received 09/26/2013
Project 2130

ALS Environmental

Inorganics

Case Narrative

Colorado Oil & Gas Conservation Commission

TBAL

Work Order Number: 1308515

1. This report consists of 3 water samples.

2. The samples were received cool and intact by ALS on 08/29/13.

3. The samples were prepared for analysis based on Methods for the Chemical Analysis of Waters and Wastes (MCAWW), May 1994 procedures and Environmental Monitoring Systems Laboratory (EMSL) Rev 2.1 procedures.

4. The samples were analyzed following MCAWW and EMSL procedures for the current revisions of the following SOPs and methods:

Analyte	Method	SOP #
Alkalinity	310.1	1106
Bicarbonate	310.1	1106
Carbonate	310.1	1106
pH	150.1	1126
Specific conductance	120.1	1128
TDS	160.1	1101
Bromide	300.0 Revision 2.1	1113
Chloride	300.0 Revision 2.1	1113
Fluoride	300.0 Revision 2.1	1113
Nitrate as N	300.0 Revision 2.1	1113
Nitrite as N	300.0 Revision 2.1	1113
Sulfate	300.0 Revision 2.1	1113

5. All standards and solutions were used within their recommended shelf life.

6. The samples were prepared and analyzed within the established hold time for each analysis.

All in house quality control procedures were followed, as described below.

7. General quality control procedures.

   - A preparation (method) blank and laboratory control sample (LCS) were prepared and analyzed with the samples in each applicable preparation batch.
   - The method blank associated with each applicable batch was below the reporting limit for the requested analytes.
   - All laboratory control sample criteria were met.
   - All initial and continuing calibration blanks were below the reporting limit for the requested analytes.
   - All initial and continuing calibration verifications were within the acceptance criteria for the requested analytes.

8. Matrix specific quality control procedures.

   Sample 1308515-3 was designated as the quality control sample for the alkalinity, bicarbonate, carbonate, pH, specific conductance, bromide, chloride, fluoride, nitrate as N, nitrite as N, and sulfate analyses. Sample 1308515-3 was also designated at the quality control sample for TDS batch TD130904-2. Per method requirements, matrix QC was performed for the TDS batch TD130830-1. Since a sample from this order number was not the selected quality control (QC) sample, matrix specific QC results are not included in this report.

   Similarity of matrix and therefore relevance of the QC results should not be automatically inferred for any sample other than the native sample selected for QC.

   - A matrix spike (MS) and matrix spike duplicate (MSD) were prepared and analyzed with the bromide, chloride, fluoride, nitrate as N, nitrite as N, and sulfate batch. All guidance criteria for precision and accuracy were met.
   - A sample duplicate was prepared and analyzed with the alkalinity, bicarbonate, carbonate, pH, specific conductance, and TDS batches specified above. All guidance criteria for precision were met.

     For pH, the difference between the pH of the sample and its duplicate must be less than or equal to 0.2 pH units to be in control. RPD is not calculated for this analysis.

9. It was necessary to dilute the samples in order to bring the chloride and/or sulfate concentrations into the analytical range of the ion chromatograph (IC).

   Reduced aliquots were taken of the samples for the alkalinity, bicarbonate, and carbonate analysis. Reporting limits were elevated accordingly.

   A reduced aliquot was taken of sample 1308515-1 for the TDS analysis. Reporting limits were elevated accordingly.

10. Manual integrations are performed when needed to provide consistent and defensible data following the guidelines in the current revision of SOP 939. Whenever manual integrations are performed, before and after chromatograms of the peak that were manually integrated are included in the report along with the reason why the re-integration was necessary.

The data contained in the following report have been reviewed and approved by the personnel listed below. In addition, ALS certifies that the analyses reported herein are true, complete and correct within the limits of the methods employed.

Megan Johnson
Inorganics Primary Data Reviewer

9/11/13
Date

Inorganics Final Data Reviewer

9/11/13
Date

Inorganic Data Reporting Qualifiers

The following qualifiers are used by the laboratory when reporting results of inorganic analyses.

- Concentration qualifier -- A "J" is entered if the reported value was obtained from a reading that was less than the Reporting Limit but greater than or equal to ALS's Method Detection Limit. If the analyte was analyzed for but not detected a "U" is entered.

- QC qualifier -- Specified entries and their meanings are as follows:

  N - Spiked sample recovery not within control limits.

  * - Duplicate analysis (relative percent difference) not within control limits.

  Z - Calibration spike recovery not within control limits.

Chain of Custody

ALS Environmental -- FC

Sample Number(s) Cross-Reference Table

OrderNum: 1308515
Client Name: Colorado Oil & Gas Conservation Commission
Client Project Name: TBAL
Client Project Number:
Client PO Number: PHA 14-22

Client Sample Number	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
McDonald 1	1308515-1		WATER	28-Aug-13	8:40
McDonald 2	1308515-2		WATER	28-Aug-13	9:10
752787 Earls	1308515-3		WATER	28-Aug-13	9:46

ALS Laboratory Group

225 Commerce Drive, Fort Collins, Colorado 80524
TF: (800) 443-1511 PH: (970) 490-1511 FX: (970) 490-1522

Chain-of-Custody

Form 202r8

WORKORDER #	1308515
PAGE	1 of 1
DISPOSAL	(By Lab) or Return to Client

PROJECT NAME	TBAL	SAMPLER	Gintautas
PROJECT No.		SITE ID	
		EDD FORMAT	
		PURCHASE ORDER	
COMPANY NAME	Colo. Oil + Gas Cons. Comm.	BILL TO COMPANY	
SEND REPORT TO	Peter Gintautas	INVOICE ATTN TO	
ADDRESS	PO Box 108	ADDRESS	
CITY / STATE / ZIP	Trinidad Co 81082	CITY / STATE / ZIP	
PHONE	719-846-3091	PHONE	
FAX		FAX	
E-MAIL	peter.gintautas@state.co.us	E-MAIL	

DATE: 28 Aug 2013 TURNAROUND: 28 Day

Lab ID	Field ID	Matrix	Sample Date	Sample Time	# Bottles	Pres.	QC	Dissolved Gases	8270 + 1,4-dioxane TIC	200.7 dissolved	200.8 dissolved	Anions	pH	Conductivity	TDS	Alkalinity (Tot, HCO3, CO3)	SAR calc	Cation Anion Balance	TOC	
1	McDonald 1	W	28Aug13	08:40	6	8		X	X	X	X	X	X	X	X	X	X	X		
		W			1	3													X	
2	McDonald 2	W	28Aug13	09:10	6	8		X	X	X	X	X	X	X	X	X	X	X		
		W			1	3													X	
3	752787 Early	W	28Aug13	09:46	8	8		X	X	\	X	X	X	X	X	X	X	X		metals MS/D Well chosen QC volumes
		W			1	3													X	

*Time Zone (Circle): EST CST (MST) PST Matrix: O = oil S = soil NS = non-soil solid W = water L = liquid E = extract F = filter

For metals or anions, please detail analytes below.

Comments: Anions = Br, Cl, F, NO2, NO3, SO4
dissolved = filter + preserve at lab
Metals list as in other TBAL

QC PACKAGE (check below)	
	LEVEL II (Standard QC)
	LEVEL III (Std QC + forms)
X	LEVEL IV (Std QC + forms + raw data) CD only

	SIGNATURE	PRINTED NAME	DATE	TIME
RELINQUISHED BY				
RECEIVED BY	[signature]	Jacob Roddy	8/28/13	0920
RELINQUISHED BY				
RECEIVED BY				
RELINQUISHED BY				
RECEIVED BY				

Preservative Key: 1-HCl 2-HNO3 3-H2SO4 4-NaOH 5-NaHSO4 7-Other 8-4 degrees C 9-5035

ALS Environmental - Fort Collins
CONDITION OF SAMPLE UPON RECEIPT FORM

Client: COGCC Workorder No: 1308515

Project Manager: ARW Initials: JLR Date: 8/29/13

1. Does this project require any special handling in addition to standard ALS procedures?		YES	(NO)
2. Are custody seals on shipping containers intact?	NONE	(YES)	NO
3. Are Custody seals on sample containers intact?	(NONE)	YES	NO
4. Is there a COC (Chain-of-Custody) present or other representative documents?		(YES)	NO
5. Are the COC and bottle labels complete and legible?		(YES)	NO
6. Is the COC in agreement with samples received? (IDs, dates, times, no. of samples, no. of containers, matrix, requested analyses, etc.)		(YES)	NO
7. Were airbills / shipping documents present and/or removable?	DROP OFF	(YES)	NO
8. Are all aqueous samples requiring preservation preserved correctly? (excluding volatiles)	N/A	(YES)	NO
9. Are all aqueous non-preserved samples pH 4-9?	N/A	(YES)	NO
10. Is there sufficient sample for the requested analyses?		(YES)	NO
11. Were all samples placed in the proper containers for the requested analyses?		(YES)	NO
12. Are all samples within holding times for the requested analyses?		(YES)	NO
13. Were all sample containers received intact? (not broken or leaking, etc.)		(YES)	NO
14. Are all samples requiring no headspace (VOC, GRO, RSK/MEE, Rx CN/S, radon) headspace free? Size of bubble: ____ < green pea ____ > green pea	N/A	(YES)	NO
15. Do any water samples contain sediment? Amount Amount of sediment: ____ dusting ____ moderate ____ heavy	N/A	YES	(NO)
16. Were the samples shipped on ice?		(YES)	NO
17. Were cooler temperatures measured at 0.1-6.0°C? IR gun used*: #2 (#4)	RAD ONLY	(YES)	NO

Cooler #:	1							
Temperature (°C):	4°C							
No. of custody seals on cooler:	2							
DOT Survey/ Acceptance Information — External µR/hr reading:	11							
Background µR/hr reading:	11							

Were external µR/hr readings ≤ two times background and within DOT acceptance criteria? (YES) / NO / NA (If no, see Form 008.)

Additional Information: PROVIDE DETAILS BELOW FOR A NO RESPONSE TO ANY QUESTION ABOVE, EXCEPT #1 AND #16.

If applicable, was the client contacted? YES / NO / (NA) Contact: _____ Date/Time: _____

Project Manager Signature / Date: 8/29/13

*IR Gun #2: Oakton, SN 29922500201-0066
*IR Gun #4: Oakton, SN 2372220101-0002

Form 201r24.xls (06/04/2012)

1308515

From: (719) 846-3091
Peter Gintautas
Colo. Oil & Gas Cons. Comm.
213 Corundum RD

Trinidad, CO 81082

Origin ID: PUBA

FedEx Express

J13201306280326

Ship Date: 28AUG13
ActWgt: 46.0 LB
CAD: 4076443/INET3430

Delivery Address Bar Code

SHIP TO: (970) 490-1511

BILL SENDER

Amy Wolf
ALS Laboratory Group
225 COMMERCE DR

FORT COLLINS, CO 80524

Ref # Complaint 200247064
Invoice #
PO #
Dept #

THU - 29 AUG 10:30A
PRIORITY OVERNIGHT

TRK# 7965 6650 5752
0201

72 FTCA

80524
CO-US
DEN

51AG1/0989/1A9E

Sample Results

BICARBONATE AS CaCO3

Method EPA310.1

Sample Results

Lab Name: ALS Environmental -- FC
Client Name: Colorado Oil & Gas Conservation Commission
Client Project ID: TBAL
Work Order Number: 1308515
Reporting Basis: As Received
Prep Method: METHOD
Analyst: Kristen A. Middleton

Final Volume: 100 ml
Matrix: WATER
Result Units: MG/L

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	RptLimit LOD/LOQ	Flag	Sample Aliquot
McDonald 1	1308515-1	08/28/2013	09/06/2013	09/06/2013	N/A	1	560	20		25 ml
McDonald 2	1308515-2	08/28/2013	09/06/2013	09/06/2013	N/A	1	210	20		25 ml
752787 Earls	1308515-3	08/28/2013	09/06/2013	09/06/2013	N/A	1	320	20		25 ml

Comments:

1. ND or U = Not Detected at or above the client requested detection limit.

Data Package ID: *ak1308515-1*

CARBONATE AS CaCO3

Method EPA310.1

Sample Results

Lab Name: **ALS Environmental -- FC**
Client Name: Colorado Oil & Gas Conservation Commission
Client Project ID: TBAL
Work Order Number: 1308515 **Final Volume:** 100 ml
Reporting Basis: As Received **Matrix:** WATER
Prep Method: METHOD **Result Units:** MG/L
Analyst: Kristen A. Middleton

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	RptLimit LOD/LOQ	Flag	Sample Aliquot
McDonald 1	1308515-1	08/28/2013	09/06/2013	09/06/2013	N/A	1	20	20	U	25 ml
McDonald 2	1308515-2	08/28/2013	09/06/2013	09/06/2013	N/A	1	20	20	U	25 ml
752787 Earls	1308515-3	08/28/2013	09/06/2013	09/06/2013	N/A	1	20	20	U	25 ml

Comments:

1. ND or U = Not Detected at or above the client requested detection limit.

Data Package ID: *ak1308515-1*

TOTAL ALKALINITY AS CaCO3

Method EPA310.1

Sample Results

Lab Name: **ALS Environmental -- FC**
Client Name: Colorado Oil & Gas Conservation Commission
Client Project ID: TBAL
Work Order Number: 1308515
Reporting Basis: As Received
Prep Method: METHOD
Analyst: Kristen A. Middleton

Final Volume: 100 ml
Matrix: WATER
Result Units: MG/L

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	RptLimit LOD/LOQ	Flag	Sample Aliquot
McDonald 1	1308515-1	08/28/2013	09/06/2013	09/06/2013	N/A	1	560	20		25 ml
McDonald 2	1308515-2	08/28/2013	09/06/2013	09/06/2013	N/A	1	210	20		25 ml
752787 Earls	1308515-3	08/28/2013	09/06/2013	09/06/2013	N/A	1	320	20		25 ml

Comments:

1. ND or U = Not Detected at or above the client requested detection limit.

Data Package ID: *ak1308515-1*

pH in water @25 Degrees Celsius

Method EPA150.1

Sample Results

Lab Name: **ALS Environmental -- FC**
Client Name: Colorado Oil & Gas Conservation Commission
Client Project ID: TBAL
Work Order Number: 1308515
Reporting Basis: As Received
Prep Method: NONE
Analyst: Alex J. Devonald

Final Volume: 20 ml
Matrix: WATER
Result Units: pH

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	RptLimit LOD/LOQ	Flag	Sample Aliquot
McDonald 1	1308515-1	08/28/2013	08/30/2013	08/30/2013	N/A	1	7.57	0.1		20 ml
McDonald 2	1308515-2	08/28/2013	08/30/2013	08/30/2013	N/A	1	7.37	0.1		20 ml
752787 Earls	1308515-3	08/28/2013	08/30/2013	08/30/2013	N/A	1	7.73	0.1		20 ml

Comments:

1. ND or U = Not Detected at or above the client requested detection limit.

Data Package ID: *ph1308515-1*

SPECIFIC CONDUCTIVITY

Method EPA120.1

Sample Results

Lab Name: ALS Environmental -- FC
Client Name: Colorado Oil & Gas Conservation Commission
Client Project ID: TBAL
Work Order Number: 1308515
Reporting Basis: As Received
Prep Method: NONE
Analyst: Alex J. Devonald

Final Volume: 45 ml
Matrix: WATER
Result Units: umhos/cm

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	RptLimit LOD/LOQ	Flag	Sample Aliquot
McDonald 1	1308515-1	08/28/2013	08/30/2013	08/30/2013	N/A	1	1448	1		45 ml
McDonald 2	1308515-2	08/28/2013	08/30/2013	08/30/2013	N/A	1	687	1		45 ml
752787 Earls	1308515-3	08/28/2013	08/30/2013	08/30/2013	N/A	1	813	1		45 ml

Comments:

1. ND or U = Not Detected at or above the client requested detection limit.

Data Package ID: *sc1308515-1*

TOTAL DISSOLVED SOLIDS

Method EPA160.1

Sample Results

Lab Name: **ALS Environmental -- FC**
Client Name: Colorado Oil & Gas Conservation Commission
Client Project ID: TBAL
Work Order Number: 1308515
Reporting Basis: As Received
Prep Method: METHOD
Analyst: Alex J. Devonald

Final Volume: 50 ml
Matrix: WATER
Result Units: MG/L

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	RptLimit LOD/LOQ	Flag	Sample Aliquot
McDonald 1	1308515-1	08/28/2013	08/30/2013	09/03/2013	N/A	1	950	40		50 ml
McDonald 2	1308515-2	08/28/2013	08/30/2013	09/03/2013	N/A	1	460	20		100 ml
752787 Earls	1308515-3	08/28/2013	09/04/2013	09/05/2013	N/A	1	490	20		100 ml

Comments:

1. ND or U = Not Detected at or above the client requested detection limit.

Data Package ID: *td1308515-1*

Ion Chromatography

Method EPA300.0 Revision 2.1

Sample Results

Lab Name: ALS Environmental -- FC

Work Order Number: 1308515

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: TBAL

Field ID: McDonald 1
Lab ID: 1308515-1

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 28-Aug-13
Date Extracted: 29-Aug-13
Date Analyzed: 29-Aug-13
Prep Method: NONE

Prep Batch: IC130829-1
QCBatchID: IC130829-1-1
Run ID: IC130829-1A2
Cleanup: NONE
Basis: As Received
File Name: 30829_021.dxd

Analyst: Alex J. Devonald
Sample Aliquot: 5 ml
Final Volume: 5 ml
Result Units: MG/L
Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	RptLimit\ LOD\LOQ	MDL/DL	Result Qualifier	EPA Qualifier
16984-48-8	FLUORIDE AnalysisTime: 12:21	1	0.53	0.1	0.03		
16887-00-6	CHLORIDE AnalysisTime: 13:31	20	62	4	1.2		
14797-65-0	NITRITE AS N AnalysisTime: 12:21	1	0.1	0.1	0.03	U	
24959-67-9	BROMIDE AnalysisTime: 12:21	1	0.46	0.2	0.06		
14797-55-8	NITRATE AS N AnalysisTime: 12:21	1	0.53	0.2	0.06		
14808-79-8	SULFATE AnalysisTime: 13:31	20	170	20	6		

Data Package ID: *ic1308515-1*

Ion Chromatography

Method EPA300.0 Revision 2.1

Sample Results

Lab Name: ALS Environmental -- FC

Work Order Number: 1308515

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: TBAL

Field ID: McDonald 2
Lab ID: 1308515-2

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 28-Aug-13
Date Extracted: 29-Aug-13
Date Analyzed: 29-Aug-13
Prep Method: NONE

Prep Batch: IC130829-1
QCBatchID: IC130829-1-1
Run ID: IC130829-1A2
Cleanup: NONE
Basis: As Received
File Name: 30829_022.dxd

Analyst: Alex J. Devonald
Sample Aliquot: 5 ml
Final Volume: 5 ml
Result Units: MG/L
Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	RptLimit\ LOD\LOQ	MDL/DL	Result Qualifier	EPA Qualifier
16984-48-8	FLUORIDE AnalysisTime: 12:35	1	0.3	0.1	0.03		
16887-00-6	CHLORIDE AnalysisTime: 13:45	5	28	1	0.3		
14797-65-0	NITRITE AS N AnalysisTime: 12:35	1	0.1	0.1	0.03	U	
24959-67-9	BROMIDE AnalysisTime: 12:35	1	0.21	0.2	0.06		
14797-55-8	NITRATE AS N AnalysisTime: 12:35	1	1.9	0.2	0.06		
14808-79-8	SULFATE AnalysisTime: 13:45	5	99	5	1.5		

Data Package ID: *ic1308515-1*

Ion Chromatography

Method EPA300.0 Revision 2.1

Sample Results

Lab Name: ALS Environmental -- FC

Work Order Number: 1308515

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: TBAL

Field ID: 752787 Earls
Lab ID: 1308515-3

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 28-Aug-13
Date Extracted: 29-Aug-13
Date Analyzed: 29-Aug-13
Prep Method: NONE

Prep Batch: IC130829-1
QCBatchID: IC130829-1-1
Run ID: IC130829-1A2
Cleanup: NONE
Basis: As Received
File Name: 30829_025.dxd

Analyst: Alex J. Devonald
Sample Aliquot: 5 ml
Final Volume: 5 ml
Result Units: MG/L
Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	RptLimit\ LOD\LOQ	MDL/DL	Result Qualifier	EPA Qualifier
16984-48-8	FLUORIDE AnalysisTime: 12:49	1	0.57	0.1	0.03		
16887-00-6	CHLORIDE AnalysisTime: 14:27	10	24	2	0.6		
14797-65-0	NITRITE AS N AnalysisTime: 12:49	1	0.1	0.1	0.03	U	
24959-67-9	BROMIDE AnalysisTime: 12:49	1	0.15	0.2	0.06	J	
14797-55-8	NITRATE AS N AnalysisTime: 12:49	1	5.7	0.2	0.06		
14808-79-8	SULFATE AnalysisTime: 12:49	1	62	1	0.3		

Data Package ID: *ic1308515-1*

Summary Report Forms

BICARBONATE AS CaCO3

Method EPA310.1

Method Blank

Lab Name: ALS Environmental -- FC
Work Order Number: 1308515
Client Name: Colorado Oil & Gas Conservation Commission
ClientProject ID: TBAL

Lab ID: AK130906-1MB

Sample Matrix: WATER
% Moisture: N/A

Prep Batch: AK130906-1
QCBatchID: AK130906-1-1
Run ID: AK130906-1A
Cleanup: NONE
Basis: N/A

Sample Aliquot: 100 ml
Final Volume: 100 ml
Result Units: MG/L

Lab ID	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	RptLimit LOD/LOQ	Flag
AK130906-1MB	9/6/2013	09/06/2013	N/A	1	5	5	U

Comments:

1. ND or U = Not Detected at or above the client requested detection limit.

Data Package ID: *ak1308515-1*

CARBONATE AS CaCO3

Method EPA310.1

Method Blank

Lab Name: ALS Environmental -- FC
Work Order Number: 1308515
Client Name: Colorado Oil & Gas Conservation Commission
ClientProject ID: TBAL

Lab ID: AK130906-1MB

Sample Matrix: WATER
% Moisture: N/A

Prep Batch: AK130906-1
QCBatchID: AK130906-1-1
Run ID: AK130906-1A
Cleanup: NONE
Basis: N/A

Sample Aliquot: 100 ml
Final Volume: 100 ml
Result Units: MG/L

Lab ID	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	RptLimit LOD/LOQ	Flag
AK130906-1MB	9/6/2013	09/06/2013	N/A	1	5	5	U

Comments:

1. ND or U = Not Detected at or above the client requested detection limit.

Data Package ID: *ak1308515-1*

TOTAL ALKALINITY AS CaCO3

Method EPA310.1

Method Blank

Lab Name: ALS Environmental -- FC
Work Order Number: 1308515
Client Name: Colorado Oil & Gas Conservation Commission
ClientProject ID: TBAL

Lab ID: AK130906-1MB

Sample Matrix: WATER
% Moisture: N/A

Prep Batch: AK130906-1
QCBatchID: AK130906-1-1
Run ID: AK130906-1A
Cleanup: NONE
Basis: N/A

Sample Aliquot: 100 ml
Final Volume: 100 ml
Result Units: MG/L

Lab ID	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	RptLimit LOD/LOQ	Flag
AK130906-1MB	9/6/2013	09/06/2013	N/A	1	5	5	U

Comments:

1. ND or U = Not Detected at or above the client requested detection limit.

Data Package ID: *ak1308515-1*

TOTAL ALKALINITY AS CaCO3

Method EPA310.1

Laboratory Control Sample

Lab Name: ALS Environmental -- FC
Work Order Number: 1308515
Client Name: Colorado Oil & Gas Conservation Commission
ClientProject ID: TBAL

Lab ID: AK130906-1LCS

Sample Matrix: WATER
% Moisture: N/A
Date Collected: N/A
Date Extracted: 09/06/2013
Date Analyzed: 09/06/2013

Prep Batch: AK130906-1
QCBatchID: AK130906-1-1
Run ID: AK130906-1A
Cleanup: NONE
Basis: N/A

Sample Aliquot: 100 ml
Final Volume: 100 ml
Result Units: MG/L

CASNO	Target Analyte	Spike Added	LCS Result	Reporting Limit	Result Qualifier	LCS % Rec.	Control Limits
	TOTAL ALKALINITY AS CaCO3	100	97.7	5		98	85 - 115

Data Package ID: *ak1308515-1*

BICARBONATE AS CaCO3

Method EPA310.1

Duplicate Sample Results

Lab Name: **ALS Environmental -- FC**
Work Order Number: 1308515
Client Name: Colorado Oil & Gas Conservation Commission
ClientProject ID: TBAL

Reporting Basis: As Received
Sample Aliquot: 25 ml
Final Volume: 100ml
Matrix: WATER
Result Units MG/L

Client Sample ID	Lab ID	Date Prepared	Date Analyzed	Dilution Factor	Duplicate Result	Dup Qual	Sample Result	Samp Qual	Reporting Limit	RPD	RPD Limit
752787 Earls	1308515-3D	09/06/2013	09/06/2013	1	319		320		20	1	15

Comments:

1. ND or U = Not Detected at or above the client requested detection limit.

Data Package ID: *ak1308515-1*

CARBONATE AS CaCO3

Method EPA310.1

Duplicate Sample Results

Lab Name: **ALS Environmental -- FC**
Work Order Number: 1308515
Client Name: Colorado Oil & Gas Conservation Commission
ClientProject ID: TBAL

Reporting Basis: As Received
Sample Aliquot: 25 ml
Final Volume: 100ml
Matrix: WATER
Result Units MG/L

Client Sample ID	Lab ID	Date Prepared	Date Analyzed	Dilution Factor	Duplicate Result	Dup Qual	Sample Result	Samp Qual	Reporting Limit	RPD	RPD Limit
752787 Earls	1308515-3D	09/06/2013	09/06/2013	1	20	U	20	U	20		15

Comments:

1. ND or U = Not Detected at or above the client requested detection limit.

Data Package ID: *ak1308515-1*

TOTAL ALKALINITY AS CaCO3

Method EPA310.1

Duplicate Sample Results

Lab Name: **ALS Environmental -- FC**
Work Order Number: 1308515
Client Name: Colorado Oil & Gas Conservation Commission
ClientProject ID: TBAL

Reporting Basis: As Received
Sample Aliquot: 25 ml
Final Volume: 100ml
Matrix: WATER
Result Units MG/L

Client Sample ID	Lab ID	Date Prepared	Date Analyzed	Dilution Factor	Duplicate Result	Dup Qual	Sample Result	Samp Qual	Reporting Limit	RPD	RPD Limit
752787 Earls	1308515-3D	09/06/2013	09/06/2013	1	319		320		20	1	15

Comments:

1. ND or U = Not Detected at or above the client requested detection limit.

Data Package ID: *ak1308515-1*

Prep Batch ID: AK130906-1

Start Date: 09/06/13
Start Time: 11:30
Prep Analyst: Kristin L. Ratajczak

End Date: 09/06/13
End Time: 13:00

Concentration Method: NONE
Extract Method: METHOD
Initial Volume Units: ml
Final Volume Units: ml

Batch Created By: ajd
Date Created: 09/06/13
Time Created: 10:18
Validated By: klr
Date Validated: 09/06/13
Time Validated: 13:13

Comments:

QC Batch ID: AK130906-1-1

Lab ID	QC Type	Field ID	Matrix	Date Collected	Initial Wt/Vol	Final Wt/Vol	Cleanup Method	Cleanup DF	Order Number
AK130906-1	MB	XXXXXX	WATER	XXXXXX	100	100	NONE	1	1308515
AK130906-1	LCS	XXXXXX	WATER	XXXXXX	100	100	NONE	1	1308515
1308515-3	DUP	752787 Earls	WATER	8/28/2013	25	100	NONE	1	1308515
1309052-2	DUP	XXXXXX	WATER	XXXXXX	25	100	NONE	1	1309052
1308515-1	SMP	McDonald 1	WATER	8/28/2013	25	100	NONE	1	1308515
1308515-2	SMP	McDonald 2	WATER	8/28/2013	25	100	NONE	1	1308515
1308515-3	SMP	752787 Earls	WATER	8/28/2013	25	100	NONE	1	1308515
1308545-1	SMP	XXXXXX	WATER	XXXXXX	25	100	NONE	1	1308545
1308545-3	SMP	XXXXXX	WATER	XXXXXX	25	100	NONE	1	1308545
1308559-1	SMP	XXXXXX	WATER	XXXXXX	25	100	NONE	1	1308559
1308559-2	SMP	XXXXXX	WATER	XXXXXX	25	100	NONE	1	1308559
1308560-2	SMP	XXXXXX	WATER	XXXXXX	25	100	NONE	1	1308560
1308561-1	SMP	XXXXXX	WATER	XXXXXX	25	100	NONE	1	1308561
1308563-2	SMP	XXXXXX	WATER	XXXXXX	100	100	NONE	1	1308563
1308563-3	SMP	XXXXXX	WATER	XXXXXX	25	100	NONE	1	1308563
1308563-4	SMP	XXXXXX	WATER	XXXXXX	25	100	NONE	1	1308563
1308563-5	SMP	XXXXXX	WATER	XXXXXX	25	100	NONE	1	1308563
1309040-2	SMP	XXXXXX	WATER	XXXXXX	25	100	NONE	1	1309040
1309040-3	SMP	XXXXXX	WATER	XXXXXX	25	100	NONE	1	1309040
1309041-1	SMP	XXXXXX	WATER	XXXXXX	25	100	NONE	1	1309041
1309052-2	SMP	XXXXXX	WATER	XXXXXX	25	100	NONE	1	1309052
1309052-3	SMP	XXXXXX	WATER	XXXXXX	25	100	NONE	1	1309052

pH

Method EPA150.1

Duplicate Sample Results

Lab Name: ALS Environmental -- FC

Work Order Number: 1308515

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: TBAL

Field ID: 752787 Earls
Lab ID: 1308515-3D

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 08/28/2013
Date Extracted: 08/30/2013
Date Analyzed: 08/30/2013

Prep Batch: PH130830-1
QCBatchID: PH130830-1-1
Run ID: pH130830-1A
Cleanup: NONE
Basis: As Received
File Name:

Sample Aliquot: 20 ml
Final Volume: 20 ml
Result Units: pH
Clean DF: 1

CASNO	Target Analyte	Sample Result	Samp Qual	Duplicate Result	Dup Qual	Reporting Limit	Dilution Factor	RPD	RPD Limit
10-29-7	PH	7.73		7.73		0.1	1		0.2

Data Package ID: *ph1308515-1*

Prep Batch ID: PH130830-1

Start Date: 08/30/13
Start Time: 8:00
Prep Analyst: Alex J. Devonald

End Date: 08/30/13
End Time: 10:50

Concentration Method: NONE
Extract Method: NONE
Initial Volume Units: ml
Final Volume Units: ml

Batch Created By: AJD
Date Created: 08/30/13
Time Created: 8:10
Validated By: AJD
Date Validated: 08/30/13
Time Validated: 10:53

Comments:

QC Batch ID: PH130830-1-1

Lab ID	QC Type	Field ID	Matrix	Date Collected	Initial Wt/Vol	Final Wt/Vol	Cleanup Method	Cleanup DF	Order Number
1308515-3	DUP	752787 Earls	WATER	8/28/2013	20	20	NONE	1	1308515
1308488-1	SMP	XXXXXX	WATER	XXXXXX	20	20	NONE	1	1308488
1308488-2	SMP	XXXXXX	WATER	XXXXXX	20	20	NONE	1	1308488
1308488-3	SMP	XXXXXX	WATER	XXXXXX	20	20	NONE	1	1308488
1308488-4	SMP	XXXXXX	WATER	XXXXXX	20	20	NONE	1	1308488
1308514-1	SMP	XXXXXX	WATER	XXXXXX	20	20	NONE	1	1308514
1308515-1	SMP	McDonald 1	WATER	8/28/2013	20	20	NONE	1	1308515
1308515-2	SMP	McDonald 2	WATER	8/28/2013	20	20	NONE	1	1308515
1308515-3	SMP	752787 Earls	WATER	8/28/2013	20	20	NONE	1	1308515

QC Types

CAR	Carrier reference sample		DUP	Laboratory Duplicate
LCS	Laboratory Control Sample		LCSD	Laboratory Control Sample Duplicate
MB	Method Blank		MS	Laboratory Matrix Spike
MSD	Laboratory Matrix Spike Duplicate		REP	Sample replicate
RVS	Reporting Level Verification Standard		SMP	Field Sample
SYS	Sample Yield Spike			

PH

Method EPA150.1

Calibration Verifications

Lab Name: ALS Environmental -- FC
Work Order Number: 1308515
Client Name: Colorado Oil & Gas Conservation Commission
ClientProject ID: TBAL

Run ID: pH130830-1A
Result Units: pH

Lab ID	Verification Type	Date Analyzed	Time Analyzed	Spike Added	Result	Reporting Limit	Result Qualifier	% Rec.	Control Limits
ICV	Initial Calibration	8/30/2013		7	7.00	0.1	N/A		6.95 - 7.05
CCV1	Continuing Calibration	8/30/2013		7	7.03	0.1	N/A		6.9 - 7.1

Data Package ID: *ph1308515-1*

Specific Conductance in Water

Method EPA120.1

Duplicate Sample Results

Lab Name: ALS Environmental -- FC

Work Order Number: 1308515

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: TBAL

Field ID: 752787 Earls
Lab ID: 1308515-3D

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 08/28/2013
Date Extracted: 08/30/2013
Date Analyzed: 08/30/2013

Prep Batch: SC130830-1
QCBatchID: SC130830-1-1
Run ID: SC130830-1A
Cleanup: NONE
Basis: As Received
File Name:

Sample Aliquot: 45 ml
Final Volume: 45 ml
Result Units: umhos/cm
Clean DF: 1

CASNO	Target Analyte	Sample Result	Samp Qual	Duplicate Result	Dup Qual	Reporting Limit	Dilution Factor	RPD	RPD Limit
10-34-4	SPECIFIC CONDUCTIVITY	813		813		1	1	0	10

Data Package ID: *sc1308515-1*

Prep Batch ID: SC130830-1

Start Date: 08/30/13
Start Time: 8:00
Prep Analyst: Alex J. Devonald

End Date: 08/30/13
End Time: 11:30

Concentration Method: NONE
Extract Method: NONE
Initial Volume Units: ml
Final Volume Units: ml

Batch Created By: AJD
Date Created: 08/30/13
Time Created: 8:12
Validated By: AJD
Date Validated: 08/30/13
Time Validated: 11:36

Comments:

QC Batch ID: SC130830-1-1

Lab ID	QC Type	Field ID	Matrix	Date Collected	Initial Wt/Vol	Final Wt/Vol	Cleanup Method	Cleanup DF	Order Number
1308515-3	DUP	752787 Earls	WATER	8/28/2013	45	45	NONE	1	1308515
1308488-1	SMP	XXXXXX	WATER	XXXXXX	45	45	NONE	1	1308488
1308488-2	SMP	XXXXXX	WATER	XXXXXX	45	45	NONE	1	1308488
1308488-3	SMP	XXXXXX	WATER	XXXXXX	45	45	NONE	1	1308488
1308488-4	SMP	XXXXXX	WATER	XXXXXX	45	45	NONE	1	1308488
1308493-1	SMP	XXXXXX	WATER	XXXXXX	45	45	NONE	1	1308493
1308496-1	SMP	XXXXXX	WATER	XXXXXX	45	45	NONE	1	1308496
1308515-1	SMP	McDonald 1	WATER	8/28/2013	45	45	NONE	1	1308515
1308515-2	SMP	McDonald 2	WATER	8/28/2013	45	45	NONE	1	1308515
1308515-3	SMP	752787 Earls	WATER	8/28/2013	45	45	NONE	1	1308515

QC Types

CAR	Carrier reference sample		DUP	Laboratory Duplicate
LCS	Laboratory Control Sample		LCSD	Laboratory Control Sample Duplicate
MB	Method Blank		MS	Laboratory Matrix Spike
MSD	Laboratory Matrix Spike Duplicate		REP	Sample replicate
RVS	Reporting Level Verification Standard		SMP	Field Sample
SYS	Sample Yield Spike			

SPECIFIC CONDUCTIVITY

Method EPA120.1

Calibration Verifications

Lab Name: **ALS Environmental -- FC**

Work Order Number: 1308515

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: TBAL

Run ID: SC130830-1A

Result Units: umhos/c

Lab ID	Verification Type	Date Analyzed	Time Analyzed	Spike Added	Result	Reporting Limit	Result Qualifier	% Rec.	Control Limits
ICV	Initial Calibration	8/30/2013		718	724	1	N/A	101	646.2 - 789.7
CCV1	Continuing Calibration	8/30/2013		1410	1400	1	N/A	99	1271.7 - 1554.3

Data Package ID: *sc1308515-1*

Total Dissolved Solids

Method EPA160.1

Method Blank

Lab Name: ALS Environmental -- FC

Work Order Number: 1308515

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: TBAL

Lab ID: TD130830-1MB

Sample Matrix: WATER
% Moisture: N/A
Date Collected: N/A
Date Extracted: 30-Aug-13
Date Analyzed: 03-Sep-13
Prep Method: METHOD

Prep Batch: TD130830-1
QCBatchID: TD130830-1-1
Run ID: TD130903-1A
Cleanup: NONE
Basis: N/A
File Name: Manual Entry

Sample Aliquot: 100 ml
Final Volume: 100 ml
Result Units: MG/L
Clean DF: 1

CASNO	Target Analyte	DF	Result	RptLimit LOD/LOQ	Result Qualifier	EPA Qualifier
10-33-3	TOTAL DISSOLVED SOLIDS	1	20	20	U	

Data Package ID: *td1308515-1*

Total Dissolved Solids

Method EPA160.1

Method Blank

Lab Name: ALS Environmental -- FC

Work Order Number: 1308515

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: TBAL

Lab ID: TD130904-2MB

Sample Matrix: WATER
% Moisture: N/A
Date Collected: N/A
Date Extracted: 04-Sep-13
Date Analyzed: 05-Sep-13
Prep Method: METHOD

Prep Batch: TD130904-2
QCBatchID: TD130904-2-1
Run ID: TD130905-2A
Cleanup: NONE
Basis: N/A
File Name: Manual Entry

Sample Aliquot: 100 ml
Final Volume: 100 ml
Result Units: MG/L
Clean DF: 1

CASNO	Target Analyte	DF	Result	RptLimit LOD/LOQ	Result Qualifier	EPA Qualifier
10-33-3	TOTAL DISSOLVED SOLIDS	1	20	20	U	

Data Package ID: *td1308515-1*

Total Dissolved Solids

Method EPA160.1

Laboratory Control Sample

Lab Name: ALS Environmental -- FC

Work Order Number: 1308515

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: TBAL

Lab ID: TD130830-1LCS

Sample Matrix: WATER
% Moisture: N/A
Date Collected: N/A
Date Extracted: 08/30/2013
Date Analyzed: 09/03/2013
Prep Method: METHOD

Prep Batch: TD130830-1
QCBatchID: TD130830-1-1
Run ID: TD130903-1A
Cleanup: NONE
Basis: N/A
File Name: Manual Entry

Sample Aliquot: 100 ml
Final Volume: 100 ml
Result Units: MG/L
Clean DF: 1

CASNO	Target Analyte	Spike Added	LCS Result	Reporting Limit	Result Qualifier	LCS % Rec.	Control Limits
10-33-3	TOTAL DISSOLVED SOLIDS	400	419	20		105	85 - 115%

Data Package ID: *td1308515-1*

Total Dissolved Solids

Method EPA160.1

Laboratory Control Sample

Lab Name: ALS Environmental -- FC

Work Order Number: 1308515

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: TBAL

Lab ID: TD130904-2LCS

Sample Matrix: WATER
% Moisture: N/A
Date Collected: N/A
Date Extracted: 09/04/2013
Date Analyzed: 09/05/2013
Prep Method: METHOD

Prep Batch: TD130904-2
QCBatchID: TD130904-2-1
Run ID: TD130905-2A
Cleanup: NONE
Basis: N/A
File Name: Manual Entry

Sample Aliquot: 100 ml
Final Volume: 100 ml
Result Units: MG/L
Clean DF: 1

CASNO	Target Analyte	Spike Added	LCS Result	Reporting Limit	Result Qualifier	LCS % Rec.	Control Limits
10-33-3	TOTAL DISSOLVED SOLIDS	400	426	20		107	85 - 115%

Data Package ID: *td1308515-1*

Total Dissolved Solids

Method EPA160.1

Duplicate Sample Results

Lab Name: ALS Environmental -- FC

Work Order Number: 1308515

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: TBAL

Field ID: 752787 Earls
Lab ID: 1308515-3D

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 08/28/2013
Date Extracted: 09/04/2013
Date Analyzed: 09/05/2013

Prep Batch: TD130904-2
QCBatchID: TD130904-2-1
Run ID: TD130905-2A
Cleanup: NONE
Basis: As Received
File Name: Manual Entry

Sample Aliquot: 100 ml
Final Volume: 100 ml
Result Units: MG/L
Clean DF: 1

CASNO	Target Analyte	Sample Result	Samp Qual	Duplicate Result	Dup Qual	Reporting Limit	Dilution Factor	RPD	RPD Limit
10-33-3	TOTAL DISSOLVED SOLIDS	490		476		20	1	4	5

Data Package ID: *td1308515-1*

Prep Batch ID: TD130830-1

Start Date: 08/30/13
Start Time: 8:15
Prep Analyst: Kristin L. Ratajczak

End Date: 08/30/13
End Time: 15:25

Concentration Method: NONE
Extract Method: METHOD
Initial Volume Units: ml
Final Volume Units: ml

Batch Created By: klr
Date Created: 08/30/13
Time Created: 13:18
Validated By: mmj
Date Validated: 09/11/13
Time Validated: 12:19

Comments:

QC Batch ID: TD130830-1-1

Lab ID	QC Type	Field ID	Matrix	Date Collected	Initial Wt/Vol	Final Wt/Vol	Cleanup Method	Cleanup DF	Order Number
TD130830-1	MB	XXXXXX	WATER	XXXXXX	100	100	NONE	1	1308513
TD130830-1	LCS	XXXXXX	WATER	XXXXXX	100	100	NONE	1	1308513
1308513-12	DUP	XXXXXX	WATER	XXXXXX	25	25	NONE	1	1308513
1308488-1	SMP	XXXXXX	WATER	XXXXXX	100	100	NONE	1	1308488
1308488-2	SMP	XXXXXX	WATER	XXXXXX	100	100	NONE	1	1308488
1308488-3	SMP	XXXXXX	WATER	XXXXXX	100	100	NONE	1	1308488
1308488-4	SMP	XXXXXX	WATER	XXXXXX	100	100	NONE	1	1308488
1308492-1	SMP	XXXXXX	WATER	XXXXXX	100	100	NONE	1	1308492
1308492-2	SMP	XXXXXX	WATER	XXXXXX	50	50	NONE	1	1308492
1308493-1	SMP	XXXXXX	WATER	XXXXXX	100	100	NONE	1	1308493
1308494-1	SMP	XXXXXX	WATER	XXXXXX	5	5	NONE	1	1308494
1308495-1	SMP	XXXXXX	WATER	XXXXXX	100	100	NONE	1	1308495
1308500-1	SMP	XXXXXX	WATER	XXXXXX	100	100	NONE	1	1308500
1308513-12	SMP	XXXXXX	WATER	XXXXXX	25	25	NONE	1	1308513
1308513-13	SMP	XXXXXX	WATER	XXXXXX	25	25	NONE	1	1308513
1308513-14	SMP	XXXXXX	WATER	XXXXXX	25	25	NONE	1	1308513
1308513-15	SMP	XXXXXX	WATER	XXXXXX	50	50	NONE	1	1308513
1308514-1	SMP	XXXXXX	WATER	XXXXXX	5	5	NONE	1	1308514
1308515-1	SMP	McDonald 1	WATER	8/28/2013	50	50	NONE	1	1308515
1308515-2	SMP	McDonald 2	WATER	8/28/2013	100	100	NONE	1	1308515

QC Types

CAR	Carrier reference sample		DUP	Laboratory Duplicate
LCS	Laboratory Control Sample		LCSD	Laboratory Control Sample Duplicate
MB	Method Blank		MS	Laboratory Matrix Spike
MSD	Laboratory Matrix Spike Duplicate		REP	Sample replicate
RVS	Reporting Level Verification Standard		SMP	Field Sample
SYS	Sample Yield Spike			

Prep Batch ID: TD130904-2

Start Date: 09/04/13
Start Time: 8:15
Prep Analyst: Kristin L. Ratajczak

End Date: 09/04/13
End Time: 17:05

Concentration Method: NONE
Extract Method: METHOD
Initial Volume Units: ml
Final Volume Units: ml

Batch Created By: klr
Date Created: 09/04/13
Time Created: 10:27
Validated By: klr
Date Validated: 09/05/13
Time Validated: 16:54

Comments:

QC Batch ID: TD130904-2-1

Lab ID	QC Type	Field ID	Matrix	Date Collected	Initial Wt/Vol	Final Wt/Vol	Cleanup Method	Cleanup DF	Order Number
TD130904-2	MB	XXXXXX	WATER	XXXXXX	100	100	NONE	1	1308513
TD130904-2	LCS	XXXXXX	WATER	XXXXXX	100	100	NONE	1	1308513
1308513-117	DUP	XXXXXX	WATER	XXXXXX	10	10	NONE	1	1308513
1308515-3	DUP	752787 Earls	WATER	8/28/2013	100	100	NONE	1	1308515
1308565-2	DUP	XXXXXX	WATER	XXXXXX	100	100	NONE	1	1308565
1308513-117	SMP	XXXXXX	WATER	XXXXXX	10	10	NONE	1	1308513
1308513-123	SMP	XXXXXX	WATER	XXXXXX	100	100	NONE	1	1308513
1308513-124	SMP	XXXXXX	WATER	XXXXXX	100	100	NONE	1	1308513
1308513-125	SMP	XXXXXX	WATER	XXXXXX	100	100	NONE	1	1308513
1308513-126	SMP	XXXXXX	WATER	XXXXXX	100	100	NONE	1	1308513
1308515-3	SMP	752787 Earls	WATER	8/28/2013	100	100	NONE	1	1308515
1308542-1	SMP	XXXXXX	WATER	XXXXXX	5	5	NONE	1	1308542
1308560-2	SMP	XXXXXX	WATER	XXXXXX	100	100	NONE	1	1308560
1308565-2	SMP	XXXXXX	WATER	XXXXXX	100	100	NONE	1	1308565

QC Types

CAR	Carrier reference sample		DUP	Laboratory Duplicate
LCS	Laboratory Control Sample		LCSD	Laboratory Control Sample Duplicate
MB	Method Blank		MS	Laboratory Matrix Spike
MSD	Laboratory Matrix Spike Duplicate		REP	Sample replicate
RVS	Reporting Level Verification Standard		SMP	Field Sample
SYS	Sample Yield Spike			

Ion Chromatography

Method EPA300.0 Revision 2.1

Method Blank

Lab Name: ALS Environmental -- FC

Work Order Number: 1308515

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: TBAL

Lab ID: IC130829-1MB

Sample Matrix: WATER
% Moisture: N/A
Date Collected: N/A
Date Extracted: 29-Aug-13
Date Analyzed: 29-Aug-13

Prep Batch: IC130829-1
QCBatchID: IC130829-1-1
Run ID: IC130829-1A2
Cleanup: NONE
Basis: N/A
File Name: 30829_014.dxd

Sample Aliquot: 5 ml
Final Volume: 5 ml
Result Units: MG/L
Clean DF: 1

CASNO	Target Analyte	DF	Result	RptLimit LOD/LOQ	MDL	Result Qualifier	EPA Qualifier
16984-48-8	FLUORIDE	1	0.1	0.1	0.03	U	
16887-00-6	CHLORIDE	1	0.2	0.2	0.06	U	
14797-65-0	NITRITE AS N	1	0.1	0.1	0.03	U	
24959-67-9	BROMIDE	1	0.2	0.2	0.06	U	
14797-55-8	NITRATE AS N	1	0.2	0.2	0.06	U	
14808-79-8	SULFATE	1	1	1	0.3	U	

Data Package ID: *ic1308515-1*

Ion Chromatography

Method EPA300.0 Revision 2.1

Laboratory Control Sample

Lab Name: ALS Environmental -- FC

Work Order Number: 1308515

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: TBAL

Lab ID: IC130829-1LCS

Sample Matrix: WATER
% Moisture: N/A
Date Collected: N/A
Date Extracted: 08/29/2013
Date Analyzed: 08/29/2013
Prep Method: NONE

Prep Batch: IC130829-1
QCBatchID: IC130829-1-1
Run ID: IC130829-1A2
Cleanup: NONE
Basis: N/A
File Name: 30829_013.dxd

Sample Aliquot: 5 ml
Final Volume: 5 ml
Result Units: MG/L
Clean DF: 1

CASNO	Target Analyte	Spike Added	LCS Result	Reporting Limit	Result Qualifier	LCS % Rec.	Control Limits
16984-48-8	FLUORIDE	2	1.88	0.1		94	90 - 110%
16887-00-6	CHLORIDE	5	4.97	0.2		99	90 - 110%
14797-65-0	NITRITE AS N	2	2.06	0.1		103	90 - 110%
24959-67-9	BROMIDE	5	5.17	0.2		103	90 - 110%
14797-55-8	NITRATE AS N	5	5.05	0.2		101	90 - 110%
14808-79-8	SULFATE	20	18.9	1		94	90 - 110%

Data Package ID: *ic1308515-1*

Ion Chromatography

Method EPA300.0 Revision 2.1

Matrix Spike And Matrix Spike Duplicate

Lab Name: ALS Environmental -- FC
Work Order Number: 1308515
Client Name: Colorado Oil & Gas Conservation Commission
ClientProject ID: TBAL

Field ID: 752787 Earls
LabID: 1308515-3MS

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 28-Aug-13
Date Extracted: 29-Aug-13
Date Analyzed: 29-Aug-13
Prep Method: NONE

Prep Batch: IC130829-1
QCBatchID: IC130829-1-1
Run ID: IC130829-1A2
Cleanup: NONE
Basis: As Received

Sample Aliquot: 5 ml
Final Volume: 5 ml
Result Units: MG/L
File Name: 30829_019.dxd

CASNO	Target Analyte	Sample Result	Samp Qual	MS Result	MS Qual	Reporting Limit	Spike Added	MS % Rec.	Control Limits
16984-48-8	FLUORIDE	0.57		2.68		0.1	2	106	85 - 115%
16887-00-6	CHLORIDE	24		29.4		0.2	5	110	85 - 115%
14797-65-0	NITRITE AS N	0.1	U	1.87		0.1	2	93	85 - 115%
24959-67-9	BROMIDE	0.15	J	5.38		0.2	5	105	85 - 115%
14797-55-8	NITRATE AS N	5.7		11.1		0.2	5	107	85 - 115%
14808-79-8	SULFATE	62		81.8		1	20	98	85 - 115%

Field ID: 752787 Earls
LabID: 1308515-3MSD

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 28-Aug-13
Date Extracted: 29-Aug-13
Date Analyzed: 29-Aug-13
Prep Method: NONE

Prep Batch: IC130829-1
QCBatchID: IC130829-1-1
Run ID: IC130829-1A2
Cleanup: NONE
Basis: As Received

Sample Aliquot: 5 ml
Final Volume: 5 ml
Result Units: MG/L
File Name: 30829_020.dxd

CASNO	Target Analyte	MSD Result	MSD Qual	Spike Added	MSD % Rec.	Reporting Limit	RPD Limit	RPD
16984-48-8	FLUORIDE	2.71		2	107	0.1	15	1
16887-00-6	CHLORIDE	29.5		5	113	0.2	15	0
14797-65-0	NITRITE AS N	1.88		2	94	0.1	15	1
24959-67-9	BROMIDE	5.4		5	105	0.2	15	0
14797-55-8	NITRATE AS N	11.2		5	109	0.2	15	1
14808-79-8	SULFATE	82		20	99	1	15	0

Data Package ID: *ic1308515-1*

Prep Batch ID: IC130829-1

Start Date: 08/29/13
Start Time: 11:22
Prep Analyst: Alex J. Devonald

End Date: 08/29/13
End Time: 13:00

Concentration Method: NONE
Extract Method: NONE
Initial Volume Units: ml
Final Volume Units: ml

Batch Created By: ajd
Date Created: 08/29/13
Time Created: 11:26
Validated By: AJD
Date Validated: 08/29/13
Time Validated: 17:03

Comments:

QC Batch ID: IC130829-1-1

Lab ID	QC Type	Field ID	Matrix	Date Collected	Initial Wt/Vol	Final Wt/Vol	Cleanup Method	Cleanup DF	Order Number
IC130829-1	RVS	XXXXXX	WATER	XXXXXX	5	5	NONE	1	1308295
IC130829-1	MB	XXXXXX	WATER	XXXXXX	5	5	NONE	1	1308295
IC130829-1	LCS	XXXXXX	WATER	XXXXXX	5	5	NONE	1	1308295
1308295-15	MS	XXXXXX	WATER	XXXXXX	5	5	NONE	1	1308295
1308381-2	MS	XXXXXX	WATER	XXXXXX	5	5	NONE	1	1308381
1308391-4	MS	XXXXXX	WATER	XXXXXX	5	5	NONE	1	1308391
1308515-3	MS	752787 Earls	WATER	8/28/2013	5	5	NONE	1	1308515
1308295-15	MSD	XXXXXX	WATER	XXXXXX	5	5	NONE	1	1308295
1308381-2	MSD	XXXXXX	WATER	XXXXXX	5	5	NONE	1	1308381
1308391-4	MSD	XXXXXX	WATER	XXXXXX	5	5	NONE	1	1308391
1308515-3	MSD	752787 Earls	WATER	8/28/2013	5	5	NONE	1	1308515
1308295-15	SMP	XXXXXX	WATER	XXXXXX	5	5	NONE	1	1308295
1308295-21	SMP	XXXXXX	WATER	XXXXXX	5	5	NONE	1	1308295
1308295-28	SMP	XXXXXX	WATER	XXXXXX	5	5	NONE	1	1308295
1308381-2	SMP	XXXXXX	WATER	XXXXXX	5	5	NONE	1	1308381
1308381-3	SMP	XXXXXX	WATER	XXXXXX	5	5	NONE	1	1308381
1308381-4	SMP	XXXXXX	WATER	XXXXXX	5	5	NONE	1	1308381
1308391-4	SMP	XXXXXX	WATER	XXXXXX	5	5	NONE	1	1308391
1308429-2	SMP	XXXXXX	WATER	XXXXXX	5	5	NONE	1	1308429
1308429-3	SMP	XXXXXX	WATER	XXXXXX	5	5	NONE	1	1308429
1308445-1	SMP	XXXXXX	WATER	XXXXXX	5	5	NONE	1	1308445
1308445-2	SMP	XXXXXX	WATER	XXXXXX	5	5	NONE	1	1308445
1308515-1	SMP	McDonald 1	WATER	8/28/2013	5	5	NONE	1	1308515
1308515-2	SMP	McDonald 2	WATER	8/28/2013	5	5	NONE	1	1308515
1308515-3	SMP	752787 Earls	WATER	8/28/2013	5	5	NONE	1	1308515

Ion Chromatography

Method EPA300.0

Calibration Verifications

Lab Name: ALS Environmental -- FC

Work Order Number: 1308515

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: TBAL

Lab ID: ICV

QC Type: Initial Calibration

File Name: 0714b_010.dxd

Run ID: IC130829-1A2

Date Analyzed: 08/14/2013

Time Analyzed: 21:40

Result Units: MG/L

CASNO	Target Analyte	Spike Added	Result	Reporting Limit	Result Qualifier	% Rec.	Control Limits
16984-48-8	FLUORIDE	2.5	2.36	0.1		94	90 - 110%
16887-00-6	CHLORIDE	5	4.70	0.2		94	90 - 110%
14797-65-0	NITRITE AS N	4	4.04	0.1		101	90 - 110%
24959-67-9	BROMIDE	5	4.69	0.2		94	90 - 110%
14797-55-8	NITRATE AS N	5	4.62	0.2		92	90 - 110%
14808-79-8	SULFATE	25	23.4	1		94	90 - 110%

Data Package ID: *ic1308515-1*

Ion Chromatography

Method EPA300.0

Calibration Verifications

Lab Name: ALS Environmental -- FC

Work Order Number: 1308515

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: TBAL

Lab ID: CCV1

QC Type: Continuing Calibration

File Name: 30829_011.dxd

Run ID: IC130829-1A2

Date Analyzed: 08/29/2013

Time Analyzed: 11:10

Result Units: MG/L

CASNO	Target Analyte	Spike Added	Result	Reporting Limit	Result Qualifier	% Rec.	Control Limits
16984-48-8	FLUORIDE	5	4.81	0.1		96	90 - 110%
16887-00-6	CHLORIDE	10	9.97	0.2		100	90 - 110%
14797-65-0	NITRITE AS N	5	5.02	0.1		100	90 - 110%
24959-67-9	BROMIDE	10	9.85	0.2		99	90 - 110%
14797-55-8	NITRATE AS N	10	9.92	0.2		99	90 - 110%
14808-79-8	SULFATE	50	50.5	1		101	90 - 110%

Data Package ID: *ic1308515-1*

Ion Chromatography

Method EPA300.0

Calibration Verifications

Lab Name: ALS Environmental -- FC

Work Order Number: 1308515

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: TBAL

Lab ID: CCV2

QC Type: Continuing Calibration

File Name: 30829_023.dxd

Run ID: IC130829-1A2

Date Analyzed: 08/29/2013

Time Analyzed: 13:59

Result Units: MG/L

CASNO	Target Analyte	Spike Added	Result	Reporting Limit	Result Qualifier	% Rec.	Control Limits
16984-48-8	FLUORIDE	5	4.87	0.1		97	90 - 110%
16887-00-6	CHLORIDE	10	9.93	0.2		99	90 - 110%
14797-65-0	NITRITE AS N	5	5.00	0.1		100	90 - 110%
24959-67-9	BROMIDE	10	9.86	0.2		99	90 - 110%
14797-55-8	NITRATE AS N	10	9.88	0.2		99	90 - 110%
14808-79-8	SULFATE	50	50.5	1		101	90 - 110%

Data Package ID: *ic1308515-1*

Ion Chromatography

Method EPA300.0

Calibration Verifications

Lab Name: ALS Environmental -- FC

Work Order Number: 1308515

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: TBAL

Lab ID: CCV3

QC Type: Continuing Calibration

File Name: 30829_035.dxd

Run ID: IC130829-1A2

Date Analyzed: 08/29/2013

Time Analyzed: 16:48

Result Units: MG/L

CASNO	Target Analyte	Spike Added	Result	Reporting Limit	Result Qualifier	% Rec.	Control Limits
16984-48-8	FLUORIDE	5	4.87	0.1		98	90 - 110%
16887-00-6	CHLORIDE	10	9.61	0.2		96	90 - 110%
14797-65-0	NITRITE AS N	5	4.85	0.1		97	90 - 110%
24959-67-9	BROMIDE	10	9.51	0.2		95	90 - 110%
14797-55-8	NITRATE AS N	10	9.73	0.2		97	90 - 110%
14808-79-8	SULFATE	50	49.7	1		99	90 - 110%

Data Package ID: *ic1308515-1*

Ion Chromatography

Method EPA300.0

Calibration Blanks

Lab Name: **ALS Environmental -- FC**

Work Order Number: 1308515

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: TBAL

Lab ID: ICB

QC Type: Initial Calibration

Run ID: IC130829-1A2

Date Analyzed: 08/14/2013

Time Analyzed: 9:26:28 PM

Result Units: MG/L

CASNO	Target Analyte	Result	Reporting Limit	Result Qualifier
16984-48-8	FLUORIDE	0.1	0.1	U
16887-00-6	CHLORIDE	0.2	0.2	U
14797-65-0	NITRITE AS N	0.1	0.1	U
24959-67-9	BROMIDE	0.2	0.2	U
14797-55-8	NITRATE AS N	0.2	0.2	U
14808-79-8	SULFATE	1	1	U

Data Package ID: *ic1308515-1*

Ion Chromatography

Method EPA300.0

Calibration Blanks

Lab Name: **ALS Environmental -- FC**

Work Order Number: 1308515

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: TBAL

Lab ID: CCB1

QC Type: Continuing Calibration

Run ID: IC130829-1A2

Date Analyzed: 08/29/2013

Time Analyzed: 11:24:55 AM

Result Units: MG/L

CASNO	Target Analyte	Result	Reporting Limit	Result Qualifier
16984-48-8	FLUORIDE	0.1	0.1	U
16887-00-6	CHLORIDE	0.2	0.2	U
14797-65-0	NITRITE AS N	0.1	0.1	U
24959-67-9	BROMIDE	0.2	0.2	U
14797-55-8	NITRATE AS N	0.2	0.2	U
14808-79-8	SULFATE	1	1	U

Data Package ID: *ic1308515-1*

Ion Chromatography

Method EPA300.0

Calibration Blanks

Lab Name: **ALS Environmental -- FC**

Work Order Number: 1308515

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: TBAL

Lab ID: CCB2

QC Type: Continuing Calibration

Run ID: IC130829-1A2

Date Analyzed: 08/29/2013

Time Analyzed: 2:13:39 PM

Result Units: MG/L

CASNO	Target Analyte	Result	Reporting Limit	Result Qualifier
16984-48-8	FLUORIDE	0.1	0.1	U
16887-00-6	CHLORIDE	0.2	0.2	U
14797-65-0	NITRITE AS N	0.1	0.1	U
24959-67-9	BROMIDE	0.2	0.2	U
14797-55-8	NITRATE AS N	0.111	0.2	J
14808-79-8	SULFATE	1	1	U

Data Package ID: *ic1308515-1*

Ion Chromatography

Method EPA300.0

Calibration Blanks

Lab Name: **ALS Environmental -- FC**

Work Order Number: 1308515

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: TBAL

Lab ID: CCB3

QC Type: Continuing Calibration

Run ID: IC130829-1A2

Date Analyzed: 08/29/2013

Time Analyzed: 5:02:20 PM

Result Units: MG/L

CASNO	Target Analyte	Result	Reporting Limit	Result Qualifier
16984-48-8	FLUORIDE	0.1	0.1	U
16887-00-6	CHLORIDE	0.2	0.2	U
14797-65-0	NITRITE AS N	0.1	0.1	U
24959-67-9	BROMIDE	0.2	0.2	U
14797-55-8	NITRATE AS N	0.2	0.2	U
14808-79-8	SULFATE	1	1	U

Data Package ID: *ic1308515-1*

Raw Data

Alkalinity Raw Data Worksheet

Anal Run ID **AK130906-1A**

Anal Start Date **9/6/2013**

Standardization Ref ID **AlkalinityCAL130906-1**

Standardization Of Alkalinity

Rep Num	THAM Conc	Aliq Titrated (mL)	vol to pH 4.5(mL)	HCl Conc(N)	Conc Units
1	0.2	1	10.27	0.0194742	N
2	0.2	1	10.39	0.0192493	N
3	0.2	1	10.32	0.0193799	N

Avg HCl Conc
0.01936777

Num	Don't Use	ReRun Num	Lab ID	QC Type	Anal Dil	Aliq Titrated (mL)	vol to pH 8.3(mL)	vol to pH 4.5(mL)	total vol(mL)	HCO3 (mg/L as CaCO3)	CO3 (mg/L as CaCO3)	OH (mg/L as CaCO3)	Total Alk (mg/L as CaCO3)	Expected	%Rec	vol to LL pH(mL)
1	☐	0	AK130906-1	MB	1	100	0	0.42	0.42	4.067232	0	0	4.067232			NA
2	☐	0	AK130906-1	LCS	1	100	4.82	5.27	10.09	4.357747	93.35267	0	97.71042			NA
3	☐	0	1308515-1	SMP	1	25	0	14.34	14.34	555.4677	0	0	555.4677			NA
4	☐	0	1308515-2	SMP	1	25	0	5.35	5.35	207.2352	0	0	207.2352			NA
5	☐	0	1308515-3	SMP	1	25	0	8.32	8.32	322.2797	0	0	322.2797			NA
6	☐	0	1308515-3	DUP	1	25	0	8.24	8.24	319.1809	0	0	319.1809			NA
7	☐	0	1308545-1	SMP	1	25	0	4.38	4.38	169.6617	0	0	169.6617			NA
8	☐	0	1308545-3	SMP	1	25	0.28	3.94	4.22	141.7721	21.69191	0	163.464			NA
9	☐	0	1308559-1	SMP	1	25	0	5.15	5.15	199.4881	0	0	199.4881			NA
10	☐	0	1308559-2	SMP	1	25	0	4.68	4.68	181.2824	0	0	181.2824			NA
11	☐	0	1308560-2	SMP	1	25	0	9.04	9.04	350.1693	0	0	350.1693			NA
12	☐	0	1308561-1	SMP	1	25	0	9.06	9.06	350.9441	0	0	350.9441			NA
13	☐	0	1308563-2	SMP	1	100	0	0.23	0.23	0.2905166	0	0	0.2905166			0.2
14	☐	0	1308563-3	SMP	1	25	0	4.82	4.82	186.7053	0	0	186.7053			NA
15	☐	0	1308563-4	SMP	1	25	0	3.31	3.31	128.2147	0	0	128.2147			NA
16	☐	0	1308563-5	SMP	1	25	0	5.45	5.45	211.1087	0	0	211.1087			NA
17	☐	0	1309040-2	SMP	1	25	0	3.82	3.82	147.9698	0	0	147.9698			NA
18	☐	0	1309040-3	SMP	1	25	0	6.22	6.22	240.9351	0	0	240.9351			NA
19	☐	0	1309041-1	SMP	1	25	0	5.64	5.64	218.4685	0	0	218.4685			NA
20	☐	0	1309052-2	SMP	1	25	0	4.2	4.2	162.6893	0	0	162.6893			NA
21	☐	0	1309052-2	DUP	1	25	0	4.26	4.26	165.0134	0	0	165.0134			NA
22	☐	0	1309052-3	SMP	1	25	0	4.05	4.05	156.879	0	0	156.879			NA
23	☐	0	AK130906-2	MB	1	100	0	0.31	0.31	3.002005	0	0	3.002005			NA
24	☐	0	AK130906-2	LCS	1	100	4.92	5.08	10	1.54942	95.28944	0	96.83886			NA
25	☐	0	1308462-1	SMP	1	25	0	4.53	4.53	175.472	0	0	175.472			NA
26	☐	0	1308468-11	SMP	1	25	0	2.64	2.64	102.2618	0	0	102.2618			NA
27	☐	0	1308468-11	DUP	1	25	0	2.74	2.74	106.1354	0	0	106.1354			NA
28	☐	0	1308509-2	SMP	1	25	0.55	8.74	9.29	317.2441	42.6091	0	359.8532			NA
29	☐	0	1308530-2	SMP	1	25	0	5.68	5.68	220.0179	0	0	220.0179			NA
30	☐	0	1308530-2	DUP	1	25	0	5.72	5.72	221.5673	0	0	221.5673			NA
31	☐	0	1308543-2	SMP	1	25	0	3.64	3.64	140.9974	0	0	140.9974			NA
32	☐	0	1308543-3	SMP	1	25	0	2.91	2.91	112.7204	0	0	112.7204			NA
33	☐	0	1308543-5	SMP	1	25	0	9.31	9.31	360.628	0	0	360.628			NA
34	☐	0	1308543-6	SMP	1	25	0	10.34	10.34	400.5255	0	0	400.5255			NA
35	☐	0	1308546-1	SMP	1	25	0	4.22	4.22	163.464	0	0	163.464			NA
36	☐	0	1308564-2	SMP	1	25	0	8.03	8.03	311.0464	0	0	311.0464			NA
37	☐	0	1308564-7	SMP	1	25	0	5.87	5.87	227.3777	0	0	227.3777			NA

Anal Run ID **AK130906-1A**

Anal Start Date **9/6/2013**

Num	Don't Use	ReRun Num	Lab ID	QC Type	Anal Dil	Aliq Titrated (mL)	vol to pH 8.3(mL)	vol to pH 4.5(mL)	total vol(mL)	HCO3 (mg/L as CaCO3)	CO3 (mg/L as CaCO3)	OH (mg/L as CaCO3)	Total Alk (mg/L as CaCO3)	Expected	%Rec	vol to LL pH(mL)
38	☐	0	1308564-12	SMP	1	25	0	9.51	9.51	368.3751	0	0	368.3751			NA
39	☐	0	1308564-17	SMP	1	25	0	3.6	3.6	139.448	0	0	139.448			NA
40	☐	0	1308564-22	SMP	1	25	0	6.63	6.63	256.8167	0	0	256.8167			NA
41	☐	0	1308564-27	SMP	1	25	0	6.52	6.52	252.5558	0	0	252.5558			NA
42	☐	0	1308558-6	SMP	1	25	0	0.25	0.25	2.711488	0	0	2.711488			0.18
43	☐	0	WC130906-1	MB	1	~~100~~ 10	0	0.44	0.44	4.26091	0	0	4.26091			NA
44	☐	0	WC130906-1	LCS	1	~~100~~ 10	4.22	5.17	9.389999	9.199691	81.73199	0	90.93169			NA
45	☐	0	1308431-2	SMP	1	~~100~~ 12	0	0.25	0.25	0.2905166	0	0	0.2905166			0.22
46	☐	0	1308431-3	SMP	1	~~100~~ 12	0	1.12	1.12	10.84595	0	0	10.84595			NA
47	☐	0	1308558-2	SMP	1	~~100~~ 12	0	2.44	2.44	23.62868	0	0	23.62868			NA
48	☐	0	1308558-3	SMP	1	~~100~~ 12	0	1.02	1.02	9.877564	0	0	9.877564			NA
49	☐	0	1308558-3	DUP	1	~~100~~ 12	0	1.1	1.1	10.65228	0	0	10.65228			NA
50	☐	0	1308558-4	SMP	1	~~100~~ 12	0	0.4	0.4	0.3873557	0	0	0.3873557			0.36
51	☐	0	1308558-5	SMP	1	~~100~~ 12	0	0.4	0.4	2.033616	0	0	2.033616			0.19
52	☐	0	1308558-7	SMP	1	~~100~~ 12	0	0.37	0.37	1.936777	0	0	1.936777			0.17
53	☐	0	1308558-8	SMP	1	~~100~~ 12	0	3.79	3.79	36.70193	0	0	36.70193			NA
54	☐	0	1308577-1	SMP	1	25	0	4.41	4.41	170.8237	0	0	170.8237			NA
55	☐	0	1308577-2	SMP	1	25	0	1.96	1.96	75.92167	0	0	75.92167			NA

mg/L 9/10/13

Comments: Prepped and analyzed on 09/06/13 from 0930-1645. KLR/AJD.

Standards, Batch QC, and Matrix Spike Information

ID	Parent ID	Parent Conc	Parent Vol.	Final Vol.
ICV	ST101202-3	10000	1	100
CCV	ST101202-3	10000	1	100

Reagent List:

0.020 N HCl Titrant	**RG130724-2**
Phenolphthalein Indicator	**RG130531-5**
Bromocresol Green Indicator	**RG130820-1**
0.20 N Std. THAM	**ST121213-1**
0.20 N NaCO3 (ICV, LCS, CCV's - 1.0 mL)	**ST121213-2**

pH Calculations and Quality Control Results

Prep & Analysis Date: 08/30/2013
Prep & Analysis Time: 08:00 - 10:50
Analyst: AJD

Reagent List:		
4.01:	10.01:	2.00:
ST130712-2	**ST130816-1**	**ST130725-1**
7.00 (CCV):	7.00 (ICV):	12.45:
ST120921-2	**ST130708-1**	**ST130715-1**

ID	Temp. (°C)	Method	sample vol (g)	sample vol (mL)	pH Value	QC Accdeptance Range (pH units)
pH 4.01	25.4	NA	NA	NA	4.01	
pH 7.00	25.4	NA	NA	NA	7.00	
pH 10.01	25.4	NA	NA	NA	10.01	
ICV - pH 7.00	25.4	NA	NA	NA	7.00	+/- 0.05
1308488-1	25.4	EPA150.1	NA	20.0	7.50	
1308488-2	25.4	EPA150.1	NA	20.0	7.70	
1308488-3	25.4	EPA150.1	NA	20.0	8.74	
1308488-4	25.4	EPA150.1	NA	20.0	7.64	
1308493-1	25.4	9040PH	NA	20.0	7.90	
1308514-1	25.4	EPA150.1	NA	20.0	7.18	
1308515-1	25.4	EPA150.1	NA	20.0	7.57	
1308515-2	25.4	EPA150.1	NA	20.0	7.37	
1308515-3	25.4	EPA150.1	NA	20.0	7.73	
1308515-3DUP	25.4	EPA150.1	NA	20.0	7.73	
CCV- pH 7.00	25.4	NA	NA	NA	7.03	+/- 0.10
1308479-1	25.4	9045PH	20	20.0	8.17	
1308479-1DUP	25.4	9045PH	20	20.0	8.38	
1308479-2	25.4	9045PH	20	20.0	7.68	
CCV- pH 7.00	24.2	NA	NA	20.0	7.02	+/- 0.10

DUPLICATE SUMMARY (Aq)

ID	native pH Value	duplic pH Value	difference of native - dup	accept. limit
1308515-3	7.73	7.73	0.00	0.2 pH units

DUPLICATE SUMMARY (Soil)

ID	native pH Value	duplic pH Value	difference of native - dup	accept. limit
1308479-1	8.17	8.38	0.21	0.5 pH units

pH INFORMATION:
SOP 1126 rev.17 / EPA Method 150.1, 9040C, 9045D, and SM4500-H+ B
Instrument : Fisher Scientific pH / mV meter model 50 (SN C0000643)
Electrode : Orion - Ross Sure-Flow Electrode Model 81-72BN

Specific Conductivity Calculations & Quality Control Results

Prep & Analysis Date: 08/30/2013
Prep & Analysis Time: 08:00 - 11:30
Analyst: AJD

ID	sample vol (mL)	Temp. °C	Conductivity Reading (umhos/cm)	% Recovery	recovery limit
Calibration Standard (*)	NA	25.4	1413		
ICV-2nd Source (**)	NA	25.4	724	101	646.2 - 789.8
1308488-1	45	25.4	1270		
1308488-2	45	25.4	1165		
1308488-3	45	25.4	487		
1308488-4	45	25.4	631		
1308493-1	45	25.4	900		
1308496-1	45	25.4	1559		
1308515-1	45	25.4	1448		
1308515-2	45	25.4	687		
1308515-3	45	25.4	813		
1308515-3DUP	45	25.4	813		
CCV-1 (*)	NA	25.4	1399	99	1271.7 - 1554.3

DUPLICATE SUMMARY

ID	native Spec. Cond. Value	duplic Spec. Cond. Value	RPD %	RPD accept. limit
1308515-3	813.0000	813.0000	0	0-10%

Specific Conductivity - EPA Method 120.1/9050A/SM2510B - SOP 1128

Instrument :	Fisher Scientific Conductivity/pH/mV meter model accumet 50 (SN C0000643) Electrode : YSI Incorporated. Model 3440 (Cell K = 10/cm) OR VWR Digital Conductivity Meter w/ electrode NIST (SN A22036)
Reagent List:	0.010 M KCl Solution [1413umhos/cm] (*): **ST130712-1** 0.005 M KCl Solu+C21tion [718umhos/cm] (**): **ST130607-4**

TDS Raw Data Worksheet

Anal Run ID **TD130903-1A**

Anal Start Date **9/3/2013**

Num	Don't Use	ReRun Num	Lab ID	QC Type	Samp Vol (ml)	Empty Beaker (g)	A - Beaker + Residue gross (g)	A - Net mass (mg)	B - Beaker + Residue gross (g)	B - Net mass (mg)	Constant Wt (+/- 0.5mg)	Constant Wt (+/- 4%)	calculated conc (mg/L)	DL (mg/L)
1	☐	0	TD130830-1	MB	100	77.9969	77.9984	1.5	77.9987	1.8	0.3	NA	18	20
2	☐	0	TD130830-1	LCS	100	73.7313	73.7733	42	73.7732	41.9	0.1	0.24%	419	20
3	☐	0	1308488-1	SMP	100	73.3442	73.4256	81.4	73.4247	80.5	0.9	1.11%	805	20
4	☐	0	1308488-2	SMP	100	81.639	81.7101	71.1	81.7096	70.6	0.5	0.71%	706	20
5	☐	0	1308488-3	SMP	100	80.8651	80.896	30.9	80.8953	30.2	0.7	2.29%	302	20
6	☐	0	1308488-4	SMP	100	83.3706	83.4106	40	83.4093	38.7	1.3	3.30%	387	20
7	☐	0	1308492-1	SMP	100	71.8283	71.8863	58	71.8844	56.1	1.9	3.33%	561	20
8	☐	0	1308492-2	SMP	50	80.8434	80.9479	104.5	80.9446	101.2	3.3	3.21%	2024	40
9	☐	0	1308493-1	SMP	100	74.6971	74.7599	62.8	74.7603	63.2	0.4	0.63%	632	20
10	☐	0	1308494-1	SMP	5	77.4538	77.5454	91.6	77.5419	88.1	3.5	3.90%	17620	400
11	☐	0	1308495-1	SMP	100	78.634	78.7321	98.1	78.7296	95.6	2.5	2.58%	956	20
12	☐	0	1308500-1	SMP	100	83.0635	83.1238	60.3	83.1233	59.8	0.5	0.83%	598	20
13	☐	0	1308514-1	SMP	5	73.0567	73.151	94.3	73.1486	91.9	2.4	2.58%	18380	400
14	☐	0	1308515-1	SMP	50	72.2932	72.3408	47.6	72.3405	47.3	0.3	0.63%	946	40
15	☐	0	1308515-2	SMP	100	81.1469	81.1929	46	81.1925	45.6	0.4	0.87%	456	20
16	☐	0	1308512-2	SMP	100	70.7936	70.8168	23.2	70.8163	22.7	0.5	2.18%	227	20
17	☐	0	1308512-2	DUP	100	71.9265	71.9487	22.2	71.948	21.5	0.7	3.20%	215	20
18	☐	0	1308512-5	SMP	100	66.6587	66.6781	19.4	66.6774	18.7	0.7	3.67%	187	20
19	☐	0	1308513-12	SMP	25	66.218	66.3562	138.2	66.3519	133.9	4.3	3.16%	5356	80
20	☐	0	1308513-12	DUP	25	65.4999	65.6446	144.7	65.6404	140.5	4.2	2.95%	5620	80
21	☐	0	1308513-13	SMP	25	71.8871	71.9817	94.6	71.9791	92	2.6	2.79%	3680	80
22	☐	0	1308513-14	SMP	25	78.1894	78.2609	71.5	78.2591	69.7	1.8	2.55%	2788	80
23	☐	0	1308513-15	SMP	50	81.8922	81.9803	88.1	81.9773	85.1	3	3.46%	1702	40

Comments: Analyzed on 9/3/2013 from 10:00 to 16:45. AJD

Standards, Batch QC, and Matrix Spike Information

ID	Parent ID	Parent Conc	Parent Vol.	Final Vol.
LCS	ST130318-1	40000	1	100

Reagent List:

TDS Spike Solution: 40.0 mg NaCl/mL **ST130318-1**

Shaded values used to to determine the calculated concentration

Schedule File: C:\PeakNet\schedule\130829IC1.sch

Line	Sample	Sample Type	Method	Data File	Comment
1	5X STD	Calibration	130814ic1.met	c:\peaknet\data\130814bic1\130714b_002.dxd	
2	10X STD	Calibration	130814ic1.met	c:\peaknet\data\130814bic1\130714b_003.dxd	
3	25X STD	Calibration	130814ic1.met	c:\peaknet\data\130814bic1\130714b_004.dxd	
4	100X STD	Calibration	130814ic1.met	c:\peaknet\data\130814bic1\130714b_005.dxd	
5	500X STD	Calibration	130814ic1.met	c:\peaknet\data\130814bic1\130714b_006.dxd	
6	1000X STD	Calibration	130814ic1.met	c:\peaknet\data\130814bic1\130714b_007.dxd	
7	0 STD	Calibration	130814ic1.met	c:\peaknet\data\130814bic1\130714b_008.dxd	
8	ICB	Sample	130814ic1.met	c:\peaknet\data\130814bic1\130714b_009.dxd	
9	ICV	Sample	130814ic1.met	c:\peaknet\data\130814bic1\130714b_010.dxd	
10	Blank	Sample	130814ic1a.met	c:\peaknet\data\130829ic1\130829_010.dxd	Blank
11	CCV	Sample	130814ic1a.met	c:\peaknet\data\130829ic1\130829_011.dxd	CCV All Pass
12	CCB	Sample	130814ic1a.met	c:\peaknet\data\130829ic1\130829_012.dxd	CCB
13	IC130829-1LCS	Sample	130814ic1a.met	c:\peaknet\data\130829ic1\130829_013.dxd	water All Targets Pass
14	IC130829-1MB	Sample	130814ic1a.met	c:\peaknet\data\130829ic1\130829_014.dxd	water
15	IC130829-1RVS	Sample	130814ic1a.met	c:\peaknet\data\130829ic1\130829_015.dxd	water
16	1308515-1	Sample	130814ic1a.met	c:\peaknet\data\130829ic1\130829_016.dxd	Br,Cl,F,NO2,NO3,SO4
17	1308515-2	Sample	130814ic1a.met	c:\peaknet\data\130829ic1\130829_017.dxd	Br,Cl,F,NO2,NO3,SO4
18	1308515-3	Sample	130814ic1a.met	c:\peaknet\data\130829ic1\130829_018.dxd	Br,Cl,F,NO2,NO3,SO4
19	1308515-3MS	Sample	130814ic1a.met	c:\peaknet\data\130829ic1\130829_019.dxd	Br,Cl,F,NO2,NO3,SO4
20	1308515-3MSD	Sample	130814ic1a.met	c:\peaknet\data\130829ic1\130829_020.dxd	Br,Cl,F,NO2,NO3,SO4
21	1308515-1 20x	Sample	130814ic1a.met	c:\peaknet\data\130829ic1\130829_021.dxd	Br,Cl,F,NO2,NO3,SO4
22	1308515-2 5x	Sample	130814ic1a.met	c:\peaknet\data\130829ic1\130829_022.dxd	Br,Cl,F,NO2,NO3,SO4
23	CCV	Sample	130814ic1a.met	c:\peaknet\data\130829ic1\130829_023.dxd	CCV All Pass
24	CCB	Sample	130814ic1a.met	c:\peaknet\data\130829ic1\130829_024.dxd	CCB
25	1308515-3 10x	Sample	130814ic1a.met	c:\peaknet\data\130829ic1\130829_025.dxd	Br,Cl,F,NO2,NO3,SO4
26	~~1308295-15 2x~~	Sample	130814ic1a.met	c:\peaknet\data\130829ic1\130829_026.dxd	~~Cl,SO4~~
27	~~1308295-15MS~~ 2x	Sample	130814ic1a.met	c:\peaknet\data\130829ic1\130829_027.dxd	~~Cl,SO4~~
28	~~1308295-15MSD~~ 2x	Sample	130814ic1a.met	c:\peaknet\data\130829ic1\130829_028.dxd	~~Cl,SO4~~
29	~~1308295-21 20x~~	Sample	130814ic1a.met	c:\peaknet\data\130829ic1\130829_029.dxd	~~Cl,SO4~~
30	~~1308295-28~~ 20x	Sample	130814ic1a.met	c:\peaknet\data\130829ic1\130829_030.dxd	~~Cl,SO4~~
31	Blank	Sample	130814ic1a.met	c:\peaknet\data\130829ic1\130829_031.dxd	
32	BLank	Sample	130814ic1a.met	c:\peaknet\data\130829ic1\130829_032.dxd	
33	1308381-2MS	Sample	130814ic1a.met	c:\peaknet\data\130829ic1\130829_033.dxd	F,SO4
34	1308381-2MSD	Sample	130814ic1a.met	c:\peaknet\data\130829ic1\130829_034.dxd	F,SO4
35	CCV	Sample	130814ic1a.met	c:\peaknet\data\130829ic1\130829_035.dxd	CCV All Pass
36	CCB	Sample	130814ic1a.met	c:\peaknet\data\130829ic1\130829_036.dxd	CCB
37	1308381-4	Sample	130814ic1a.met	c:\peaknet\data\130829ic1\130829_037.dxd	F,SO4
38	1308391-4 2x	Sample	130814ic1a.met	c:\peaknet\data\130829ic1\130829_038.dxd	Cl,SO4
39	1308391-4MS 2x	Sample	130814ic1a.met	c:\peaknet\data\130829ic1\130829_039.dxd	Cl,SO4
40	1308391-4MSD 2x	Sample	130814ic1a.met	c:\peaknet\data\130829ic1\130829_040.dxd	Cl,SO4
41	1308401-1 100x	Sample	130814ic1a.met	c:\peaknet\data\130829ic1\130829_041.dxd	SO4
42	1308401-2 50x	Sample	130814ic1a.met	c:\peaknet\data\130829ic1\130829_042.dxd	SO4
43	1308401-3 100x	Sample	130814ic1a.met	c:\peaknet\data\130829ic1\130829_043.dxd	SO4
44	1308401-4 50x	Sample	130814ic1a.met	c:\peaknet\data\130829ic1\130829_044.dxd	SO4
45	1308429-2	Sample	130814ic1a.met	c:\peaknet\data\130829ic1\130829_045.dxd	F,SO4
46	Blank	Sample	130814ic1a.met	c:\peaknet\data\130829ic1\130829_046.dxd	
47	CCV	Sample	130814ic1a.met	c:\peaknet\data\130829ic1\130829_047.dxd	CCV All Pass
48	CCB	Sample	130814ic1a.met	c:\peaknet\data\130829ic1\130829_048.dxd	CCB
49	1308429-3	Sample	130814ic1a.met	c:\peaknet\data\130829ic1\130829_049.dxd	F,SO4
50	1308445-1 20x	Sample	130814ic1a.met	c:\peaknet\data\130829ic1\130829_050.dxd	Cl,SO4
51	1308445-2 25x	Sample	130814ic1a.met	c:\peaknet\data\130829ic1\130829_051.dxd	Cl,SO4
52	Blank	Sample	130814ic1a.met	c:\peaknet\data\130829ic1\130829_052.dxd	
53	IC130829-2LCS	Sample	130814ic1a.met	c:\peaknet\data\130829ic1\130829_053.dxd	water - OPhos fails @ 46%
54	IC130829-2MB	Sample	130814ic1a.met	c:\peaknet\data\130829ic1\130829_054.dxd	water
55	IC130829-2RVS	Sample	130814ic1a.met	c:\peaknet\data\130829ic1\130829_055.dxd	water
56	1308506-1 20x	Sample	130814ic1a.met	c:\peaknet\data\130829ic1\130829_056.dxd	OPhos
57	1308506-1MS 20x	Sample	130814ic1a.met	c:\peaknet\data\130829ic1\130829_057.dxd	OPhos
58	Blank	Sample	130814ic1a.met	c:\peaknet\data\130829ic1\130829_058.dxd	
59	CCV	Sample	130814ic1a.met	c:\peaknet\data\130829ic1\130829_059.dxd	CCV - OPhos fail @ 87%
60	CCB	Sample	130814ic1a.met	c:\peaknet\data\130829ic1\130829_060.dxd	CCB
61	1308506-1MSD 20x	Sample	130814ic1a.met	c:\peaknet\data\130829ic1\130829_061.dxd	OPhos
62	1308506-2 500x	Sample	130814ic1a.met	c:\peaknet\data\130829ic1\130829_062.dxd	OPhos
63	1308506-3 20x	Sample	130814ic1a.met	c:\peaknet\data\130829ic1\130829_063.dxd	OPhos
64	1308506-4 20x	Sample	130814ic1a.met	c:\peaknet\data\130829ic1\130829_064.dxd	OPhos
65	1308506-5 50x	Sample	130814ic1a.met	c:\peaknet\data\130829ic1\130829_065.dxd	OPhos
66	1308506-6 20x	Sample	130814ic1a.met	c:\peaknet\data\130829ic1\130829_066.dxd	OPhos
67	1308506-7 500x	Sample	130814ic1a.met	c:\peaknet\data\130829ic1\130829_067.dxd	OPhos
68	1308506-8 20x	Sample	130814ic1a.met	c:\peaknet\data\130829ic1\130829_068.dxd	OPhos
69	1308506-9 20x	Sample	130814ic1a.met	c:\peaknet\data\130829ic1\130829_069.dxd	OPhos
70	Blank	Sample	130814ic1a.met	c:\peaknet\data\130829ic1\130829_070.dxd	
71	CCV	Sample	130814ic1a.met	c:\peaknet\data\130829ic1\130829_071.dxd	CCV - OPhos fails @ 87%
72	CCB	Sample	130814ic1a.met	c:\peaknet\data\130829ic1\130829_072.dxd	CCB
73	1308506-10 20x	Sample	130814ic1a.met	c:\peaknet\data\130829ic1\130829_073.dxd	OPhos
74	1308506-11 500x	Sample	130814ic1a.met	c:\peaknet\data\130829ic1\130829_074.dxd	OPhos
75	1308506-12 50x	Sample	130814ic1a.met	c:\peaknet\data\130829ic1\130829_075.dxd	OPhos
76	1308506-13 500x	Sample	130814ic1a.met	c:\peaknet\data\130829ic1\130829_076.dxd	OPhos
77	1308519-1 100x	Sample	130814ic1a.met	c:\peaknet\data\130829ic1\130829_077.dxd	OPhos
78	1308519-6 100x	Sample	130814ic1a.met	c:\peaknet\data\130829ic1\130829_078.dxd	OPhos
79	1308519-7 50x	Sample	130814ic1a.met	c:\peaknet\data\130829ic1\130829_079.dxd	OPhos
80	1308519-8 50x	Sample	130814ic1a.met	c:\peaknet\data\130829ic1\130829_080.dxd	OPhos
81	Blank	Sample	130814ic1a.met	c:\peaknet\data\130829ic1\130829_081.dxd	
82	Blank	Sample	130814ic1a.met	c:\peaknet\data\130829ic1\130829_082.dxd	
83	CCV	Sample	130814ic1a.met	c:\peaknet\data\130829ic1\130829_083.dxd	CCV - OPhos fails @ 84%
84	CCB	Sample	130814ic1a.met	c:\peaknet\data\130829ic1\130829_084.dxd	CCB
85	1308295-15	Sample	130814ic1a.met	c:\peaknet\data\130829ic1\130829_085.dxd	Cl,SO4
86	1308295-15MS	Sample	130814ic1a.met	c:\peaknet\data\130829ic1\130829_086.dxd	Cl,SO4
87	1308295-15MSD	Sample	130814ic1a.met	c:\peaknet\data\130829ic1\130829_087.dxd	Cl,SO4
88	1308295-21	Sample	130814ic1a.met	c:\peaknet\data\130829ic1\130829_088.dxd	Cl,SO4

Schedule File: C:\PeakNet\schedule\130829IC1.sch

Line	Sample	Sample Type	Method	Data File	Comment
89	1308295-28	Sample	130814ic1a.met	c:\peaknet\data\130829ic1\130829_089.dxd	Cl,SO4
90	1308381-2	Sample	130814ic1a.met	c:\peaknet\data\130829ic1\130829_090.dxd	F,SO4
91	1308381-3	Sample	130814ic1a.met	c:\peaknet\data\130829ic1\130829_091.dxd	F,SO4
92	Blank	Sample	130814ic1a.met	c:\peaknet\data\130829ic1\130829_092.dxd	
93	CCV	Sample	130814ic1a.met	c:\peaknet\data\130829ic1\130829_093.dxd	CCV All Pass
94	CCB	Sample	130814ic1a.met	c:\peaknet\data\130829ic1\130829_094.dxd	CCB
95	Blank	Sample	130814ic1a.met	c:\peaknet\data\130829ic1\130829_095.dxd	
96	Blank	Sample	130814ic1a.met	c:\peaknet\data\130829ic1\130829_096.dxd	
97	Blank	Sample	130814ic1a.met	c:\peaknet\data\130829ic1\130829_097.dxd	
98	Stop	Sample	stop.met	c:\peaknet\data\130829ic1\130829_098.dxd	Stop

Default Method Path: C:\PEAKNET\METHOD
Default Data Path: C:\PEAKNET\DATA\130701IC1
Comment:

BatchDx created schedule. Analyst: ATD
Instrument #1: DIONEX DX-120. ID Serial Number: 99060762
Analytical Column: Dionex IonPac AS14 S/N 029999
Methods: EPA 300.0 and SW9056. ALS SOP 1113
Eluent: Made daily, 10mL of Eluent Concentrate ID: RG130304-2 to 1000mL of DI water.

	Final	ID	Aliq
cal std level 1 (1000x)	10.00	ST130603-9, ST130613-1	0.01
cal std level 2 (100x)	5.00	" "	0.05
cal std level 3 (25x)	5.00	" "	0.20
cal std level 4 (10x)	5.00	" "	0.50
cal std level 5 (5x)	5.00	" "	1.00
cal std level 6 (2.5x)	5.00	" "	2.00
CCV	5.00	ST130729-2, ST130806-3	0.50
RVS	5.00	ST130613-1, ST130806-3	0.01
ICV	5.00	ST130502-5	0.25
		ST130626-11	0.10
LCS & MS/D	5.00	ST130208-9, ST130806-2	0.05

Dilutions Table: All to 5mL Final Volume
10X 0.5mL
20X 0.25mL
25X 0.2mL
50X 0.1mL
100X 0.05mL
200X 0.025mL
500X 0.01mL

Method Report - 130814ic1.met

Method Information : Select Module(s)

System Name : DX-120 IC-1
System Number : 1
Method Type : Ion Chromatography
Column : AS14 4-MM
Analyst : WETCHEM
Comment : Flow rate = 1.2 mL/min,
Eluent = 3.5mM Na2CO3 / 1.0 mM NaHCO3

DX-120 Timed Events

Module Name : DX-120 #1
Module Serial Number : 99060762
System Mode : Column
Column : A
Pump : On
SRS / Cell : On
Eluent Pressure : On
Pressure Unit : psi
TTL 1 Label : TTL 1
TTL 2 Label : TTL 2
Comment :

Time	Offset	Valve	TTL1	TTL2	AC	Collect
Init	*	Load	Low	Low	Off	
0.00		Load	Low	Low	Off	Begin
0.10		Inject	Low	Low	Off	
0.40		Load	Low	Low	Off	
11.80		Load	High	Low	Off	

DX-120 Detector Parameters

Detector Type : DX-120
Data collection time (minutes) : 14.00
Data Collection Rate : 5.00
Real time plot scale maximum (μS) : 40.000
Real time plot scale minimum (μS) : -3.000

DX-120 Integration Parameters

Peak detection algorithm : Standard
Starting peak width (seconds) : 8.00
Peak threshold : 0.50
Peak area reject (area counts) : 800.00
Reference peak area reject (area counts) : 1000.00

DX-120 Smoothing Parameters

Filter Type : No filter

DX-120 Report Data

Report Format File : C:\PeakNet\method\IC Report_std.rpt
Print Sample Analysis : Yes
Print Calibration Update : Yes
Print Check Standard : Yes
System Suitability Tests :
No system suitability tests selected.

DX-120 Integration Data Events

Time	Description
0.00	Stop peak detection
0.05	Force baseline at start of all peaks
1.90	Start peak detection
2.20	Void volume treatment for this peak
3.00	Void volume treatment for this peak

DX-120 Calibration Parameters

External or internal calibration : EXTERNAL
Number of replicates for calibration : 1
Rejection : Manual
Level Weighting : Equal
Calibration standard volume : 1.00
Default sample volume : 1.00
Amount units :
Replace retention time : Yes
Update response : Yes
Default dilution factor : 1.00
Default response factor for unknown peaks : 0.00
Calculate unknowns by area or height : Area

DX-120 Component Identification Table

Component	Retention	Tolerance	Reference
Fluoride	2.83 min	5.00 %	
Chloride	3.85 min	5.00 %	
Nitrite as N	4.53 min	4.90 %	
Bromide	5.60 min	7.30 %	
Nitrate as N	6.47 min	10.00 %	
Orthophosphate as P	8.97 min	4.10 %	
Sulfate	10.93 min	4.10 %	
Nitrate/Nitrite as N	20.00 min	5.00 %	

DX-120 Component Quantitation Table

Component	Retention	Low Limit	High Limit
Fluoride	2.83 min	100	10000
Chloride	3.85 min	200	20000
Nitrite as N	4.53 min	100	10000
Bromide	5.60 min	200	20000
Nitrate as N	6.47 min	200	20000
Orthophosphate as P	8.97 min	300	20000
Sulfate	10.93 min	500	100000
Nitrate/Nitrite as N	20.00 min	1	10

DX-120 Component Calibration Table

Component	Retention Time	Curve Fit	Origin	Cal. by	Response Component	Relative Factor
Fluoride	2.83 min	Quadratic	Ignore	Area		0.00
Chloride	3.85 min	Quadratic	Ignore	Area		0.00
Nitrite as N	4.53 min	Quadratic	Ignore	Area		0.00
Bromide	5.60 min	Quadratic	Ignore	Area		0.00
Nitrate as N	6.47 min	Quadratic	Ignore	Area		0.00
Orthophosphate as P	8.97 min	Quadratic	Ignore	Area		0.00
Sulfate	10.93 min	Quadratic	Ignore	Area		0.00
Nitrate/Nitrite as N	20.00 min	Quadratic	Ignore	Area		0.00

DX-120 Component = Fluoride Levels Table

Retention Time : 2.83 min
Amount units :
Replicate unit type : Area
Number of levels : 7
Number of replicates : 1

Level	Amount	Replicate 1
1	10000.00	2.09342e+006
2	5000.00	1.01061e+006
3	2000.00	373139
4	500.00	86811
5	100.00	17291
6	50.00	10708

DX-120 Component = Chloride Levels Table

Retention Time : 3.85 min
Amount units :
Replicate unit type : Area
Number of levels : 7
Number of replicates : 1

Level	Amount	Replicate 1
1	20000.00	3.04975e + 006
2	10000.00	1.41923e + 006
3	4000.00	522029
4	1000.00	125340
5	200.00	27852
6	100.00	16655

DX-120 Component = Nitrite as N Levels Table

Retention Time : 4.53 min
Amount units :
Replicate unit type : Area
Number of levels : 7
Number of replicates : 1

Level	Amount	Replicate 1
1	10000.00	3.16429e + 006
2	5000.00	1.48949e + 006
3	2000.00	566133
4	500.00	134230
5	100.00	24753
6	50.00	10259

DX-120 Component = Bromide Levels Table

Retention Time : 5.60 min
Amount units :
Replicate unit type : Area
Number of levels : 7
Number of replicates : 1

Level	Amount	Replicate 1
1	20000.00	1.0775e + 006
2	10000.00	518603
3	4000.00	197556
4	1000.00	46864
5	200.00	8352
6	100.00	4147

DX-120 Component = Nitrate as N Levels Table

Retention Time : 6.47 min
Amount units :
Replicate unit type : Area
Number of levels : 7
Number of replicates : 1

Level	Amount	Replicate 1
1	20000.00	8.27424e + 006
2	10000.00	3.77847e + 006
3	4000.00	1.33643e + 006
4	1000.00	300391
5	200.00	55640
6	100.00	26319

DX-120 Component = Orthophosphate as P Levels Table

Retention Time : 8.97 min
Amount units :
Replicate unit type : Area
Number of levels : 7
Number of replicates : 1

Level	Amount	Replicate 1
1	20000.00	2.84012e + 006
2	10000.00	1.41609e + 006
3	4000.00	551983
4	1000.00	148363
5	200.00	43853
6	100.00	24583

DX-120 Component = Sulfate Levels Table

Retention Time : 10.93 min
Amount units :
Replicate unit type : Area
Number of levels : 7
Number of replicates : 1

Level	Amount	Replicate 1
1	100000.00	1.27997e + 007
2	50000.00	5.92418e + 006
3	20000.00	2.11679e + 006
4	5000.00	483911
5	1000.00	88240
6	500.00	43959

DX-120 Component = Nitrate/Nitrite as N Levels Table
Retention Time : 20.00 min
Amount units :
Replicate unit type : Area
Number of levels : 0
Number of replicates : 1

DX-120 XY Data Parameters

Calibration Update Report

Sample Name : 5X STD
Data File Name : C:\PEAKNET\DATA\130814BIC1\130714B_002.DXD

Method File Name : C:\PeakNet\method\130814ic1.met
Schedule File Name : c:\peaknet\schedule\130814bc1.sch
Date Time Acquired : 8/14/13 7:48:03 PM
Calibration Date : 8/15/13 11:57:44 AM

System Operator : JFN
Datafile Updated : 8/15/13 11:58:10 AM
Method Comment : Flow rate = 1.2 mL/min, Eluent = 3...

Peak Information : All Components

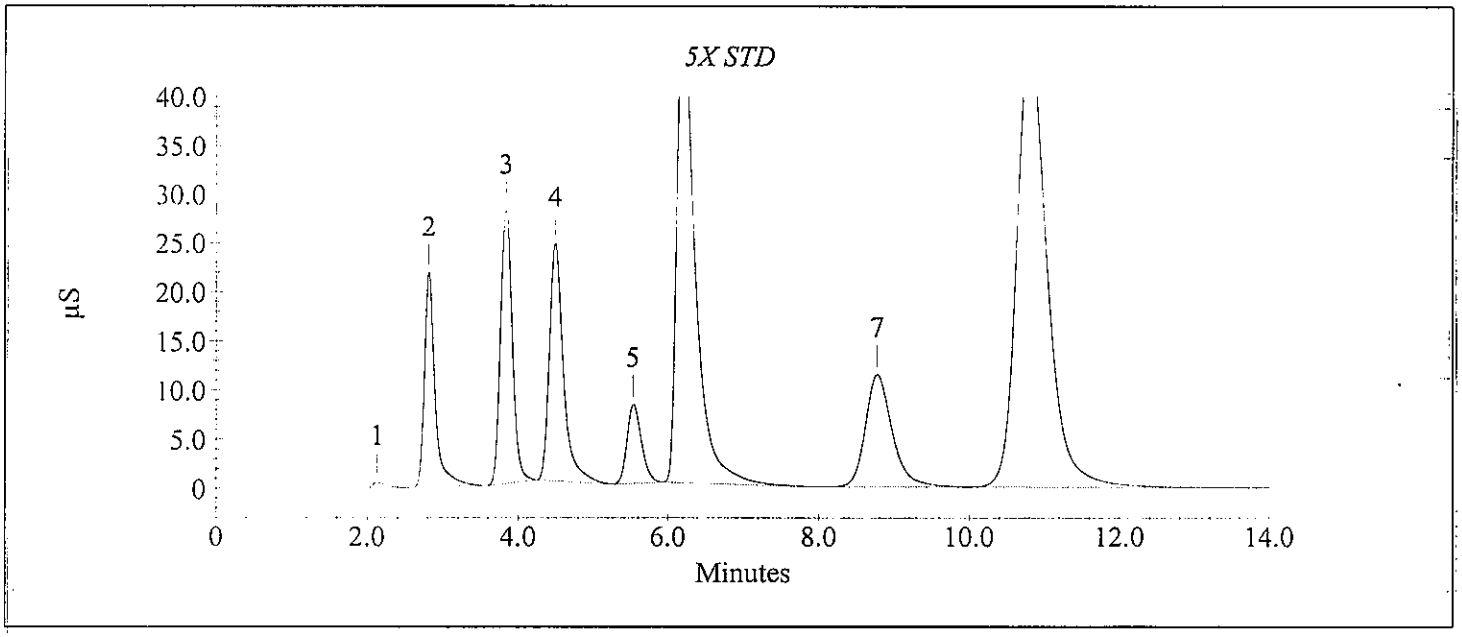
Peak #	Analyte	Retention Time (min.)	Concentration	Peak Area
2	Fluoride	2.81	10000	2093421
3	Chloride	3.84	20000	3049748
4	Nitrite as N	4.49	10000	3164288
5	Bromide	5.53	20000	1077502
6	Nitrate as N	6.20	20000	8274240
7	Orthophosphate as P	8.77	20000	2840121
8	Sulfate	10.80	100000	12799653
	Nitrate/Nitrite as N			

Calibration Update Report

Sample Name : 5X STD
Data File Name : C:\PEAKNET\DATA\130814BIC1\130714B_002.DXD

Method File Name : C:\PeakNet\method\130814ic1.met
Schedule File Name : c:\peaknet\schedule\130814bc1.sch
Date Time Acquired : 8/14/13 7:48:03 PM
Calibration Date : 8/15/13 11:57:44 AM

System Operator : JFN
Datafile Updated : 8/15/13 11:58:10 AM
Method Comment : Flow rate = 1.2 mL/min, Eluent = 3...



Calibration Update Report

Sample Name : 10X STD
Data File Name : c:\peaknet\data\130814bic1\130714b_003.DXD

Method File Name : c:\peaknet\method\130814ic1.met
Schedule File Name : c:\peaknet\schedule\130814bc1.sch
Date Time Acquired : 8/14/13 8:02:06 PM
Calibration Date : 8/14/13 8:16:08 PM

System Operator : JFN
Datafile Updated : 8/14/13 8:16:08 PM
Method Comment : Flow rate = 1.2 mL/min, Eluent = 3...

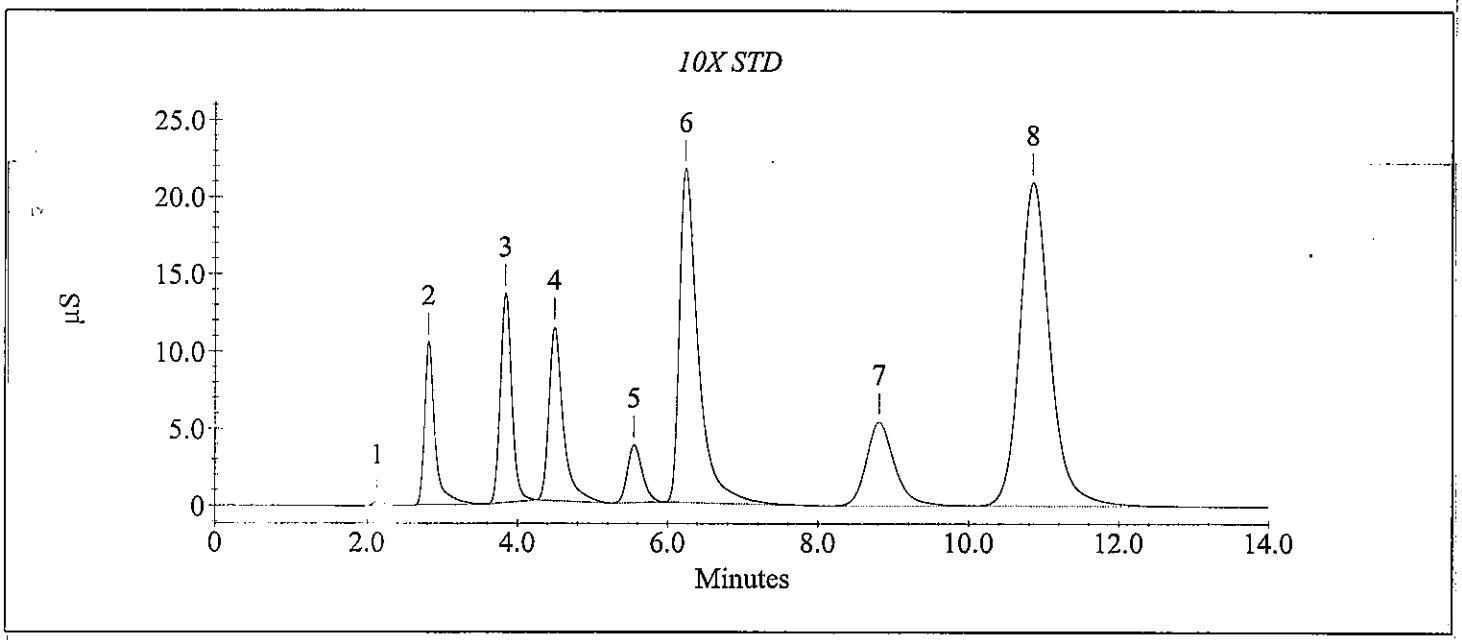
Peak Information : All Components

Peak #	Analyte	Retention Time (min.)	Concentration	Peak Area
			ASD 8/20	
2	Fluoride	2.81	10000 5000	1010605
3	Chloride	3.84	20000 10000	1419228
4	Nitrite as N	4.49	10000 5000	1489485
5	Bromide	5.55	20000 10000	518603
6	Nitrate as N	6.24	20000 10000	3778471
7	Orthophosphate as P	8.81	20000 10000	1416094
8	Sulfate	10.85	100000 50000	5924184
	Nitrate/Nitrite as N			

Calibration Update Report

Sample Name : 10X STD
Data File Name : c:\peaknet\data\130814bic1\130714b_003.DXD

Method File Name : c:\peaknet\method\130814ic1.met	System Operator : JFN
Schedule File Name : c:\peaknet\schedule\130814bc1.sch	Datafile Updated : 8/14/13 8:16:08 PM
Date Time Acquired : 8/14/13 8:02:06 PM	Method Comment : Flow rate = 1.2 mL/min, Eluent = 3...
Calibration Date : 8/14/13 8:16:08 PM	



Calibration Update Report

Sample Name : 25X STD
Data File Name : c:\peaknet\data\130814bic1\130714b_004.DXD

Method File Name : c:\peaknet\method\130814ic1.met
Schedule File Name : c:\peaknet\schedule\130814bc1.sch
Date Time Acquired : 8/14/13 8:16:11 PM
Calibration Date : 8/14/13 8:30:12 PM

System Operator : JFN
Datafile Updated : 8/14/13 8:30:12 PM
Method Comment : Flow rate = 1.2 mL/min, Eluent = 3...

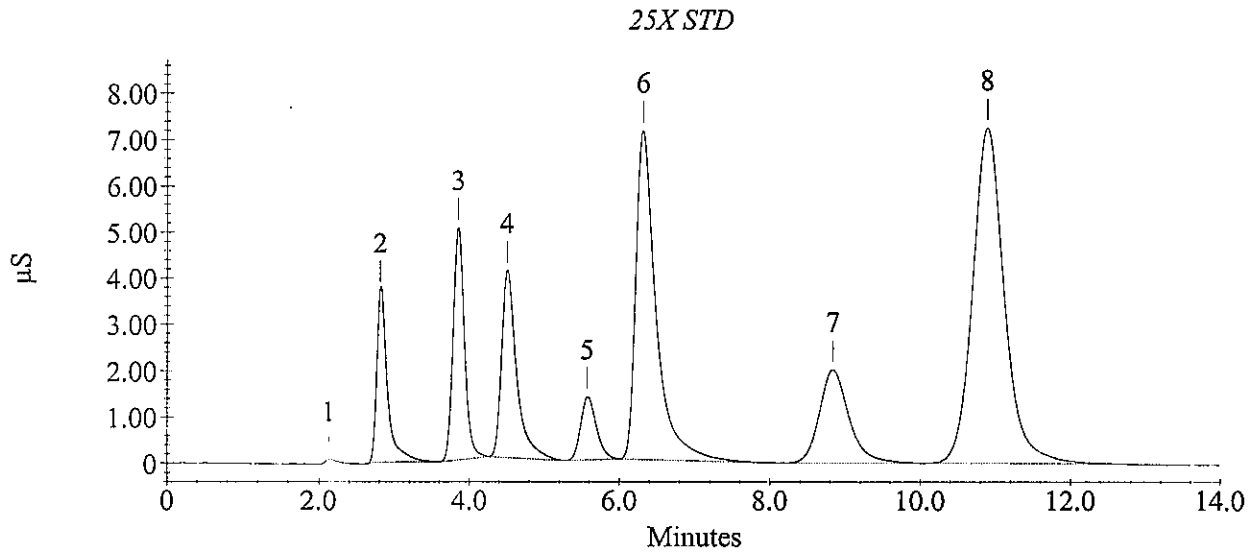
Peak Information : All Components

Peak #	Analyte	Retention Time (min.)	Concentration	Peak Area
2	Fluoride	2.81	10000 2000	373139
3	Chloride	3.85	20000 4000	522029
4	Nitrite as N	4.51	10000 2000	566133
5	Bromide	5.57	20000 4000	197556
6	Nitrate as N	6.32	20000 4000	1336430
7	Orthophosphate as P	8.84	20000 4000	551983
8	Sulfate	10.89	100000 20000	2116785
	Nitrate/Nitrite as N			

Calibration Update Report

Sample Name : 25X STD
Data File Name : c:\peaknet\data\130814bic1\130714b_004.DXD

Method File Name : c:\peaknet\method\130814ic1.met	System Operator : JFN
Schedule File Name : c:\peaknet\schedule\130814bc1.sch	Datafile Updated : 8/14/13 8:30:12 PM
Date Time Acquired : 8/14/13 8:16:11 PM	Method Comment : Flow rate = 1.2 mL/min, Eluent = 3...
Calibration Date : 8/14/13 8:30:12 PM	



Calibration Update Report

Sample Name : 100X STD
Data File Name : c:\peaknet\data\130814bic1\130714b_005.DXD

Method File Name : c:\peaknet\method\130814ic1.met
Schedule File Name : c:\peaknet\schedule\130814bc1.sch
Date Time Acquired : 8/14/13 8:30:14 PM
Calibration Date : 8/14/13 8:44:15 PM

System Operator : JFN
Datafile Updated : 8/14/13 8:44:15 PM
Method Comment : Flow rate = 1.2 mL/min, Eluent = 3...

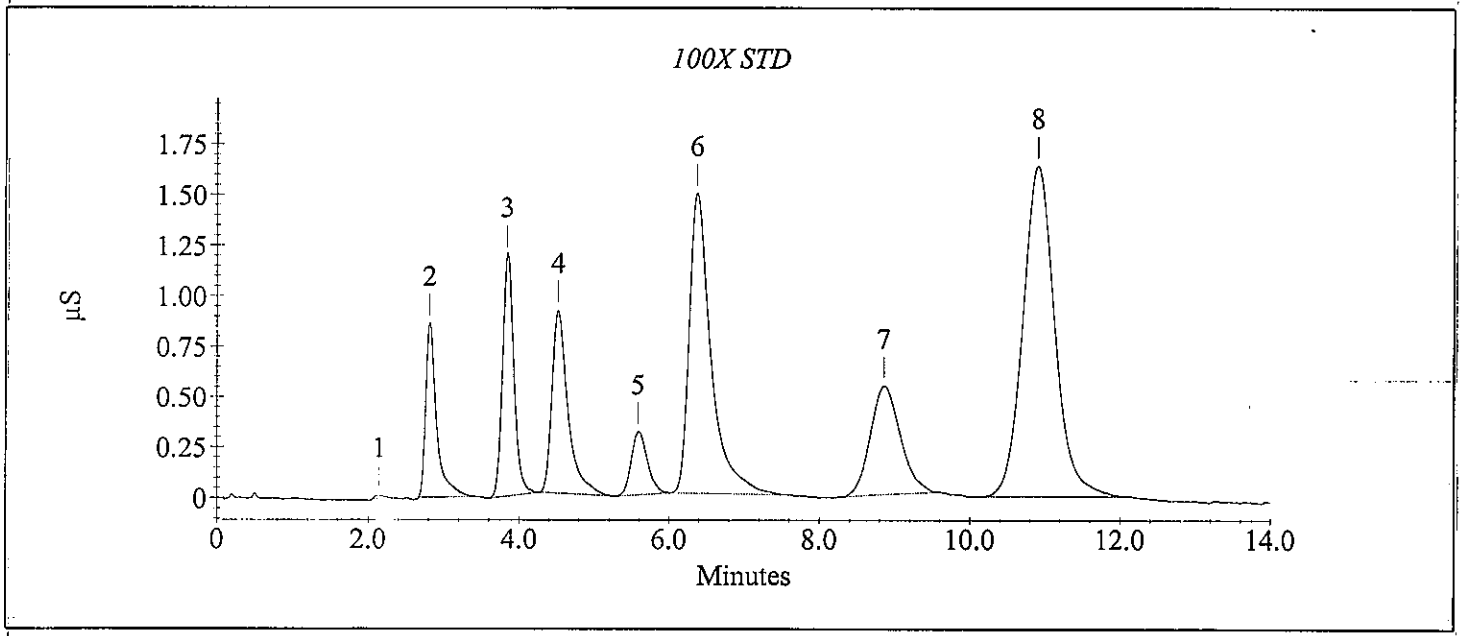
Peak Information : All Components

Peak #	Analyte	Retention Time (min.)	Concentration	Peak Area
2	Fluoride	2.81	10000 500	86811
3	Chloride	3.84	20000 1060	125340
4	Nitrite as N	4.52	10000 500	134230
5	Bromide	5.59	20000 1000	46864
6	Nitrate as N	6.37	20000 1000	300391
7	Orthophosphate as P	8.85	20000 1000	148363
8	Sulfate	10.91	100000 5000	483911
	Nitrate/Nitrite as N			

Calibration Update Report

Sample Name : 100X STD
Data File Name : c:\peaknet\data\130814bic1\130714b_005.DXD

Method File Name : c:\peaknet\method\130814ic1.met	System Operator : JFN
Schedule File Name : c:\peaknet\schedule\130814bc1.sch	Datafile Updated : 8/14/13 8:44:15 PM
Date Time Acquired : 8/14/13 8:30:14 PM	Method Comment : Flow rate = 1.2 mL/min, Eluent = 3...
Calibration Date : 8/14/13 8:44:15 PM	



Calibration Update Report

Sample Name : 500X STD
Data File Name : c:\peaknet\data\130814bic1\130714b_006.DXD

Method File Name : c:\peaknet\method\130814ic1.met
Schedule File Name : c:\peaknet\schedule\130814bc1.sch
Date Time Acquired : 8/14/13 8:44:18 PM
Calibration Date : 8/14/13 8:58:19 PM

System Operator : JFN
Datafile Updated : 8/14/13 8:58:19 PM
Method Comment : Flow rate = 1.2 mL/min, Eluent = 3...

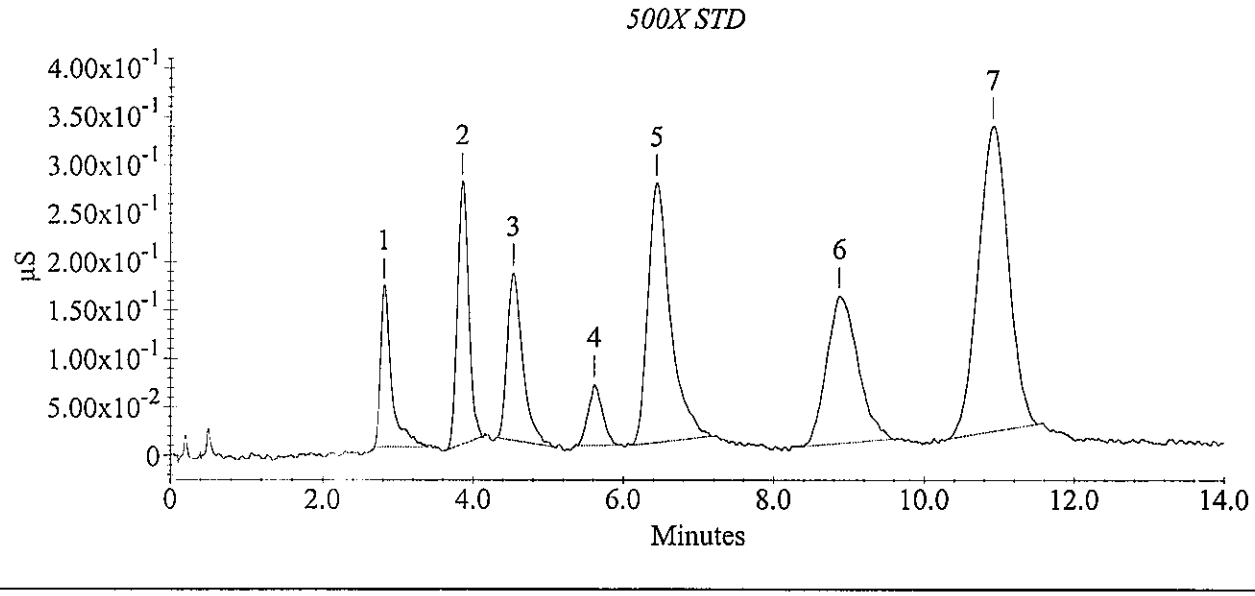
Peak Information : All Components

Peak #	Analyte	Retention Time (min.)	Concentration	Peak Area
1	Fluoride	2.81	10000 100	17291
2	Chloride	3.85	20000 200	27852
3	Nitrite as N	4.53	10000 100	24753
4	Bromide	5.61	20000 200	8352
5	Nitrate as N	6.44	20000 250	55640
6	Orthophosphate as P	8.87	20000 200	43853
7	Sulfate	10.91	100000 1000	88240
	Nitrate/Nitrite as N			

Calibration Update Report

Sample Name : 500X STD
Data File Name : c:\peaknet\data\130814bic1\130714b_006.DXD

Method File Name : c:\peaknet\method\130814ic1.met	System Operator : JFN
Schedule File Name : c:\peaknet\schedule\130814bc1.sch	Datafile Updated : 8/14/13 8:58:19 PM
Date Time Acquired : 8/14/13 8:44:18 PM	Method Comment : Flow rate = 1.2 mL/min, Eluent = 3...
Calibration Date : 8/14/13 8:58:19 PM	



Calibration Update Report

Sample Name : 1000X STD
Data File Name : c:\peaknet\data\130814bic1\130714b_007.DXD

Method File Name : c:\peaknet\method\130814ic1.met
Schedule File Name : c:\peaknet\schedule\130814bc1.sch
Date Time Acquired : 8/14/13 8:58:21 PM
Calibration Date : 8/14/13 9:12:22 PM

System Operator : JFN
Datafile Updated : 8/14/13 9:12:22 PM
Method Comment : Flow rate = 1.2 mL/min, Eluent = 3...

Peak Information : All Components

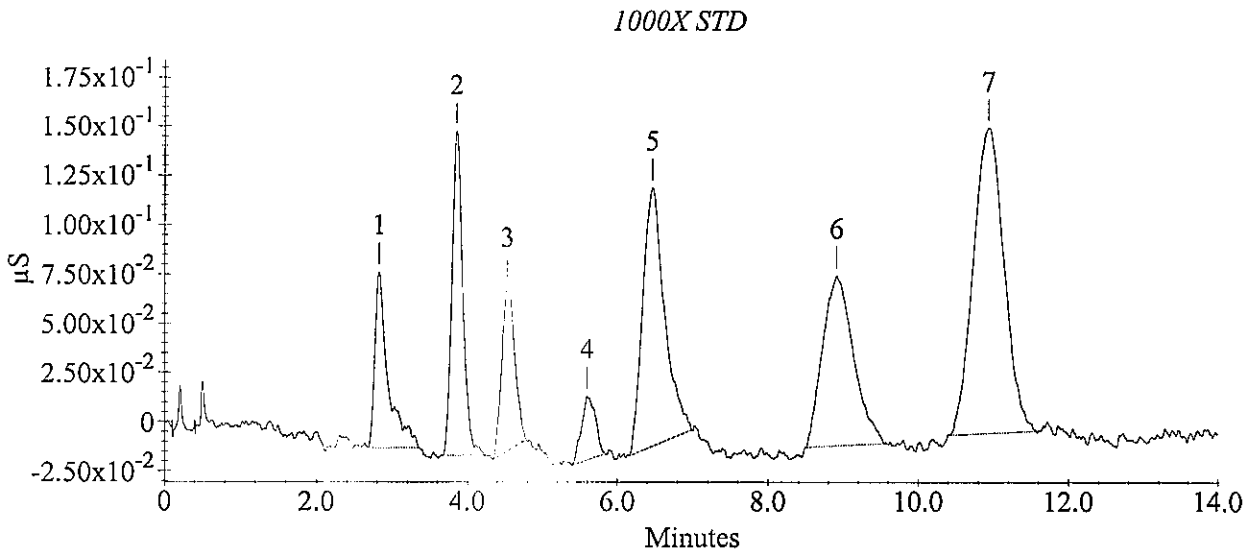
Peak #	Analyte	Retention Time (min.)	Concentration		Peak Area
			AGD 9/20		
1	Fluoride	2.83	10000	50	10708
2	Chloride	3.85	20000	100	16655
3	Nitrite as N	4.53	10000	50	10259
4	Bromide	5.60	20000	100	4147
5	Nitrate as N	6.47	20000	100	26319
6	Orthophosphate as P	8.91	20000	100	24583
7	Sulfate	10.93	100000	500	43959
	Nitrate/Nitrite as N				

Calibration Update Report

Sample Name : 1000X STD
Data File Name : c:\peaknet\data\130814bic1\130714b_007.DXD

Method File Name : c:\peaknet\method\130814ic1.met
Schedule File Name : c:\peaknet\schedule\130814bc1.sch
Date Time Acquired : 8/14/13 8:58:21 PM
Calibration Date : 8/14/13 9:12:22 PM

System Operator : JFN
Datafile Updated : 8/14/13 9:12:22 PM
Method Comment : Flow rate = 1.2 mL/min, Eluent = 3...



Calibration Update Report

Sample Name : 0 STD
Data File Name : c:\peaknet\data\130814bic1\130714b_008.DXD

Method File Name : c:\peaknet\method\130814ic1.met
Schedule File Name : c:\peaknet\schedule\130814bc1.sch
Date Time Acquired : 8/14/13 9:12:24 PM
Calibration Date : 8/14/13 9:26:26 PM

System Operator : JFN
Datafile Updated : 8/14/13 9:26:26 PM
Method Comment : Flow rate = 1.2 mL/min, Eluent = 3...

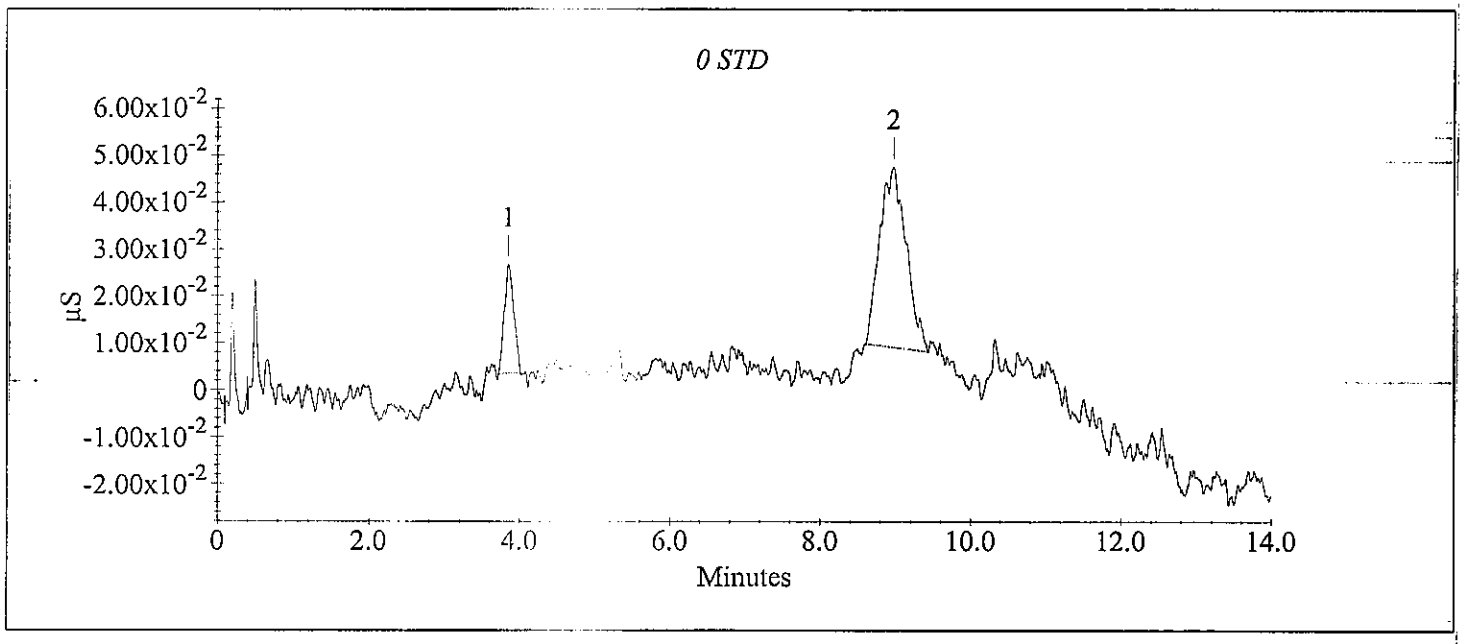
Peak Information : All Components

Peak #	Analyte	Retention Time (min.)	Concentration		Peak Area
			ADD 0's		
1	Chloride	3.85	20000	0	2015
1	Chloride	3.85	20000	0	2015
	Nitrite as N			0	
	Bromide			0	
	Nitrate as N			0	
2	Orthophosphate as P	8.97	20000	0	9434
	Sulfate			0	
	Nitrate/Nitrite as N				

Calibration Update Report

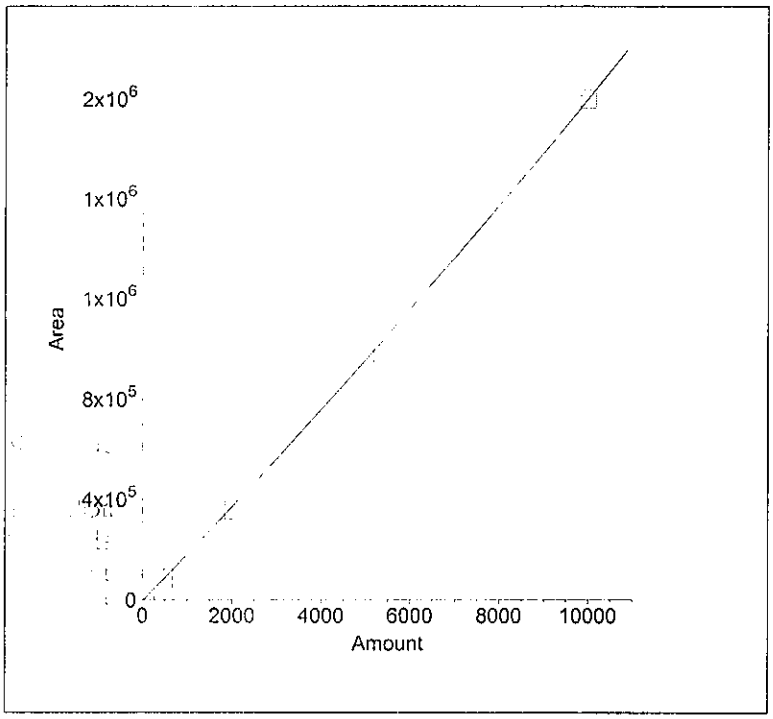
Sample Name : 0 STD
Data File Name : c:\peaknet\data\130814bic1\130714b_008.DXD

Method File Name : c:\peaknet\method\130814ic1.met	System Operator : JFN
Schedule File Name : c:\peaknet\schedule\130814bc1.sch	Datafile Updated : 8/14/13 9:26:26 PM
Date Time Acquired : 8/14/13 9:12:24 PM	Method Comment : Flow rate = 1.2 mL/min, Eluent = 3...
Calibration Date : 8/14/13 9:26:26 PM	

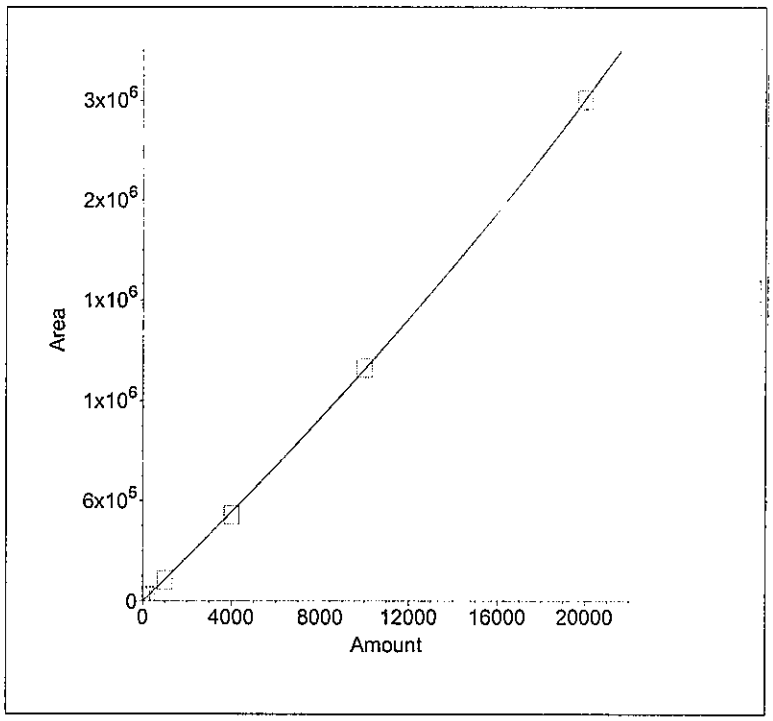


Method:C:\PEAKNET\METHOD\130814IC1.MET Updated:8/15/13 12:05:00 PM Total:8

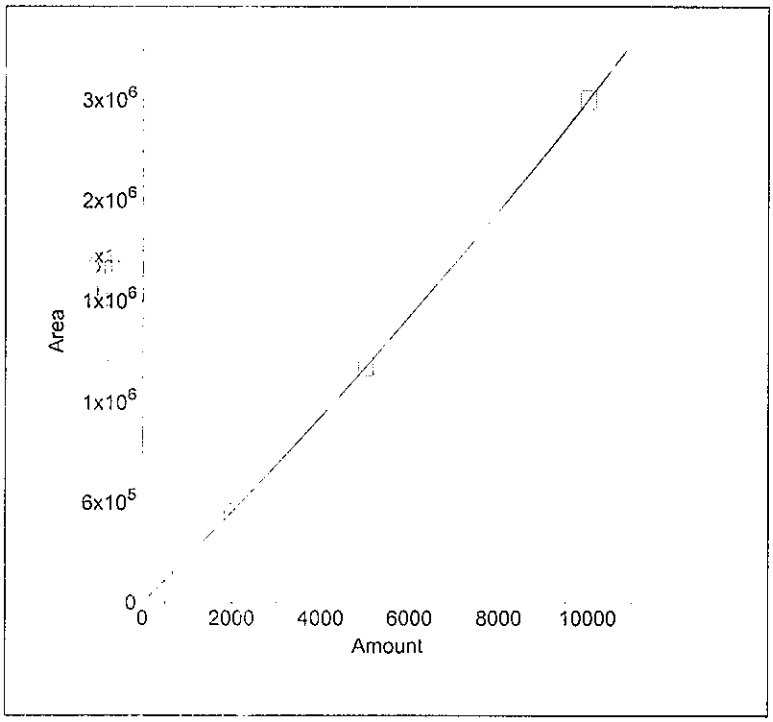
1. Component:Fluoride
Standard:External Fit Type:Quadratic
Origin:Ignore Calibration:Area
r^2=0.999875
Amt=-1.868592e-010*Resp^2+
5.148842e-003*Resp+32.12



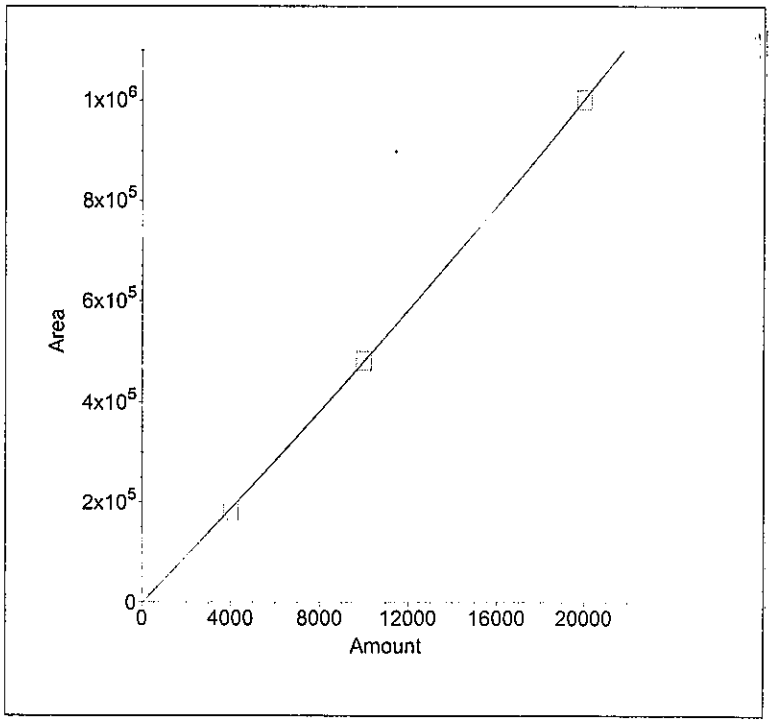
2. Component:Chloride
Standard:External Fit Type:Quadratic
Origin:Ignore Calibration:Area
r^2=0.999919
Amt=-3.311979e-010*Resp^2+
7.558046e-003*Resp+17.45



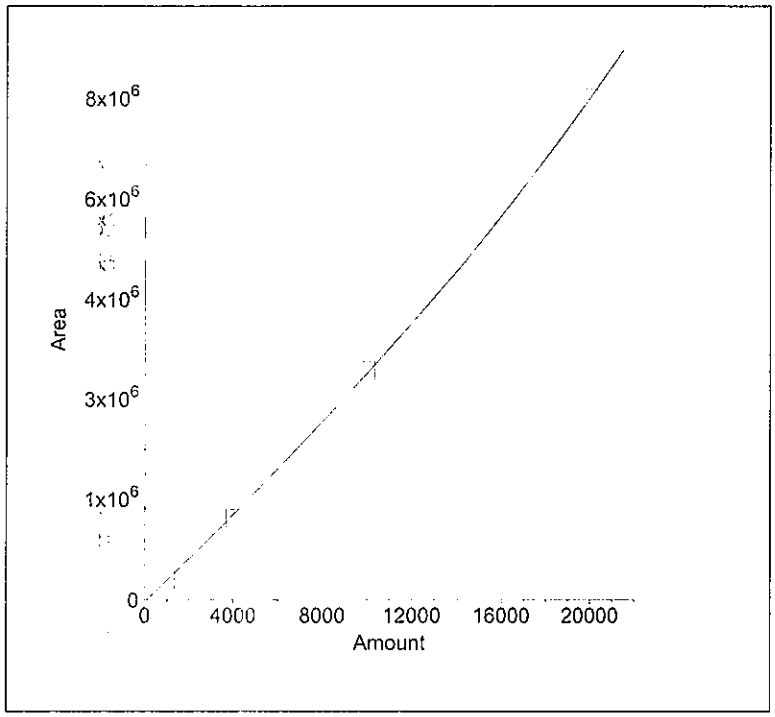
3. Component:Nitrite as N
Standard:External Fit Type:Quadratic
Origin:Ignore Calibration:Area
r^2=0.999990
Amt=-1.181760e-010*Resp^2+
3.526729e-003*Resp+21.58



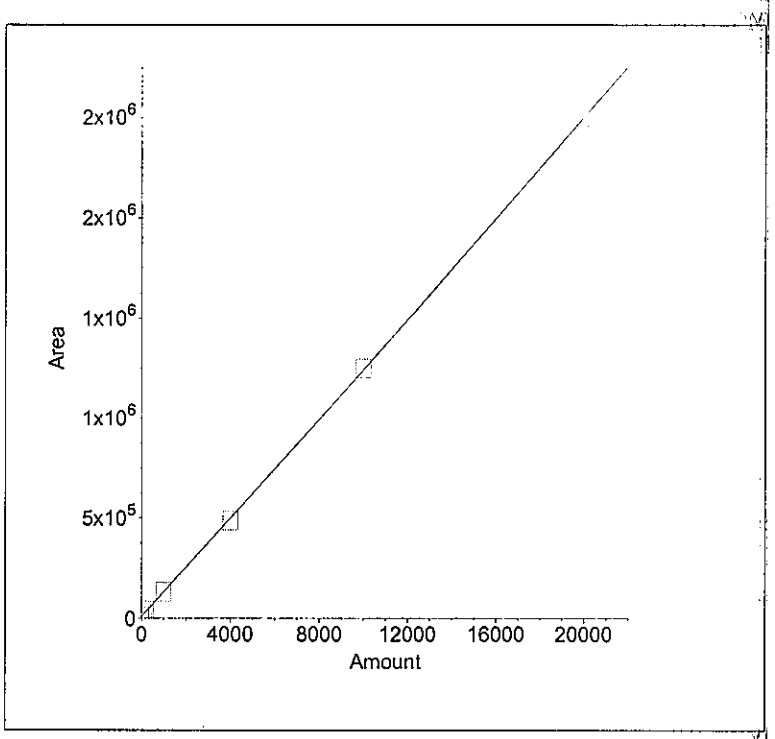
4. Component:Bromide
Standard:External Fit Type:Quadratic
Origin:Ignore Calibration:Area
r^2=0.999978
Amt=-1.345991e-009*Resp^2+
1.995996e-002*Resp+49.01



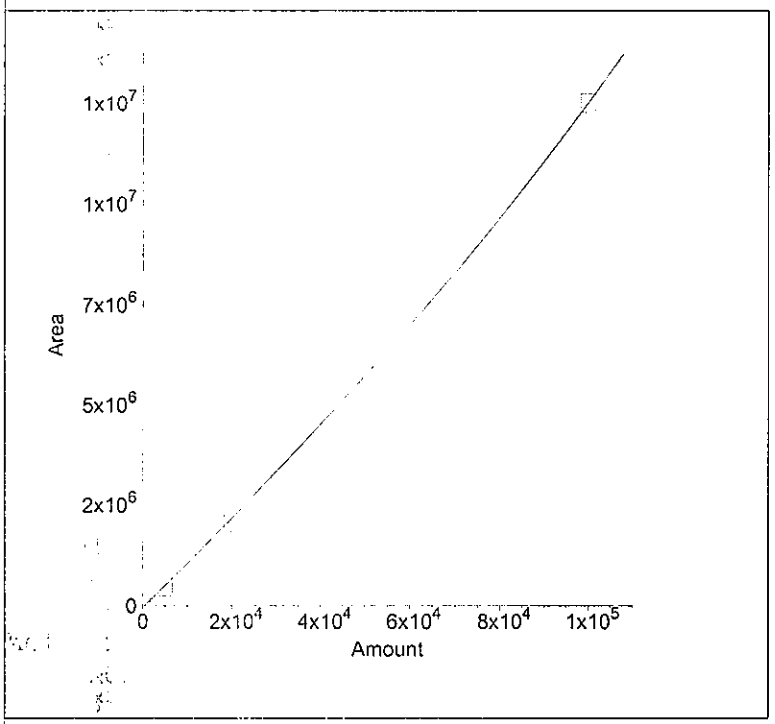
5. Component:Nitrate as N
Standard:External Fit Type:Quadratic
Origin:Ignore Calibration:Area
r^2=0.999818
Amt=-5.424666e-011*Resp^2+
2.851448e-003*Resp+103.6



6. Component:Orthophosphate as P
Standard:External Fit Type:Quadratic
Origin:Ignore Calibration:Area
r^2=0.999958
Amt=-6.210229e-011*Resp^2+
7.239992e-003*Resp+-71.9



7. Component:Sulfate
Standard:External Fit Type:Quadratic
Origin:Ignore Calibration:Area
r^2=0.999840
Amt=-9.807523e-011*Resp^2+
9.024771e-003*Resp+471.9



8. Component:Nitrate/Nitrite as N
Standard:External Fit Type:Quadratic
Origin:Ignore Calibration:Area

(No Levels Component)

DAILY VERIFICATION FOR ION CHROMATOGRAPH-1

(Used internally for comparative check purposes)

Analysis Date: 08/14/2013
Analyst Name: AJD
Filename for ICV: 130814Bic1/130714B_011.DXD
Calibration Date: 08/14/2013
Method ID: 130814IC1.met
Updated Method date: NA

Calibration Equation Verification (ICV)

Analyte	calibration type:	1st regression coefficient	2nd regression coefficient	intercept	A conc reported by PeakNet ug/L	observed peak area	B conc calc by spread-sheet ug/L	A/B *100 agreement %
Ophos	quad. ignore 0,0	-2.617353E-10	7.322904E-03	-3.342	4810.6	673604	4810.6	100.0

Retention Time (RT) Verification

Analyte	RT at calibration	RT in updated method (1st ICV or CCV)	deviation % (calibration vs. update) 10% tolerance	window width tolerance (NA)
F	2.81	2.81	0.0	5.00 %
Cl	3.85	3.85	0.0	5.00 %
NO2-N	4.51	4.51	0.0	4.90 %
Br	5.59	5.59	0.0	7.30 %
NO3-N	6.32	6.32	0.0	10.00%
PO4-P	8.83	8.83	0.0	4.10 %
SO4	10.88	10.88	0.0	4.10 %

Sample Analysis Report

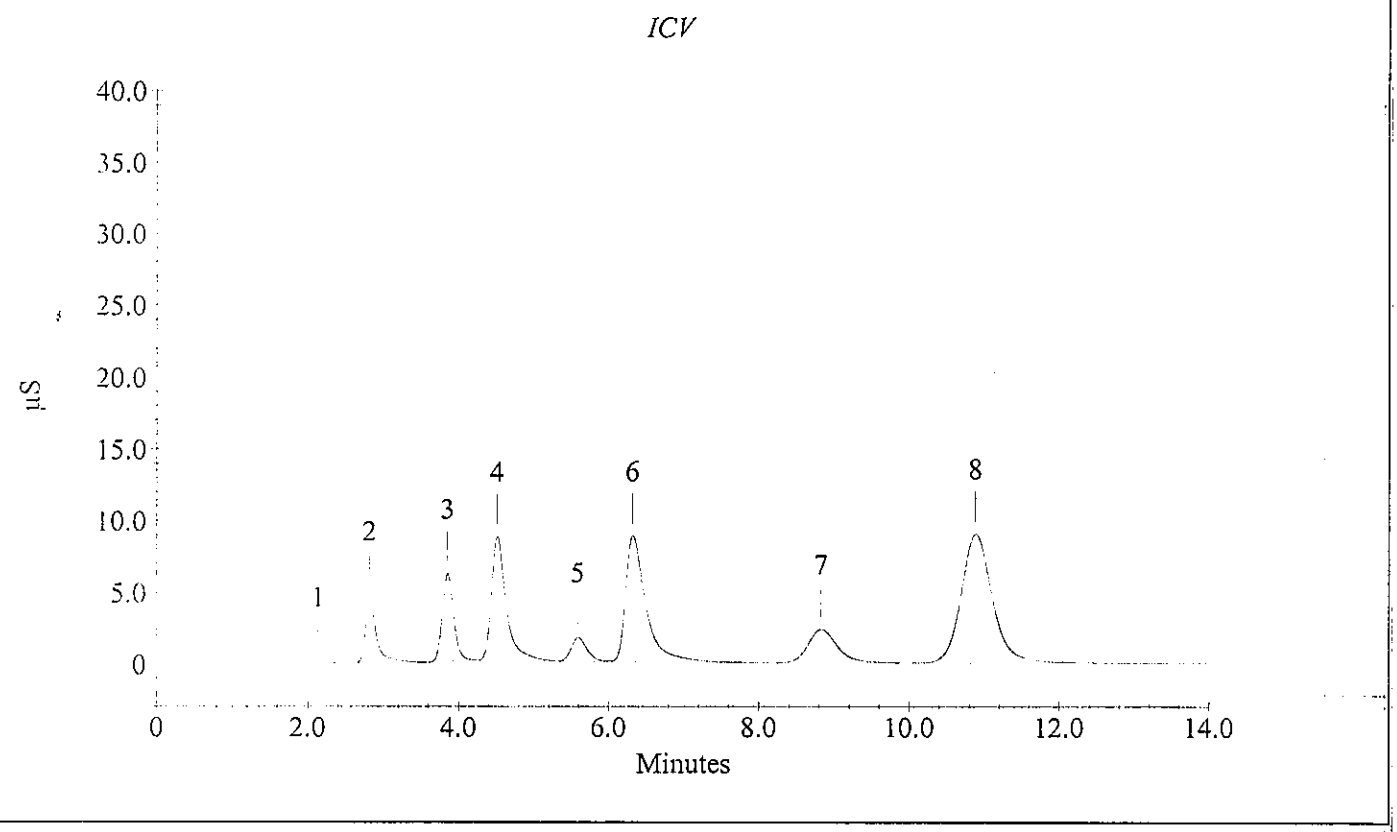
Sample Name : ICV
Data File Name : C:\PEAKNET\DATA\130814BIC1\130714B_010.DXD

Method File Name : C:\PeakNet\method\130814ic1.met
Date, Time Analyzed : 8/14/13 9:40:32 PM
System Operator : JFN
Calibration Updated : 8/15/13 12:05:00 PM

Current Date : 8/20/13
Current Time : 1:02:56 PM
Datafile Updated : 8/15/13 12:08:53 PM

Peak Information : All Components

Peak Number	Analyte	Retention Time (min.)	Concentration (ug/L)	Limit Exceeded	Peak Area
2	Fluoride	2.81	2357.9 ✓ 94%		459374
3	Chloride	3.85	4695.4 ✓ 94%		636701
4	Nitrite as N	4.51	4036.6 ✓ 100%		1185566
5	Bromide	5.59	4687.6 ✓ 94%		236155
6	Nitrate as N	6.32	4623.6 ✓ 92%		1636071
7	Orthophosphate as P	8.83	4510.5 ✓ 90%		636400
8	Sulfate	10.88	23404.4 ✓ 94%		2615408
	Nitrate/Nitrite as N				



Sample Analysis Report

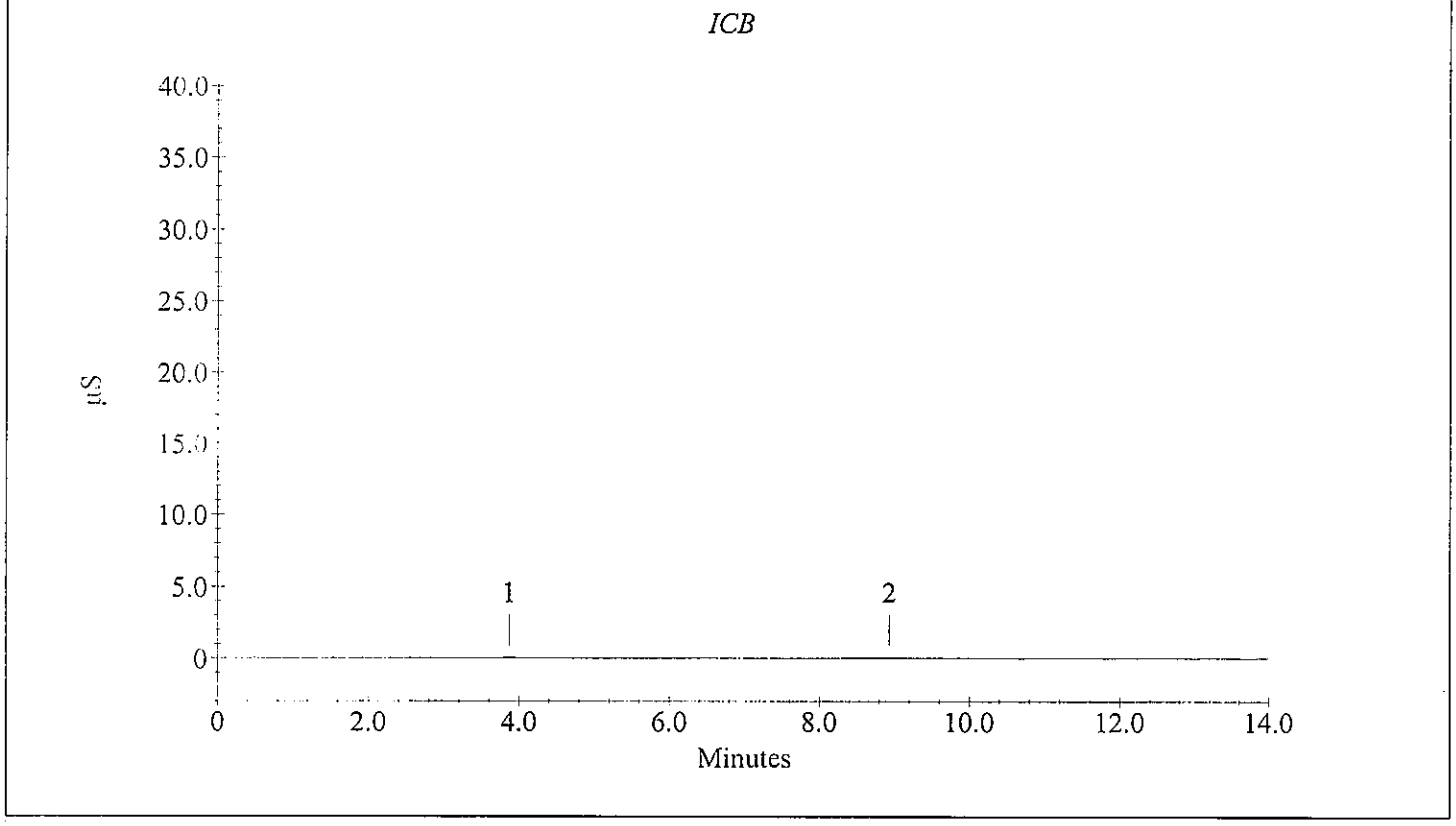
Sample Name : ICB
Data File Name : C:\PEAKNET\DATA\130814BIC1\130714B_009.DXD

Method File Name : C:\PeakNet\method\130814ic1.met
Date, Time Analyzed : 8/14/13 9:26:28 PM
System Operator : JFN
Calibration Updated : 8/15/13 12:05:00 PM

Current Date : 8/15/13
Current Time : 12:08:23 PM
Datafile Updated : 8/14/13 9:40:29 PM

Peak Information : All Components

Peak Number	Analyte	Retention Time (min.)	Concentration (ug/L)	Limit Exceeded	Peak Area
1	Chloride	3.87	37.6	-	2669
1	Chloride Nitrite as N Bromide Nitrate as N	3.87	37.6	-	2669
2	Orthophosphate as P Sulfate Nitrate/Nitrite as N	8.93	-29.2	-	5897



DAILY VERIFICATION FOR ION CHROMATOGRAPH-1

(Used internally for comparative check purposes)

Analysis Date: 08/29/2013
Analyst Name: AJD
Filename for CCV: 130829ic1/130829_011.DXD
Calibration Date: 08/14/2013
Method ID: 130814IC1A.met
Updated Method date: NA

Calibration Equation Verification (ICV)

Analyte	calibration type:	1st regression coefficient	2nd regression coefficient	intercept	A conc reported by PeakNet ug/L	observed peak area	B conc calc by spread-sheet ug/L	A/B *100 agreement %
Ophos	quad. ignore 0,0	-2.617353E-10	7.322904E-03	-3.342	4810.6	673604	4810.6	100.0

Retention Time (RT) Verification

Analyte	RT at calibration	RT in updated method (1st ICV or CCV)	deviation % (calibration vs. update) 10% tolerance	window width tolerance (NA)
F	2.81	2.79	0.7	5.00 %
Cl	3.85	3.80	1.3	5.00 %
NO2-N	4.51	4.44	1.6	4.90 %
Br	5.59	5.49	1.8	7.30 %
NO3-N	6.32	6.19	2.1	10.00%
PO4-P	8.83	8.45	4.3	4.10 %
SO4	10.88	10.37	4.7	4.10 %

Sample Analysis Report

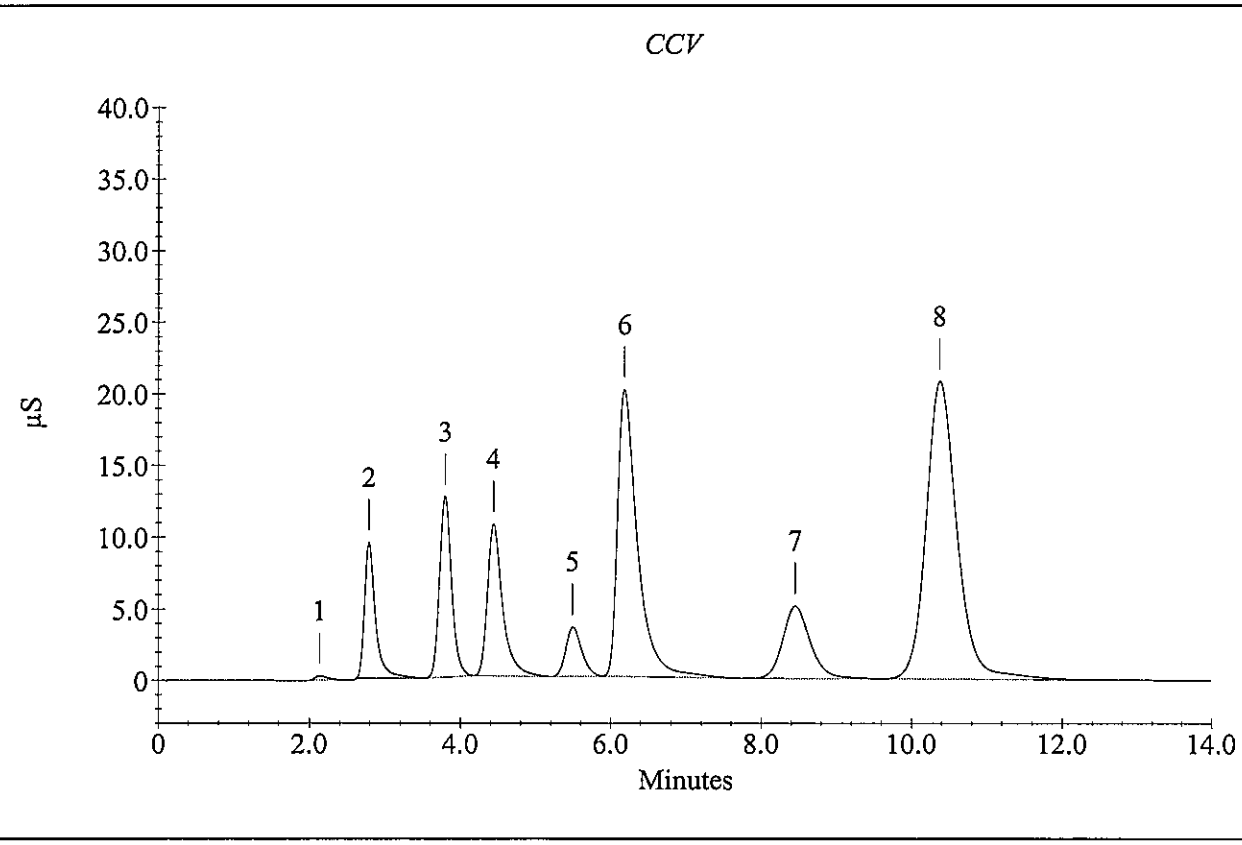
Sample Name : CCV
Data File Name : c:\peaknet\data\130829ic1\130829_011.DXD

Method File Name : c:\peaknet\method\130814ic1a.met
Date, Time Analyzed : 8/29/13 11:10:51 AM
System Operator : AJD
Calibration Updated : 8/27/13 1:52:12 PM

Current Date : 8/29/13
Current Time : 11:24:53 AM
Datafile Updated : 8/29/13 11:24:53 AM

Peak Information : All Components

Peak Number	Analyte	Retention Time (min.)	Concentration (ug/L)	Limit Exceeded	Peak Area
2	Fluoride	2.79	4811.6		961840
3	Chloride	3.80	9966.1		1402494
4	Nitrite as N	4.44	5022.6		1492703
5	Bromide	5.49	9851.1		508525
6	Nitrate as N	6.19	9919.2		3703217
7	Orthophosphate as P	8.45	9223.3		1298328
8	Sulfate	10.37	50528.7		5928577
	Nitrate/Nitrite as N				



Sample Analysis Report

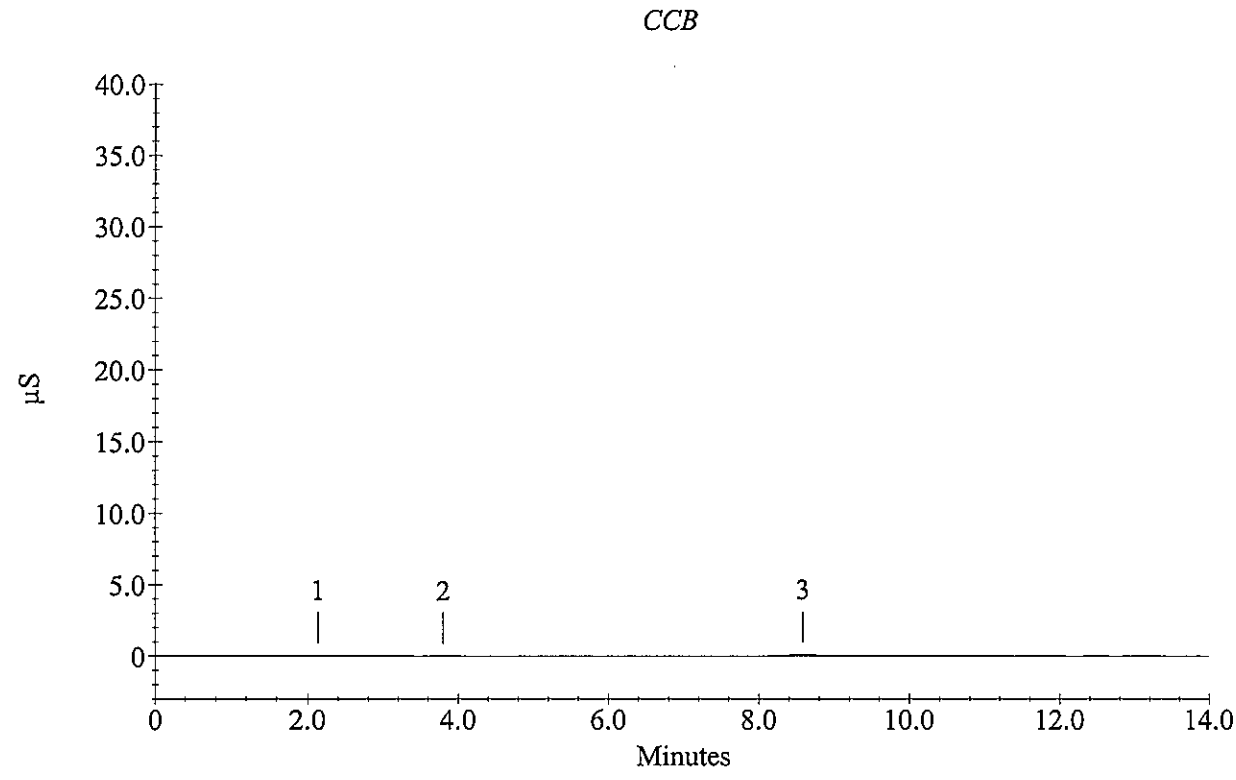
Sample Name : CCB
Data File Name : c:\peaknet\data\130829ic1\130829_012.DXD

Method File Name : c:\peaknet\method\130814ic1a.met
Date, Time Analyzed : 8/29/13 11:24:55 AM
System Operator : AJD
Calibration Updated : 8/27/13 1:52:12 PM

Current Date : 8/29/13
Current Time : 11:38:57 AM
Datafile Updated : 8/29/13 11:38:56 AM

Peak Information : All Components

Peak Number	Analyte	Retention Time (min.)	Concentration (ug/L)	Limit Exceeded	Peak Area
1		2.13	0.0		8320
2	Chloride Nitrite as N Bromide Nitrate as N	3.80	32.8	-	2028
3	Orthophosphate as P Sulfate Nitrate/Nitrite as N	8.59	116.2	-	25981



Sample Analysis Report

Sample Name : IC130829-1LCS
Data File Name : c:\peaknet\data\130829ic1\130829_013.DXD

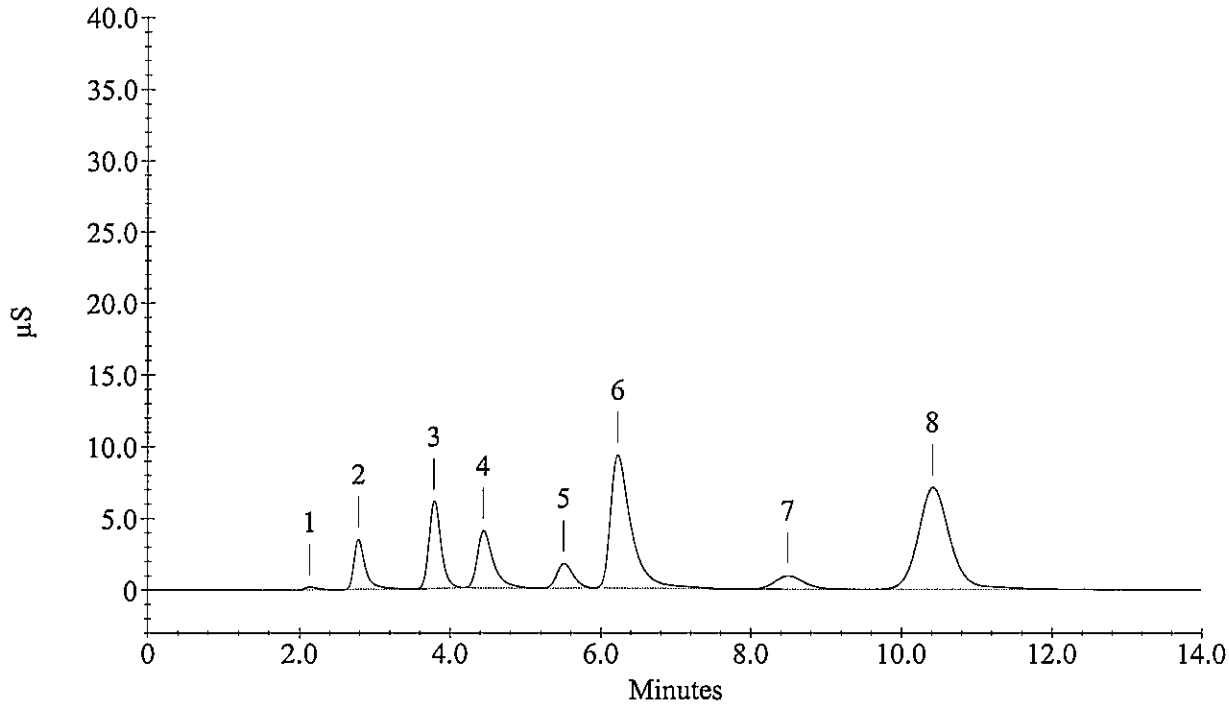
Method File Name : c:\peaknet\method\130814ic1a.met
Date, Time Analyzed : 8/29/13 11:38:59 AM
System Operator : AJD
Calibration Updated : 8/27/13 1:52:12 PM

Current Date : 8/29/13
Current Time : 11:53:00 AM
Datafile Updated : 8/29/13 11:53:00 AM

Peak Information : All Components

Peak Number	Analyte	Retention Time (min.)	Concentration (ug/L)	Limit Exceeded	Peak Area
2	Fluoride	2.79	1880.1 ✓		363705
3	Chloride	3.79	4970.5 ✓		675319
4	Nitrite as N	4.44	2057.3 ✓		588839
5	Bromide	5.51	5174.5 ✓		261398
6	Nitrate as N	6.23	5051.5 ✓		1796645
7	Orthophosphate as P	8.49	1768.9		254818
8	Sulfate	10.41	18872.1 ✓		2086151
	Nitrate/Nitrite as N				

IC130829-1LCS



Sample Analysis Report

Sample Name : IC130829-1MB
Data File Name : c:\peaknet\data\130829ic1\130829_014.DXD

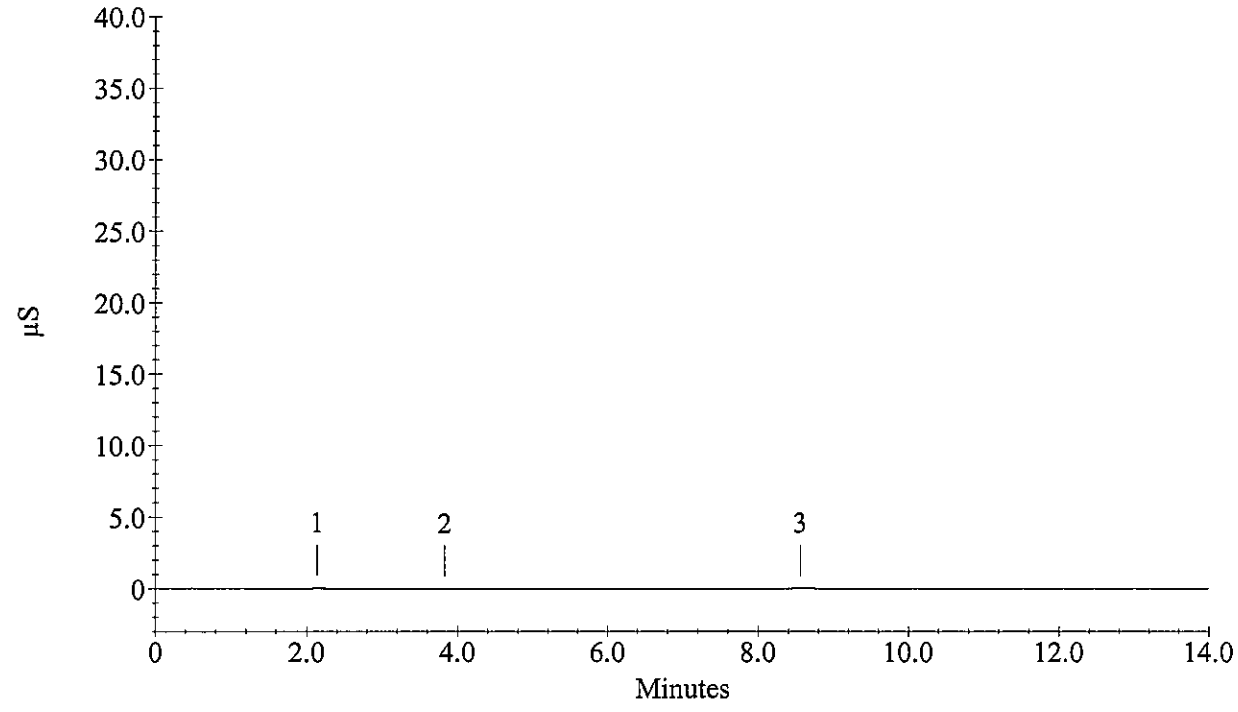
Method File Name : c:\peaknet\method\130814ic1a.met
Date, Time Analyzed : 8/29/13 11:53:02 AM
System Operator : AJD
Calibration Updated : 8/27/13 1:52:12 PM

Current Date : 8/29/13
Current Time : 12:07:04 PM
Datafile Updated : 8/29/13 12:07:04 PM

Peak Information : All Components

Peak Number	Analyte	Retention Time (min.)	Concentration (ug/L)	Limit Exceeded	Peak Area
1	Chloride Nitrite as N Bromide Nitrate as N	2.13	0.0		7769
3	Orthophosphate as P Sulfate Nitrate/Nitrite as N	8.56	32.9	-	14480

IC130829-1MB



Sample Analysis Report

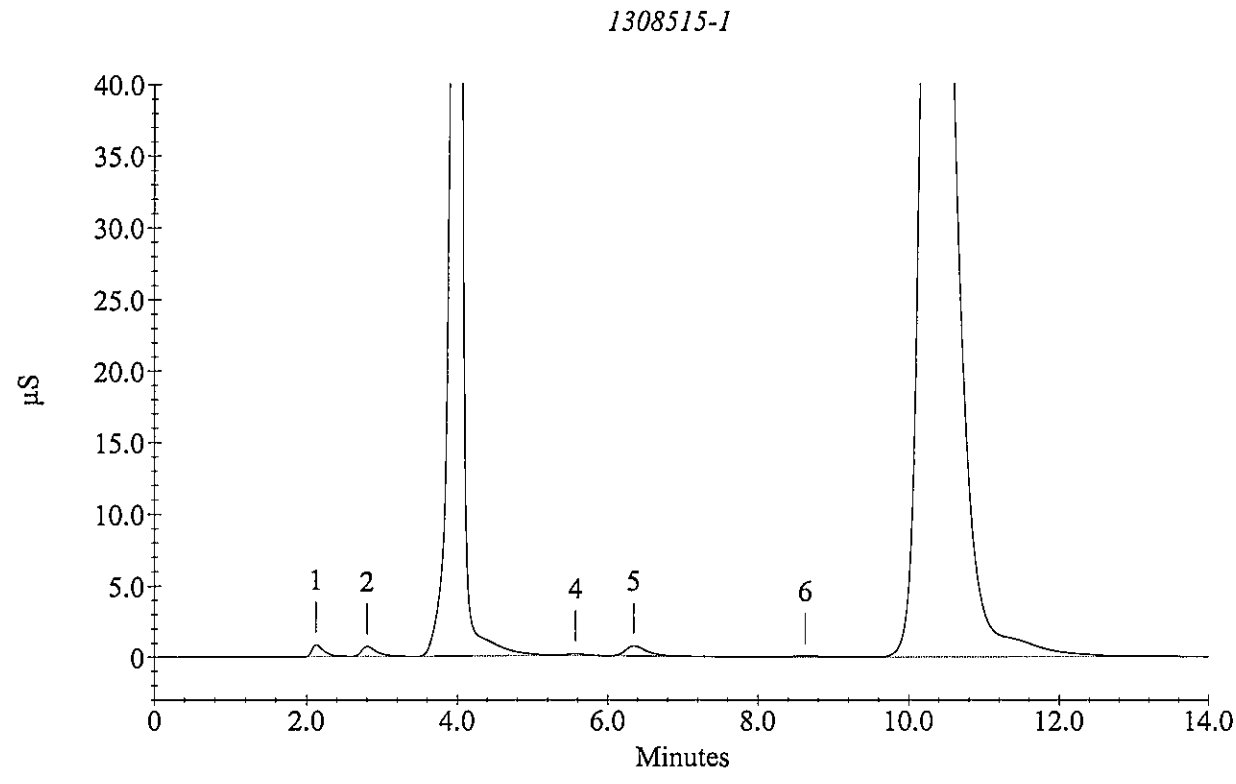
Sample Name : 1308515-1
Data File Name : c:\peaknet\data\130829ic1\130829_016.DXD

Method File Name : c:\peaknet\method\130814ic1a.met
Date, Time Analyzed : 8/29/13 12:21:10 PM
System Operator : AJD
Calibration Updated : 8/29/13 11:55:04 AM

Current Date : 8/29/13
Current Time : 12:35:11 PM
Datafile Updated : 8/29/13 12:35:11 PM

Peak Information : All Components

Peak Number	Analyte	Retention Time (min.)	Concentration (ug/L)	Limit Exceeded	Peak Area
2	Fluoride	2.80	530.3		97088
	Chloride				
	Nitrite as N				
4	Bromide	5.57	457.1		20474
5	Nitrate as N	6.35	529.9		149925
6	Orthophosphate as P	8.63	73.4	-	20075
7	Sulfate	10.32	164270.3	+	24873286
	Nitrate/Nitrite as N				



Sample Analysis Report

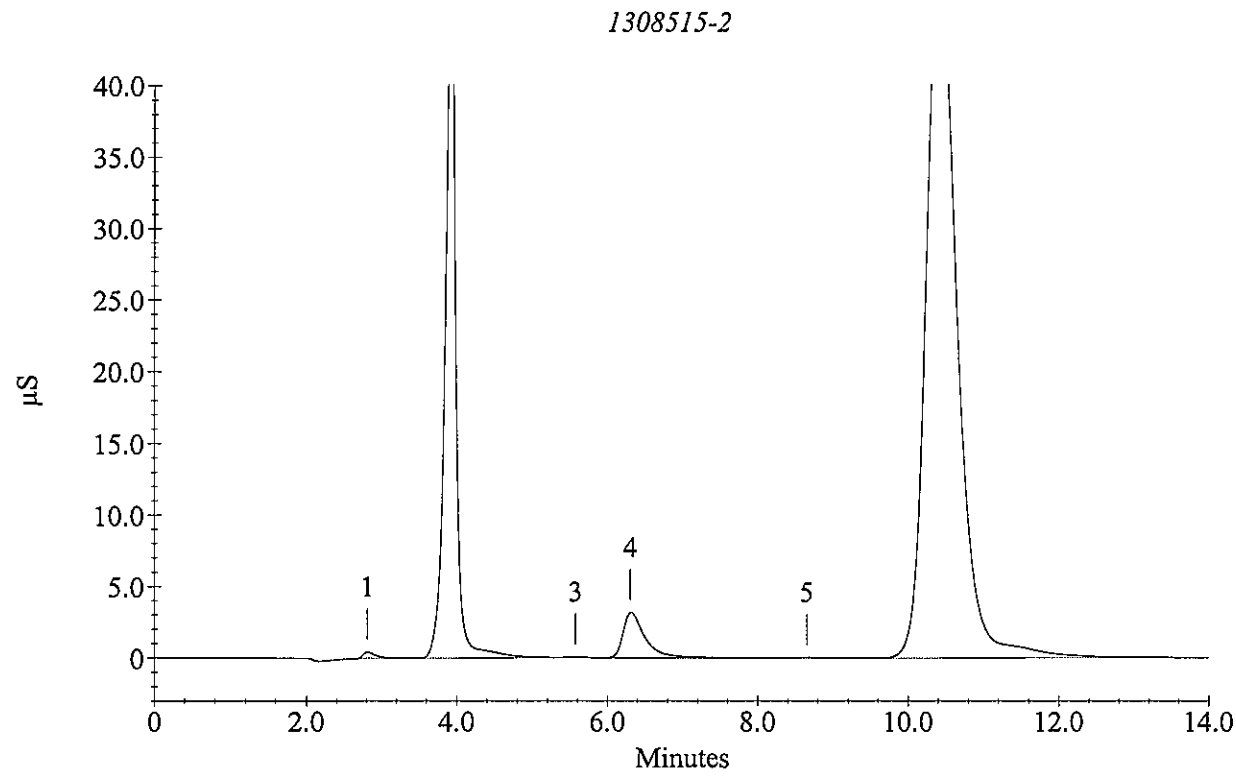
Sample Name : 1308515-2
Data File Name : c:\peaknet\data\130829ic1\130829_017.DXD

Method File Name : c:\peaknet\method\130814ic1a.met
Date, Time Analyzed : 8/29/13 12:35:13 PM
System Operator : AJD
Calibration Updated : 8/29/13 11:55:04 AM

Current Date : 8/29/13
Current Time : 12:49:15 PM
Datafile Updated : 8/29/13 12:49:14 PM

Peak Information : All Components

Peak Number	Analyte	Retention Time (min.)	Concentration (ug/L)	Limit Exceeded	Peak Area
1	Fluoride	2.81	300.2		52169
2	Chloride	3.92	28402.1	+	4740156
	Nitrite as N				
3	Bromide	5.57	212.1		8177
4	Nitrate as N	6.31	1935.3		650420
5	Orthophosphate as P	8.65	40.4	-	15511
6	Sulfate	10.40	107460.2	+	13978393
	Nitrate/Nitrite as N				



Sample Analysis Report

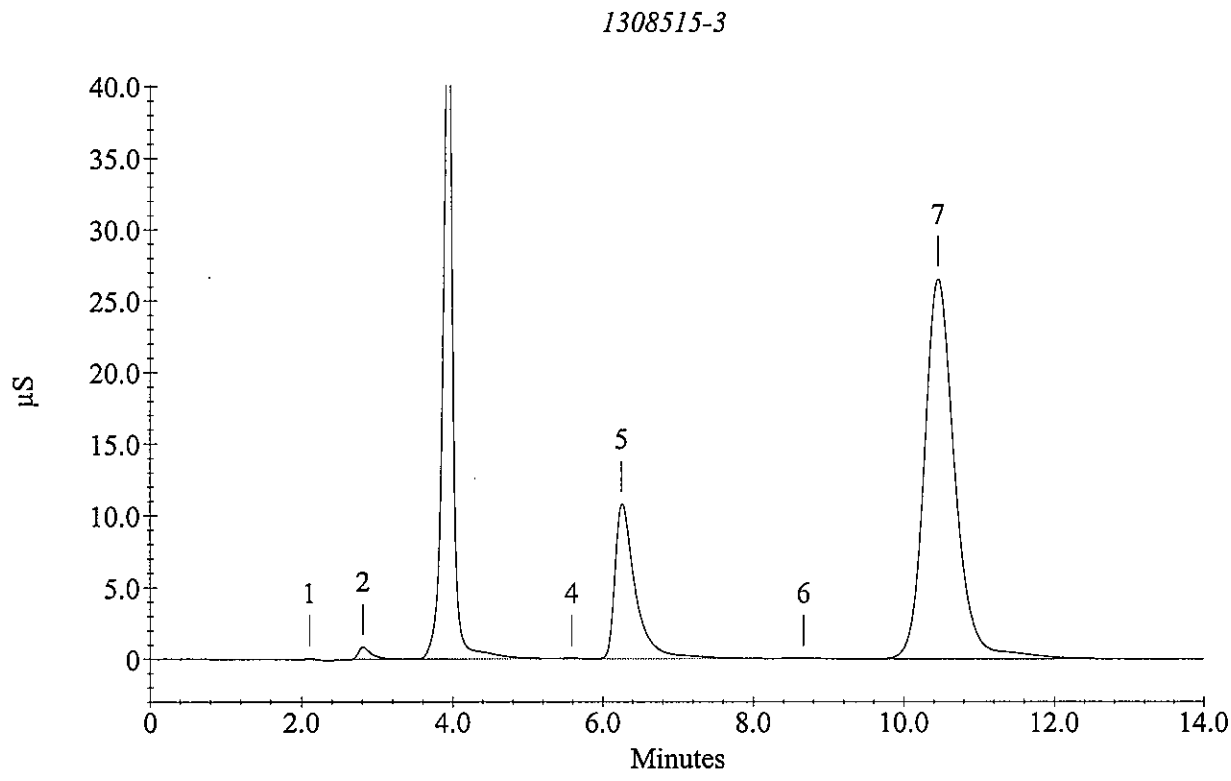
Sample Name : 1308515-3
Data File Name : c:\peaknet\data\130829ic1\130829_018.DXD

Method File Name : c:\peaknet\method\130814ic1a.met
Date, Time Analyzed : 8/29/13 12:49:17 PM
System Operator : AJD
Calibration Updated : 8/29/13 11:55:04 AM

Current Date : 8/29/13
Current Time : 1:03:18 PM
Datafile Updated : 8/29/13 1:03:18 PM

Peak Information : All Components

Peak Number	Analyte	Retention Time (min.)	Concentration (ug/L)	Limit Exceeded	Peak Area
2	Fluoride	2.81	566.0		104077
3	Chloride	3.93	26656.9	+	4356221
	Nitrite as N				
4	Bromide	5.59	149.9	-	5056
5	Nitrate as N	6.25	5715.4		2047817
6	Orthophosphate as P	8.67	-12.4	-	8225
7	Sulfate	10.45	62267.8		7450638
	Nitrate/Nitrite as N				



Sample Analysis Report

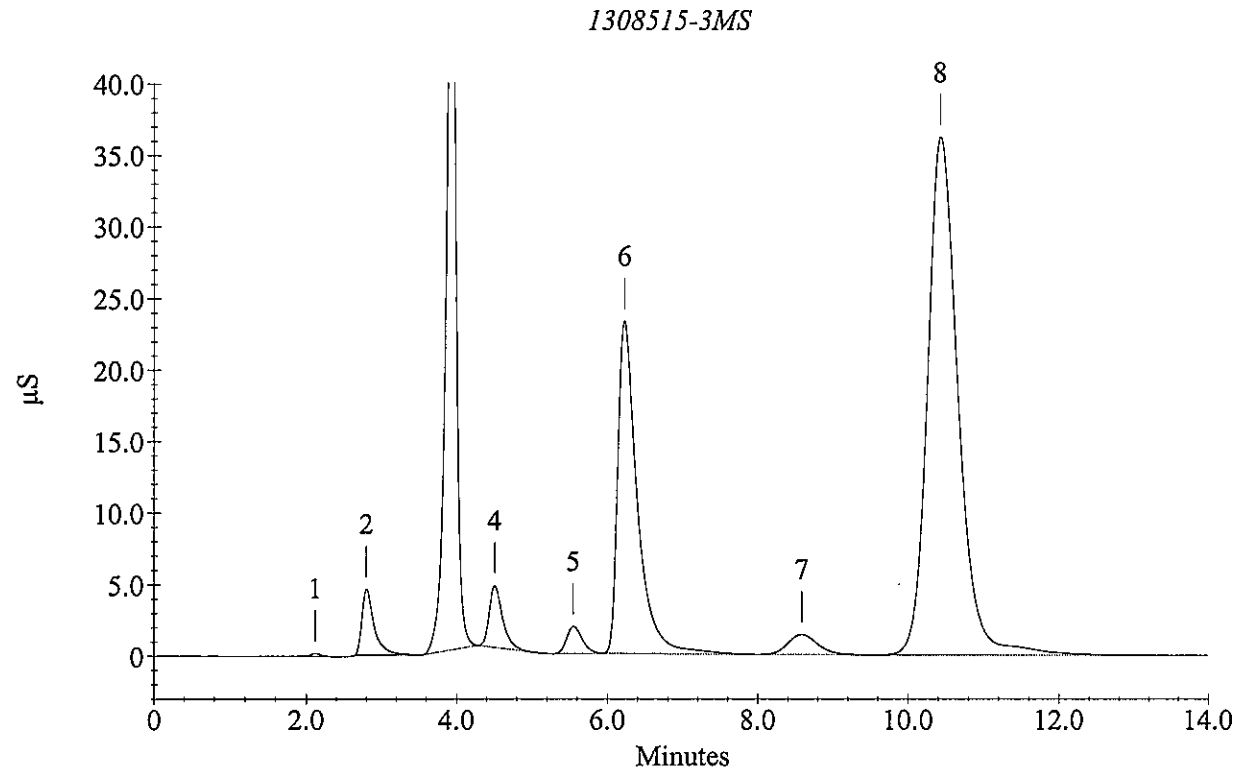
Sample Name : 1308515-3MS
Data File Name : c:\peaknet\data\130829ic1\130829_019.DXD

Method File Name : c:\peaknet\method\130814ic1a.met
Date, Time Analyzed : 8/29/13 1:03:20 PM
System Operator : AJD
Calibration Updated : 8/29/13 11:55:04 AM

Current Date : 8/29/13
Current Time : 1:17:22 PM
Datafile Updated : 8/29/13 1:17:21 PM

Peak Information : All Components

Peak Number	Analyte	Retention Time (min.)	Concentration (ug/L)	Limit Exceeded	Peak Area
2	Fluoride	2.80	2682.3		524713
3	Chloride	3.93	29364.7	+	4961726
4	Nitrite as N	4.51	1867.2		532825
5	Bromide	5.55	5376.8		271908
6	Nitrate as N	6.23	11088.0		4185484
7	Orthophosphate as P	8.59	2723.7		387419
8	Sulfate	10.43	81777.7		10122765
	Nitrate/Nitrite as N				



Sample Analysis Report

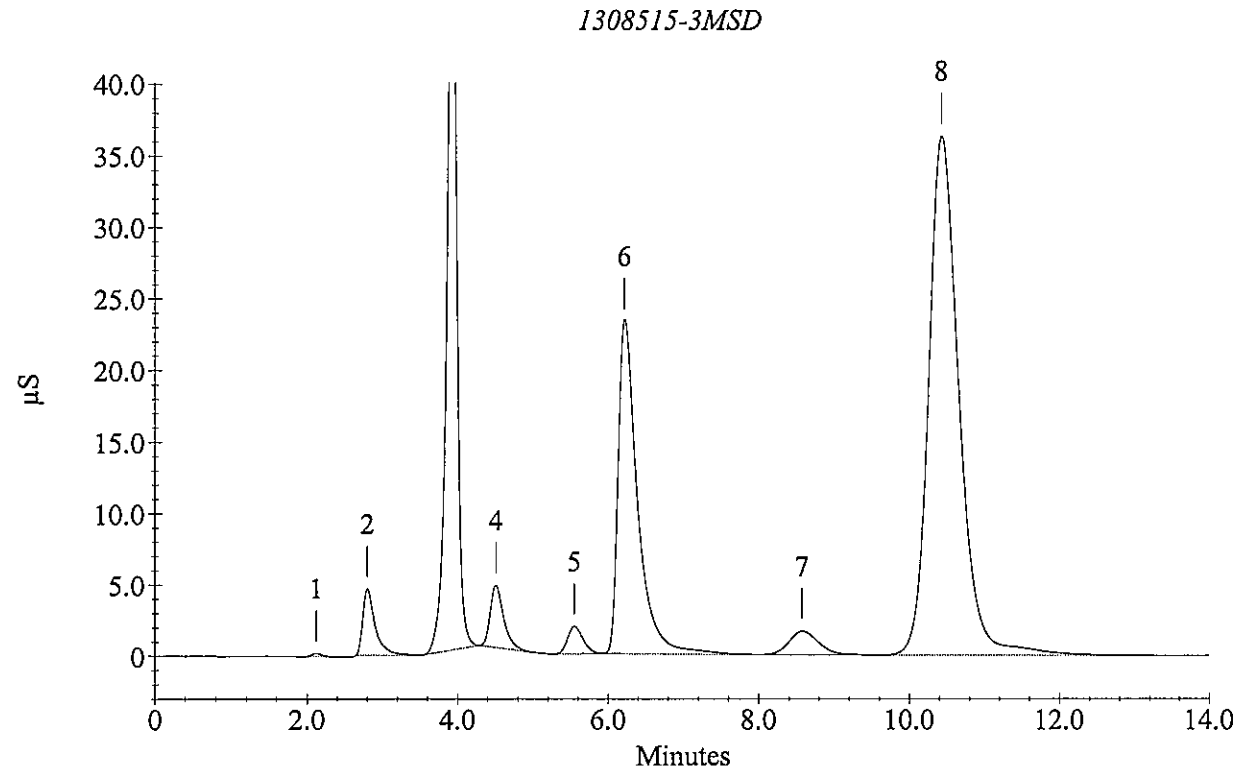
Sample Name : 1308515-3MSD
Data File Name : c:\peaknet\data\130829ic1\130829_020.DXD

Method File Name : c:\peaknet\method\130814ic1a.met
Date, Time Analyzed : 8/29/13 1:17:23 PM
System Operator : AJD
Calibration Updated : 8/29/13 11:55:04 AM

Current Date : 8/29/13
Current Time : 1:31:26 PM
Datafile Updated : 8/29/13 1:31:25 PM

Peak Information : All Components

Peak Number	Analyte	Retention Time (min.)	Concentration (ug/L)	Limit Exceeded	Peak Area
2	Fluoride	2.80	2712.8		530857
3	Chloride	3.93	29496.4	+	4992630
4	Nitrite as N	4.51	1884.4		537901
5	Bromide	5.55	5403.2		273281
6	Nitrate as N	6.21	11174.7		4221668
7	Orthophosphate as P	8.57	3174.5		450137
8	Sulfate	10.43	81974.5		10150740
	Nitrate/Nitrite as N				



Sample Analysis Report

Sample Name : 1308515-1 20x
Data File Name : c:\peaknet\data\130829ic1\130829_021.DXD

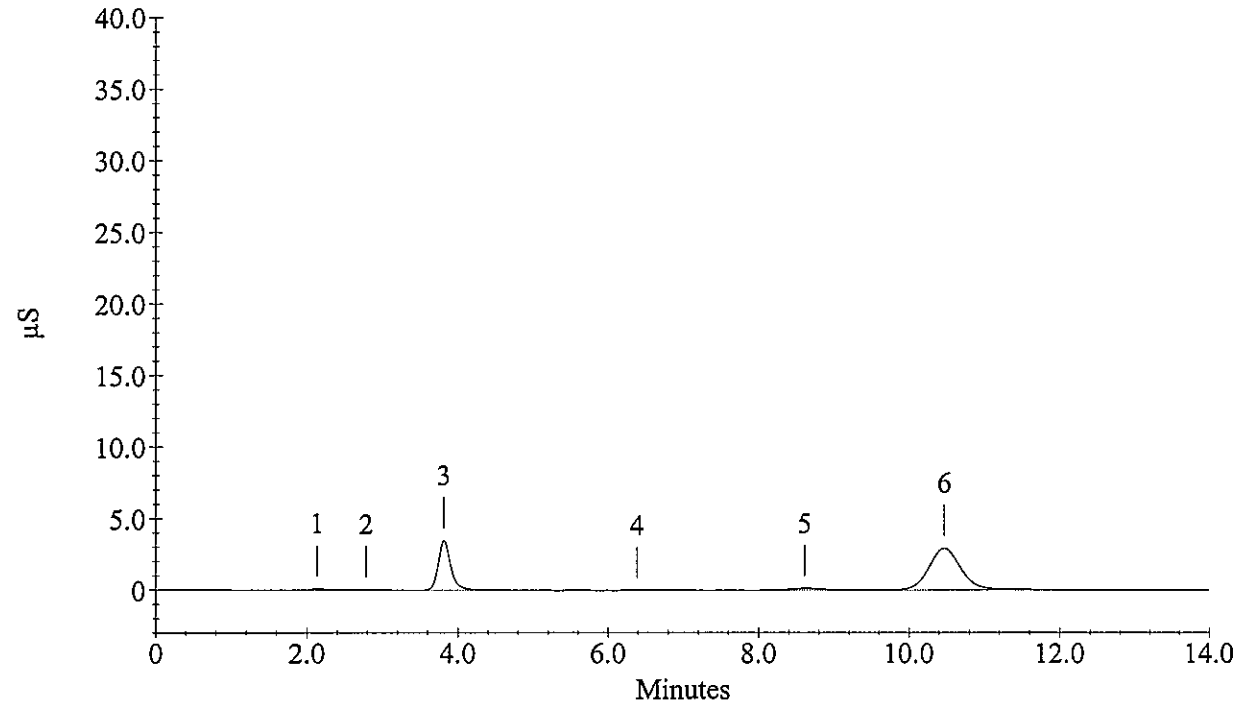
Method File Name : c:\peaknet\method\130814ic1a.met
Date, Time Analyzed : 8/29/13 1:31:28 PM
System Operator : AJD
Calibration Updated : 8/29/13 11:55:04 AM

Current Date : 8/29/13
Current Time : 1:45:30 PM
Datafile Updated : 8/29/13 1:45:29 PM

Peak Information : All Components

Peak Number	Analyte	Retention Time (min.)	Concentration (ug/L)	Limit Exceeded	Peak Area
2	Fluoride	2.79	57.4	-	4914
3	Chloride	3.81	3080.9		412785
	Nitrite as N				
	Bromide				
4	Nitrate as N	6.39	118.3	-	5168
5	Orthophosphate as P	8.61	197.9	-	37272
6	Sulfate	10.47	8291.6		874788
	Nitrate/Nitrite as N				

1308515-1 20x



Sample Analysis Report

Sample Name : 1308515-2 5x
Data File Name : c:\peaknet\data\130829ic1\130829_022.DXD

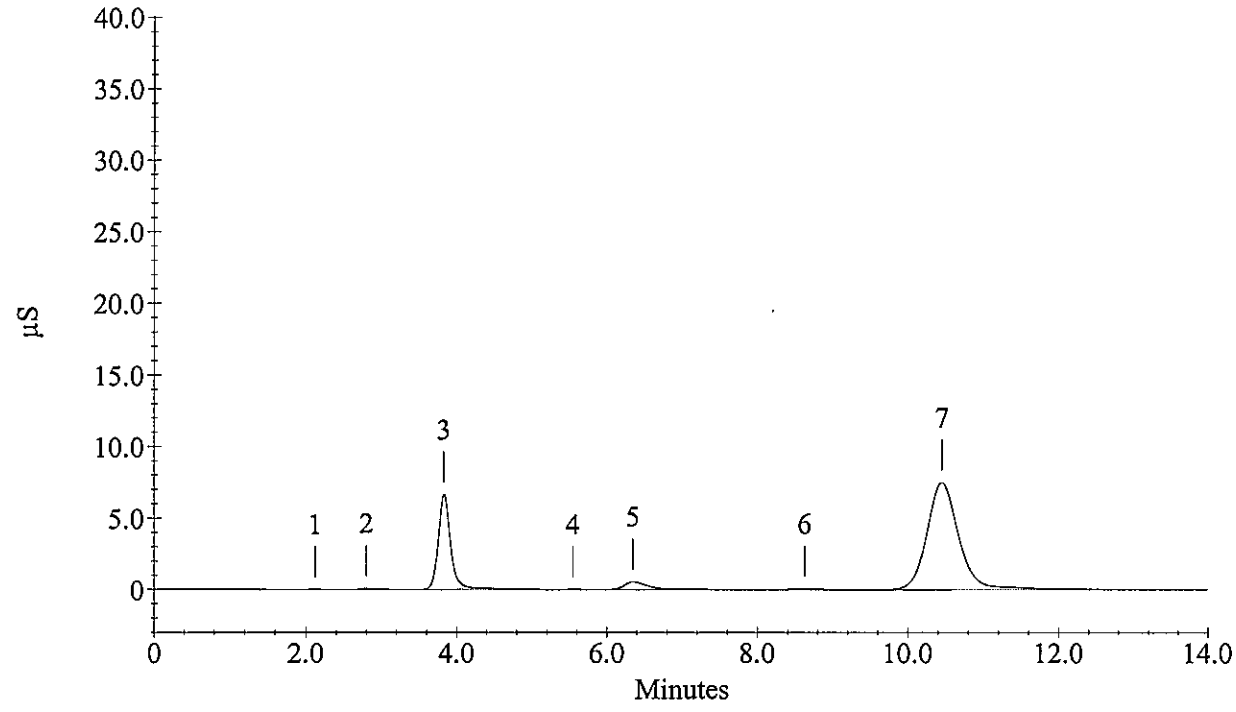
Method File Name : c:\peaknet\method\130814ic1a.met
Date, Time Analyzed : 8/29/13 1:45:32 PM
System Operator : AJD
Calibration Updated : 8/29/13 11:55:04 AM

Current Date : 8/29/13
Current Time : 1:59:33 PM
Datafile Updated : 8/29/13 1:59:33 PM

Peak Information : All Components

Peak Number	Analyte	Retention Time (min.)	Concentration (ug/L)	Limit Exceeded	Peak Area
2	Fluoride	2.80	77.5	-	8820
3	Chloride	3.83	5590.8		762911
	Nitrite as N				
4	Bromide	5.55	73.4	-	1225
5	Nitrate as N	6.35	428.6		114207
6	Orthophosphate as P	8.63	60.9	-	18350
7	Sulfate	10.45	19787.0		2192476
	Nitrate/Nitrite as N				

1308515-2 5x



Sample Analysis Report

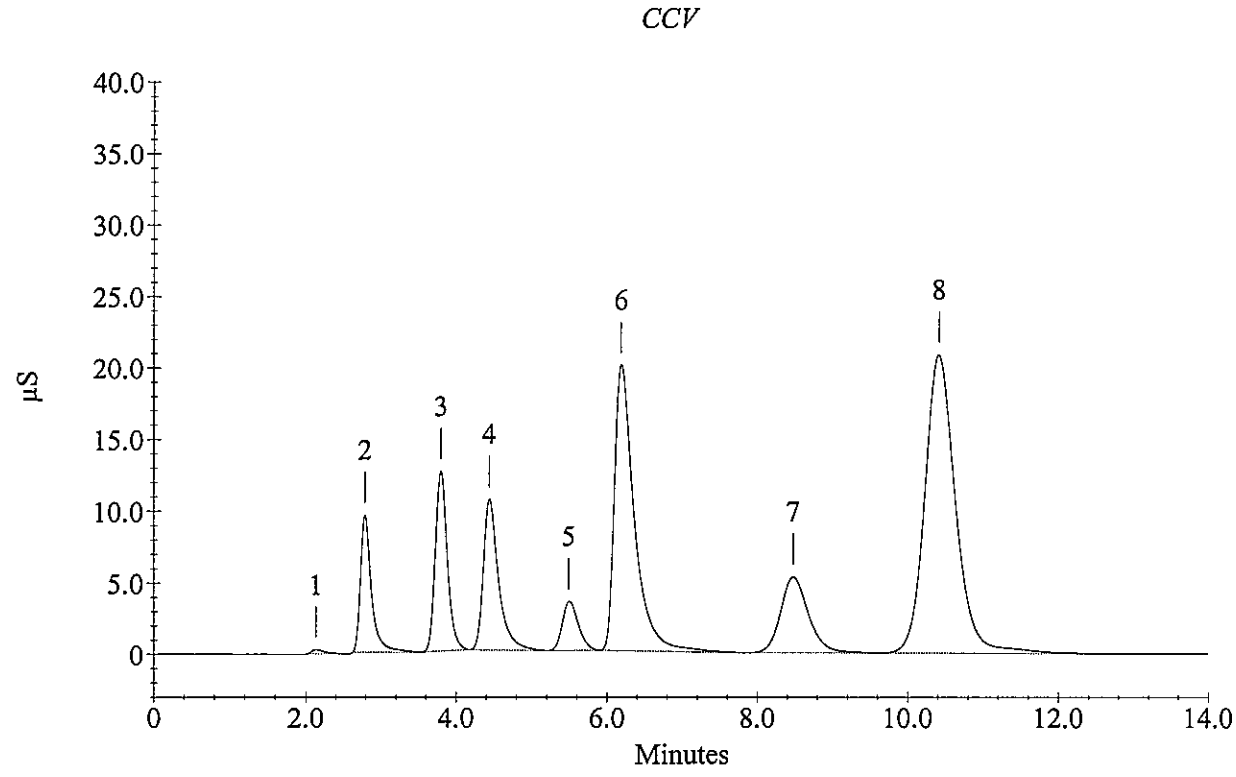
Sample Name : CCV
Data File Name : c:\peaknet\data\130829ic1\130829_023.DXD

Method File Name : c:\peaknet\method\130814ic1a.met
Date, Time Analyzed : 8/29/13 1:59:35 PM
System Operator : AJD
Calibration Updated : 8/29/13 11:55:04 AM

Current Date : 8/29/13
Current Time : 2:13:37 PM
Datafile Updated : 8/29/13 2:13:36 PM

Peak Information : All Components

Peak Number	Analyte	Retention Time (min.)	Concentration (ug/L)	Limit Exceeded	Peak Area
2	Fluoride	2.79	4866.8		973360
3	Chloride	3.80	9926.0		1396452
4	Nitrite as N	4.44	5002.7		1486418
5	Bromide	5.49	9857.3		508858
6	Nitrate as N	6.19	9878.3		3686503
7	Orthophosphate as P	8.48	9754.1		1373368
8	Sulfate	10.41	50491.2		5923798
	Nitrate/Nitrite as N				



Sample Analysis Report

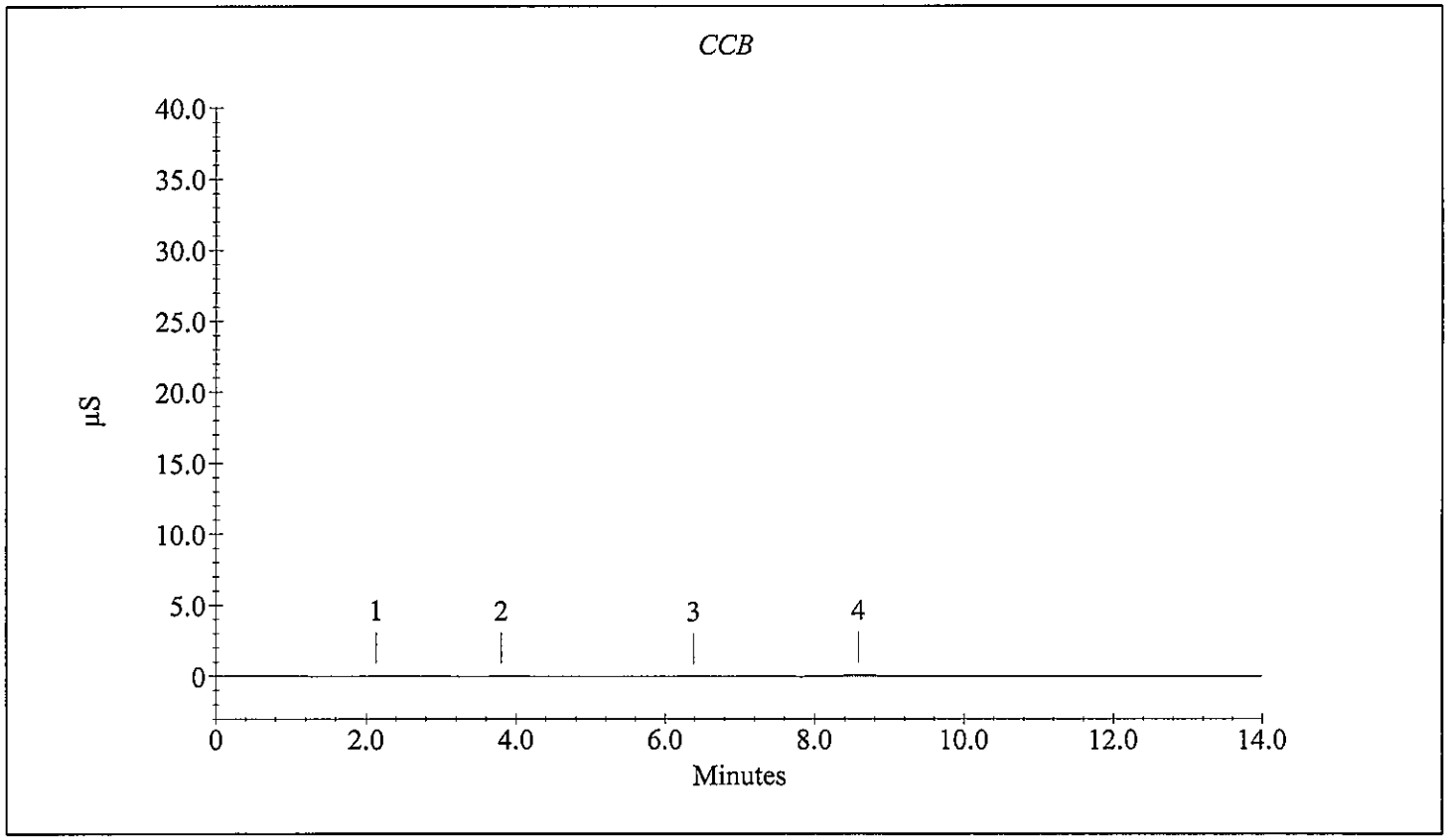
Sample Name : CCB
Data File Name : c:\peaknet\data\130829ic1\130829_024.DXD

Method File Name : c:\peaknet\method\130814ic1a.met
Date, Time Analyzed : 8/29/13 2:13:39 PM
System Operator : AJD
Calibration Updated : 8/29/13 11:55:04 AM

Current Date : 8/29/13
Current Time : 2:27:41 PM
Datafile Updated : 8/29/13 2:27:40 PM

Peak Information : All Components

Peak Number	Analyte	Retention Time (min.)	Concentration (ug/L)	Limit Exceeded	Peak Area
1		2.13	0.0		8478
2	Chloride Nitrite as N Bromide	3.80	58.6	-	5446
3	Nitrate as N	6.39	110.7	-	2477
4	Orthophosphate as P Sulfate Nitrate/Nitrite as N	8.59	174.4	-	34033



Sample Analysis Report

Sample Name : 1308515-3 10x
Data File Name : c:\peaknet\data\130829ic1\130829_025.DXD

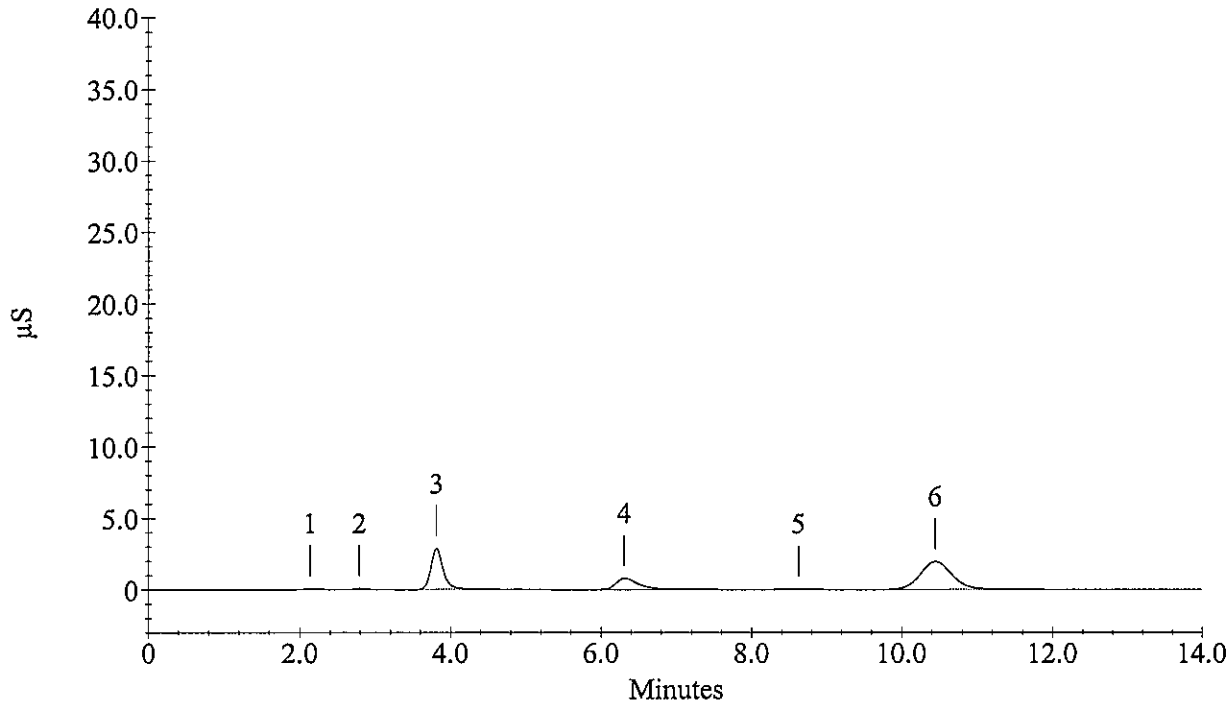
Method File Name : c:\peaknet\method\130814ic1a.met
Date, Time Analyzed : 8/29/13 2:27:43 PM
System Operator : AJD
Calibration Updated : 8/29/13 11:55:04 AM

Current Date : 8/29/13
Current Time : 2:41:44 PM
Datafile Updated : 8/29/13 2:41:44 PM

Peak Information : All Components

Peak Number	Analyte	Retention Time (min.)	Concentration (ug/L)	Limit Exceeded	Peak Area
2	Fluoride	2.79	78.8	-	9071
3	Chloride	3.81	2384.6		317610
	Nitrite as N				
	Bromide				
4	Nitrate as N	6.31	590.4		171278
5	Orthophosphate as P	8.63	60.9	-	18340
6	Sulfate	10.44	5626.8		574795
	Nitrate/Nitrite as N				

1308515-3 10x



Sample Analysis Report

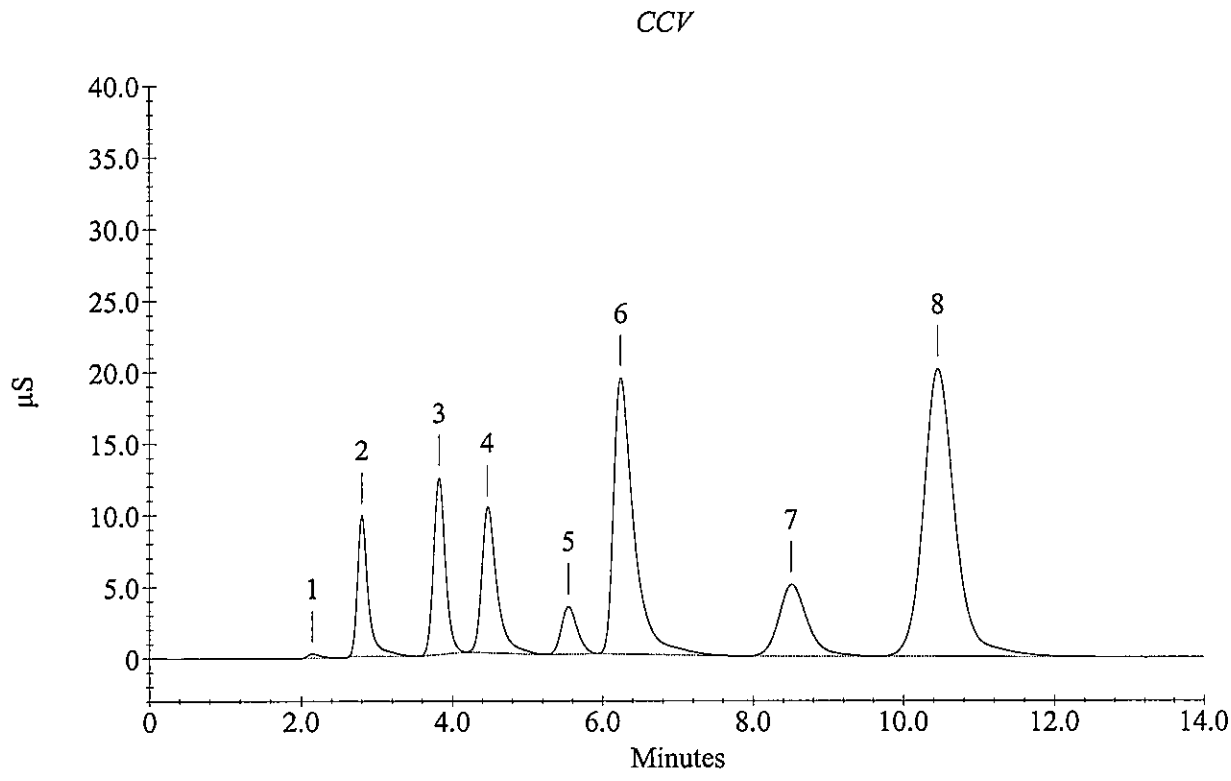
Sample Name : CCV
Data File Name : c:\peaknet\data\130829ic1\130829_035.DXD

Method File Name : c:\peaknet\method\130814ic1a.met
Date, Time Analyzed : 8/29/13 4:48:17 PM
System Operator : AJD
Calibration Updated : 8/29/13 11:55:04 AM

Current Date : 8/29/13
Current Time : 5:02:18 PM
Datafile Updated : 8/29/13 5:02:18 PM

Peak Information : All Components

Peak Number	Analyte	Retention Time (min.)	Concentration (ug/L)	Limit Exceeded	Peak Area
2	Fluoride	2.80	4874.7		975025
3	Chloride	3.83	9611.6		1349163
4	Nitrite as N	4.47	4845.1		1436895
5	Bromide	5.55	9512.0		490311
6	Nitrate as N	6.24	9725.8		3624406
7	Orthophosphate as P	8.51	9428.3		1327294
8	Sulfate	10.45	49716.3		5825365
	Nitrate/Nitrite as N				



Sample Analysis Report

Sample Name : CCB
Data File Name : c:\peaknet\data\130829ic1\130829_036.DXD

Method File Name : c:\peaknet\method\130814ic1a.met
Date, Time Analyzed : 8/29/13 5:02:20 PM
System Operator : AJD
Calibration Updated : 8/29/13 11:55:04 AM

Current Date : 8/29/13
Current Time : 5:16:22 PM
Datafile Updated : 8/29/13 5:16:21 PM

Peak Information : All Components

Peak Number	Analyte	Retention Time (min.)	Concentration (ug/L)	Limit Exceeded	Peak Area
1		2.15	0.0		7006
3	Chloride Nitrite as N Bromide Nitrate as N	3.85	37.8	-	2692
4	Orthophosphate as P Sulfate Nitrate/Nitrite as N	8.61	191.8	-	36428