	S			~~X~~	~~X~~	3 corrections					X							48 Hr TAT

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

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

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

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by: [signature]	Date/Time: 09/27/16 1300pm	Company: Techlaw	Received by: [signature]	Date/Time: 9-28-16 0655	Company: TAD
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:	Company:
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: 2.9 IRS CF0.0 transferred SPW 9-28-16

Login Sample Receipt Checklist

Client: TechLaw, Inc.

Job Number: 280-88669-1

Login Number: 88669
List Number: 1
Creator: Woodworth, Sean P

List Source: TestAmerica Denver

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