SOUTHWEST RESEARCH INSTITUTE
NUCLEAR PROJECT
CLIENT: Division 20
TASK ORDER: 061213-4
SRR: 30159
SDG: 290969
CASE: CNWRA
VTSR: December 12, 2006
PROJECT#: 06002.01.322

FINAL REPORT

SOUTHWEST RESEARCH INSTITUTE

SAMPLE ANALYSIS DATA SHEET

010002

Lab Name: Southwest Research Institute

Client: Division 20

Lab Code: SwRI

Date Received: 12/12/06

Matrix: Liquid

Project No.: 06002.01.322

Task Order: 061213-4

SRR: 30159

Date Analyzed: 01/02/07

Method: SW846 6010B		
Client ID	Lab Sample ID	Sodium Result (mg/L)
Prep Blank	-----	<0.250
Lab Control	-----	19.4
True Value	-----	20.0
Recovery	-----	97.0%
Cond. #15 (130 ^{0}C)	290969	3.12
Duplicate result	290969D	2.95
RPD	-----	5.6%
Cond. #16 (130 ^{0}C)	290970	2.67
Spike result	290970S	41.2
Spike added	-----	40.0
Recovery	-----	96.3%

Reporting Limit: 0.250 mg/L

SOUTHWEST RESEARCH INSTITUTE

SAMPLE ANALYSIS DATA SHEET 010003

Sample ID

Cond. #15 (130 ^{0}C)

Lab Name: Southwest Research Institute

Client: Division 20

Lab Code: SwRI

Date Received: 12/12/06

Matrix: Liquid

Project No.: 06002.01.322

Lab System ID: 290969

SRR: 30159

Date Analyzed : 01/24/07

Task Order: 061213-4

Analysis	Sample Result	Reporting Limit	Units	Method
Bromide	<0.1	0.1	mg/L	EPA 300
Chloride	4.39	0.1	mg/L	EPA 300
Fluoride	<0.1	0.1	mg/L	EPA 300
Nitrate-N	2.19	0.1	mg/L	EPA 300
Nitrite-N	<0.1	0.1	mg/L	EPA 300
Phosphate-P	<0.1	0.1	mg/L	EPA 300
Sulfate	<0.1	0.1	mg/L	EPA 300

SOUTHWEST RESEARCH INSTITUTE

SAMPLE ANALYSIS DATA SHEET

010004

Sample ID

Cond. #16 (130 ^{0}C)

Lab Name: Southwest Research Institute

Client: Division 20

Lab Code: SwRI

Date Received: 12/12/06

Matrix: Liquid

Project No.: 06002.01.322

Lab System ID: 290970

SRR: 30159

Date Analyzed : 01/24/07

Task Order: 061213-4

Analysis	Sample Result	Reporting Limit	Units	Method
Bromide	<0.1	0.1	mg/L	EPA 300
Chloride	4.60	0.1	mg/L	EPA 300
Fluoride	<0.1	0.1	mg/L	EPA 300
Nitrate-N	2.28	0.1	mg/L	EPA 300
Nitrite-N	<0.1	0.1	mg/L	EPA 300
Phosphate-P	<0.1	0.1	mg/L	EPA 300
Sulfate	0.124	0.1	mg/L	EPA 300

SOUTHWEST RESEARCH INSTITUTE

DUPLICATE SUMMARY

010005

Sample ID
Cond. #16 (130 °C)

Lab Name: Southwest Research Institute

Client: Division 20

Lab Code: SwRI

Date Received: 12/12/06

Matrix: Liquid

Project No.: 06002.01.322

Lab System ID: 290970D

SRR: 30159

Task Order: 061213-4

Method: IC - EPA 300			
Analysis	Orig. Sample Result (mg/L)	Duplicate Result (mg/L)	RPD
Bromide	<0.1	<0.1	0.00%
Chloride	4.60	4.55	1.09%
Fluoride	<0.1	<0.1	0.00%
Nitrate-N	2.28	2.31	1.31%
Nitrite-N	<0.1	<0.1	0.00%
Phosphate-P	<0.1	<0.1	0.00%
Sulfate	0.124	0.110	12.0%

SOUTHWEST RESEARCH INSTITUTE

MATRIX SPIKE SUMMARY

010006

Sample ID

Cond. #16 (130 °C)

Lab Name: Southwest Research Institute

Client: Division 20

Lab Code: SwRI

Date Received: 12/12/06

Matrix: Liquid

Project No.: 06002.01.322

Lab System ID: 290970S

SRR: 30159

Task Order: 061213-4

Method: IC - EPA 300				
Analysis	Orig. Sample Result (mg/L)	Spike Result (mg/L)	Spike Added (mg/L)	Recovery
Bromide	<0.1	3.89	4.00	97.3%
Chloride	4.60	6.35	2.00	87.5%
Fluoride	<0.1	1.01	1.00	101.0%
Nitrate-N	2.28	3.16	0.904	97.3%
Nitrite-N	<0.1	1.10	1.18	93.2%
Phosphate-P	<0.1	1.81	1.96	92.3%
Sulfate	0.124	4.11	4.00	99.7%

SOUTHWEST RESEARCH INSTITUTE

LABORATORY CONTROL SAMPLE 010007

Sample ID
LCS

Lab Name: Southwest Research Institute

Client: Division 20

Lab Code: SwRI

Date Received: NA

Matrix: Liquid

Project No.: 06002.01.322

Lab System ID: NA

SRR: 30159

Task Order: 061213-4

Analysis	Sample Result	True Value	Recovery	Units
Bromide	402	400	101%	mg/L
Chloride	204	200	102%	mg/L
Fluoride	101	100	101%	mg/L
Nitrate-N	90.8	90.4	100%	mg/L
Nitrite-N	120	118	102%	mg/L
Phosphate-P	192	196	98.0%	mg/L
Sulfate	404	400	101%	mg/L

NA- Not applicable

SOUTHWEST RESEARCH INSTITUTE

BLANK SUMMARY

010008

Sample ID
PB

Lab Name: Southwest Research Institute

Client: Division 20

Lab Code: SwRI

Date Received: NA

Matrix: Liquid

Project No.: 06002.01.322

Lab System ID: NA

SRR: 30159

Task Order: 061213-4

Analysis	Sample Result	Reporting Limit	Units
Bromide	<0.1	0.1	mg/L
Chloride	<0.1	0.1	mg/L
Fluoride	<0.1	0.1	mg/L
Nitrate-N	<0.1	0.1	mg/L
Nitrite-N	<0.1	0.1	mg/L
Phosphate-P	<0.1	0.1	mg/L
Sulfate	<0.1	0.1	mg/L

NA- Not applicable

010009

SOUTHWEST RESEARCH INSTITUTE
NUCLEAR PROJECT
CLIENT: Division 20
TASK ORDER: 061213-4
SRR: 30159
SDG: 290969
CASE: CNWRA
VTSR: December 12, 2006
PROJECT#: 06002.01.322

Task Orders/01-QPP-015

Southwest Research Institute

Laboratory Task Order

TO #: 061213-4 Revision: 0

010010

SDG: 290969
VTSR: 12/12/06
CASE: YANG

SRR #'s: 30159
Client(s): Div. 20

Project(s): 06002.01.322
Manager(s): SPIES, RADONNA
To PM: 12/29/06
To QA: 12/29/06
To Client: 01/09/07

Instructions

DIVISION 20 - CNWRA.
TWO samples (2 containers) received overall on 12/12/06 for IC and ICP.
SEE CHAIN OF CUSTODY TO VERIFY ACTUAL ANALYTES REQUIRED.
Point of Contact is Lietai Yang, lietai.yang@swri.org, (x2483).
Email excel and PDF forms to client. Send forms only, archive all.

Documents Related to this task order: 27360[COC for SRR 30159]

Deliverables --> Hard Copy: -YES- EDD: no PDF: no

Test: DIL-DILUTION
Section: METALPREP
Holding: 28 days from CED
Prep, Dilution
Cnt: 2

System ID	Type	Cont	Matrix	Customer ID	CED	Method Date
290969		1	Liquid	Cond. #15 (130°C)	01 Dec 06	29 Dec 06
290970		1	Liquid	Cond. #16 (130°C)	11 Dec 06	08 Jan 07

Test: IC-SWRI
Section: WETCHEM
Holding: 28 days from CED
Ion Chromatography by SwRI Method
Cnt: 2

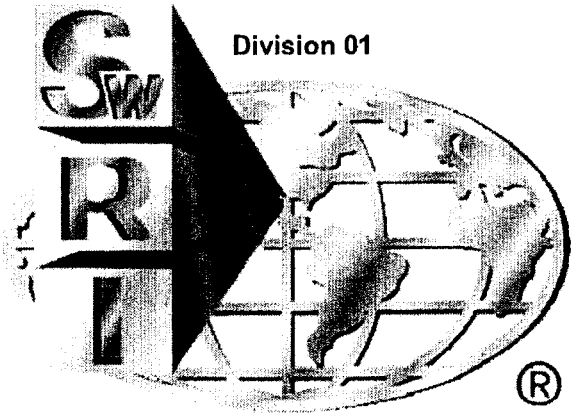
System ID	Type	Cont	Matrix	Customer ID	CED	Method Date
290969		1	Liquid	Cond. #15 (130°C)	01 Dec 06	29 Dec 06
290970		1	Liquid	Cond. #16 (130°C)	11 Dec 06	08 Jan 07

Test: ICP-SWRI
Section: METALS
Holding: 180 days from CED
ICP Analysis by SwRI Method
Cnt: 2

System ID	Type	Cont	Matrix	Customer ID	CED	Method Date
290969		1	Liquid	Cond. #15 (130°C)	01 Dec 06	30 May 07
290970		1	Liquid	Cond. #16 (130°C)	11 Dec 06	09 Jun 07

01-QPP-015 010011
Division 01
Revision 5
June 2004

Document No. 3



Chemistry and Chemical
Engineering Division

QUALITY PROJECT PLAN FOR

PERFORMANCE OF CHEMICAL ANALYSES FOR COMMERCIAL NUCLEAR POWER PLANTS WITHIN THE DEPARTMENT OF ANALYTICAL AND ENVIRONMENTAL CHEMISTRY

SOUTHWEST RESEARCH INSTITUTE
Chemistry and Chemical Engineering Division
6220 CULEBRA ROAD, SAN ANTONIO, TEXAS 78238

QUALITY PROJECT PLAN FOR PERFORMANCE OF CHEMICAL ANALYSES FOR COMMERCIAL NUCLEAR POWER PLANTS WITHIN THE DEPARTMENT OF ANALYTICAL AND ENVIONMENTAL CHEMISTRY

SwRI AUTHORIZATION SIGNATORIES

This is to certify that this Quality Project Plan of Southwest Research Institute (SwRI) has been reviewed and approved by the following personnel:

JO ANN BOYD (210) 522-2169 — **DATE** 6/4/04
Quality Assurance Manager

REZA KARIMI (210) 522-2412 — **DATE** 6/4/04
Director, Department of Analytical and Environmental Chemistry

MICHAEL G. MACNAUGHTON (210) 522-5162 — **DATE** 6/4/04
Vice President, Chemistry and Chemical Engineering Division

CHRISTOPHER HOBSON (210) 522-5838 — **DATE** 6/4/2004
Quality Assurance Engineer

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PERFORMANCE OF CHEMICAL ANALYSES FOR COMMERCIAL NUCLEAR POWER PLANTS WITHIN THE DEPARTMENT OF ANALYTICAL AND ENVIRONMENTAL CHEMISTRY

1.0 INTRODUCTION

This Quality Project Plan (QPP) defines the Quality Assurance (QA) program requirements for personnel providing the chemical analyses for commercial nuclear power plants. Southwest Research Institute (SwRI) ***Program Quality Plan (PQP-Nuclear)**, Nuclear Services* shall implement the QA requirements. Project activities controlled by the PQP-Nuclear shall be accomplished as specified by the appropriate sections of **01-QAP-004**, *Quality Assurance Plan for Analytical and Environmental Services* and/or nationally recognized testing methods as specified on individual purchase orders. This QPP shall be applied to all projects initiated for nuclear utilities in the Department of Analytical and Environmental Chemistry. If, as a result of complexity, duration, or other factors, it is determined that a unique, project-specific quality plan is required, the project QAE shall notify the Project Manager and a project-specific quality plan shall be generated in accordance with **SOP-01-4.2.1**, *Preparation and Revision of Documented Procedures.*

2.0 SCOPE

This Quality Project Plan shall be applied to the chemical analyses performed for commercial nuclear power plants by the Department of Analytical and Environmental Chemistry within the Chemistry and Chemical Engineering Division. Although the majority of the work performed for nuclear facilities resides within the Department of Analytical and Environmental Chemistry, other departments within the division may utilize this Quality Project Plan as deemed necessary when nuclear projects are conducted.

3.0 REFERENCES

3.1 *SwRI Quality System Manual – 2000*

3.2 *10 CFR 50, Appendix B, ASME NQA-1*

3.3 *SwRI Program Quality Plan (PQP-Nuclear), Nuclear Services*

3.4 01-QAP-004, *Quality Assurance Plan for Analytical and Environmental Services*

4.0 APPLICABLE SECTIONS OF SwRI PROGRAM QUALITY PLAN (PQP-NUCLEAR)

4.1 Indoctrination and Training

4.1.1 Personnel performing duties affecting quality shall receive quality training to the *SwRI Program Quality Plan (PQP-Nuclear), Nuclear Services* prior to performing any work on projects for nuclear utilities. This training will be conducted either by Institute Quality Systems (IQS) or Division 01 Quality Assurance personnel and documentation shall be evident in the personnel training files maintained in Division

01 Quality Assurance.

4.1.2 Indoctrination and training of personnel shall be conducted in accordance with **SOP-01-6.2.1**, *Qualification and Training*.

4.2 Qualification of Personnel

4.2.1 Testing personnel shall be designated as qualified to perform applicable project activities as specified in **SOP-01-6.2.1**, *Qualification and Training*.

4.2.2 During the performance of each testing process, testing personnel shall have access to the necessary documented procedures, i.e., QPP, QAP, Task Order, Division Quality System Standard Operating Procedures (SOPs), and applicable test/analytical procedures (TAPs) available for ready reference.

4.2.3 Any person who has not performed testing activities associated with any particular method being used for nuclear utilities projects for a period of one year shall be reevaluated prior to the conduct of the test.

4.2.4 Quality Assurance personnel witnessing the testing process for nuclear utilities shall have documented evidence of qualifications maintained by Institute Quality Systems or Division 01 Quality Assurance.

4.3 Design Control

Not applicable to activities conducted within the Department of Analytical and Environmental Chemistry.

4.4 Right of Access

4.4.1 Procurement documents shall provide for access to the suppliers' facilities and records for surveillance, inspection, or audit by SwRI and clients.

4.4.2 Where appropriate, quality clause **Q32** shall be noted on the procurement documents to indicate that right of access for inspection and surveillance of activities associated with the order shall be afforded to SwRI and clients.

4.5 Control of Supplier-Generated Documents

4.5.1 Client documents shall be controlled in accordance with **SOP-01-4.2.1**, *Preparation and Revision of Documented Procedures*. These procedures provide the requirements for the preparation, review, approval, issue, distribution, and revision of documents controlled by the Chemistry and Chemical Engineering Division.

4.5.2 Documents may be controlled as Plans or Work Instructions and shall be accessible through the Division Intranet link, ***Contract Requirements*** as PDF files.

4.5.3 Nationally recognized test methods shall be of the most current issue or as specified in the purchase order. Task orders shall identify the applicable test methods to be used on the nuclear project.

4.6 Acceptance of Services Only

Not applicable to activities conducted within the Department of Analytical and Environmental Chemistry.

4.7 Commercial Grade Items

4.7.1 Where an item is to be incorporated into a test or deliverable to a client, and that item is not subject to design or specification requirements that are unique to nuclear facilities, used in applications other then nuclear facilities, and procured from the supplier on the specifications set forth in the manufacturers' published product and description, the item shall be considered "commercial grade".

4.7.2 Chemical reagents and standards used for testing purposes shall be ordered to specific chemical grades and certificates of analysis shall be required with each lot.

4.7.3 Controls for procurement planning, supplier selection, supplier performance evaluation, and acceptance of procured items and services other than chemical reagents and standards shall be as identified in **SOP-01-7.4.1**, *Purchasing*, and any referenced document within that procedure.

4.7.4 Receipt inspection of chemical reagents, standards, and test items for use on nuclear safety-related projects shall be performed by department personnel and documented on the *SwRI Receipt Traveler* or **FRM-109**, *Item Receipt Report*, as specified in **SOP-01-8.2.4**, *Monitoring and Measurement*. Any discrepancy such as a damaged container or container label shall be documented on the form and the client shall be contacted for disposition.

4.7.5 Prior or acceptance of a commercial grade item, the receipt inspection shall determine the following:

(a) Damage was not sustained during shipment;

(b) The item has satisfied the specified acceptance criteria; and

(c) Specified documentation, as applicable to the item, was received and is acceptable.

4.7.6 Receipt inspection of chemical reagents and standards shall also consist of verification of chemical type, grade, container integrity, certificate of analysis, and shelf life, where applicable. Upon acceptance of chemical reagents and standards, the containers shall be labeled with the following:

(a) Chemical name;

(b) Chemical grade;

(c) Lot code;

(d) Date received; and

(e) Shelf life, when applicable.

4.7.7 Expired shelf life items shall not be used for testing purposes.

4.7.8 Lot codes of chemical reagents and standards used during equipment standardization and testing shall be recorded on the individual testing data sheets to provide traceability.

4.7.9 Samples supplied to SwRI for testing shall be received by the Sample Custodian and logged into the laboratory logbook. Sample documentation and sample custody shall be maintained in accordance with **TAP-01-0407-001**, *Sample Receipt Inspection*, and **TAP-01-0407-035**, *Organic and Inorganic Sample Security*.

4.7.10 Samples supplied to SwRI for testing shall be labeled with the following:

(a) Sample control number;

(b) Purchase order number;

(c) Purchase order line item number, as applicable;

(d) Task order number;

(e) Nuclear QA label; and

(f) Sample retention date, when applicable.

4.7.11 In the event that samples are damaged upon receipt, a ***Sample Discrepancy Record*** shall be generated from the Division Intranet.

4.7.12 The testing task order shall list the project number, tests required, test methods required, and shall be labeled *Nuclear Quality*.

4.7.13 Identification and traceability shall be maintained in accordance with **SOP-01-7.5.1**, *Item Identification and Traceability*.

4.8 Inspection

4.8.1 Inspection for acceptance shall be performed by qualified persons other than those who conduct or directly supervise the work being inspected.

4.8.2 Institute Quality System (IQS) personnel shall perform surveillance activities as required to ensure compliance with the contract and this Quality Project Plan. Specific areas in which IQS may perform surveillance activities include, but are not limited to, the following:

(a) Receiving inspection and labeling of chemical reagents, standards, and testing samples;

(b) Testing processes;

(c) Calibration and major equipment;

(d) Sample and record retention; and

(e) Test records.

4.9 Inspection and Testing

4.9.1 Required tests for acceptance shall be conducted under appropriate environmental conditions using the tools and equipment necessary to conduct the test in a manner to fulfill test requirements and acceptance criteria.

4.9.2 Tests shall be conducted, controlled, and verified in accordance with **SOP-01-8.2.4**, *Monitoring and Measurement*.

4.9.3 Controls for measuring and test equipment shall be as specified in **SOP-01-7.6.1**, *Control of Measuring and Test Equipment*.

4.9.4 Controls for identification, segregation, reporting, and resolution of nonconforming items and conditions shall be as specified in **SOP-01-8.3.1**, *Nonconformance Reporting*.

4.10 Handling, Storage, Packaging, Preservation, and Delivery

4.10.1 Controls for handling, storage, packaging, preservation, and delivery of items are identified in **SOP-01-7.5.3**, *Handling, Storage, Packaging, Protection, and Delivery of Items*.

4.10.2 Samples specified on the purchase order to be returned to the client shall be prepared and packaged as specified on the purchase order. Each package shall be marked legibly and indelibly with the purchase order/release number and line item number(s) relevant to the package.

4.11 Quality Assurance Records

4.11.1 Quality assurance records shall furnish documentary evidence that items or activities meet specified quality requirements. Documents that ensure this evidence include **TAP-01-0407-014**, *Inventory of Case File Purges*, and **SOP-01-4.2.4**, *Storage and Maintenance of Quality Records*. These documents and this QPP ensure that QA records shall be legible, identifiable, retrievable, and maintained in dual storage.

4.11.2 Records shall be traceable to associated items and activities and shall accurately reflect the work accomplished or information required.

4.11.3 Documents shall be considered valid records only if stamped, initialed or signed and dated by authorized personnel or otherwise authenticated.

4.11.4 Records of test analyses performed by the Department of Analytical and Environmental Chemistry are classified as *nonpermanent* and shall be retained for a minimum of five years. Nonpermanent records are those required to show evidence that an activity was performed in accordance with the applicable requirements, but need not be retained for the life of the item. Based on the use of the final data, the client shall be responsible for determining and implementing permanent storage requirements.

4.11.5 In order to satisfy duplicate storage requirements, one copy of the QA record shall maintained by the Project Manager in Building 70 and a separate copy shall be maintained in the Division Quality Assurance Archives in Building 201. Storage requirements shall be as stated in **SOP-01-4.2.4**, *Storage and Maintenance of Quality Records*, to ensure protection against the risk of damage or destruction.

4.12 10 CFR, Part 21

4.12.1 SwRI procurement documents shall include requirements for reporting and approving disposition of supplier nonconformances and, when required, compliance to 10 CFR, Part 21.

4.12.2 The Manager of Institute Quality Assurance or Director of Institute Quality Systems shall determine if a nonconforming condition is reportable under 10 CFR, Part 21, and initiate reporting and condition in accordance with the SwRI Operating Policies and Procedures (OPP). Safety hazards or defects that could create a substantial safety hazard shall be reported. Substantial safety hazard means a loss of safety function to the extent that there is a major reduction in the degree of protection provided to public health and safety.

4.13 Certified Test Report

The Project Manager and Institute Quality Assurance Manager as complying with all contractual requirements shall certify test reports. The certified test report shall reference the purchase order/release number, the test methods performed, and the purchase

order/release line item number.

4.14 Valid Documents List

The Department of Analytical and Environmental Chemistry task order shall specify all applicable documents and appropriate document revision level for each document. The task order shall then serve as the Valid Documents List (VDL) for each individual project.

5.0 HISTORY OF REVISIONS

Versions 0 through 3 of this plan are maintained on record in Division 01 Quality Assurance.

Revision 4
Title of document changed from the Standard Project Quality Plan *SPQP-CH/AN* to Quality Project Plan, *QPP-015*
Extensive revision to comply with Project Quality Plan PQP-Nuclear, *Nuclear Services*, which replaces SwRI NQAPM, *Nuclear Quality Assurance Program Manual*.

Revision 5
Revised 4.1.1 to include designated Division 01 QA staff to conduct pertinent nuclear training sessions to the SwRI Program Quality Plan (PQP-Nuclear), *Nuclear Services*
Revised step 4.2.4 to include Division QA as an entity along with IQS, to maintain documented evidence of qualifications

SOUTHWEST RESEARCH INSTITUTE
NUCLEAR PROJECT
CLIENT: Division 20
TASK ORDER: 061213-4
SRR: 30159
SDG: 290969
CASE: CNWRA
VTSR: December 12, 2006
PROJECT#: 06002.01.322

Chain of Custody/Login Paperwork

273600

SAMPLE LIST/CHAIN OF CUSTODY

Southwest Research Institute
Chemistry and Chemical Engineering Division
6220 Culebra Road
San Antonio, Texas 78238-5166

Requested Turnaround:
- ☐ 2 Weeks
- ☐ 3 Weeks
- ☐ Other:

Shipper Name/ Address:

Client: Lietai Yang, Div. 20 x 2483

Client Purchase Order/Other ID: 06002.01.322.1.20

Site/Zone ID:

SwRI Contact:

Analyses Requested

Sample ID	Sample Collection Date (mm/dd/yy)	Sample Collection Time	Matrix Type	Sample Type	# of Containers	Na	Cl	NO_3	NO_3
Cond. #15 (130°C)	12/11/06		L		1	Na	Cl	NO_3	NO_3
Cond. #16 (130°C)	12/11/06		↓		1	↓	↓	↓	↓

please return unused samples

Client: Div. 20
SRR #30159
Project #06002.01.322
VTSR: 12/12/06 1600
Case: L. Yang
Sample(s) Received Intact
Temp.: 22.0 °C/Therm. #027

REMARKS

Preservation
- **a** = HCl to pH <2
- **b** = HNO_3 to pH <2
- **c** = H_2SO_4 to pH <2
- **d** = NaOH to pH >12
- **e** = Cool (4°C±2°C)
- **f** = Other (specify)

Matrix Types:
- **A** – Air
- **B** – Biota
- **D** - Dust
- **E** – Emission/Stack
- **L** - Liquid
- **P** – Product
- **Sd** - Solid
- **S** – Soil
- **SED** – Sediment
- **T** - Tissue
- **W** - Water
- **WP** - Wipe

Sample Types:
- **D** - Duplicate
- **ER** – Equipment Rinsate
- **ES** – Environmental Sample
- **FB** – Field Blank
- **FD** – Field Duplicate
- **MS** – Matrix Spike
- **MSD** – Matrix Spike Dup
- **TB** – Trip Blank

Temp: 22.0°C

Therm #: 027

Redd Intact

	Date	Time
Relinquished by (Print/Signature): Jessica Auguste / Jessica Auguste	12/12/06	1600
Received by (Print/Signature):		
Relinquished by (Print/Signature):		
Received by (Print/Signature):		
Relinquished by (Print/Signature):		

SwRI Project#: see above

Received by SwRI Lab. (Signature):

Date: 12/12/06 Time: 1600

Samples Disposed: Date / Time

Samples Disposed by:

010022

SAMPLE LOG-IN SHEET

010023

Lab Name: Southwest Research Institute

Page 1 of 1

Received By (Print Name): DINO ROMAN

Log-in Date: 12/12/2006

Received By (Signature)

Case Number: L. Yang

Sample Delivery Group No.

SAS Number: N/A

Remarks: 06002.01.322

Remarks: Condition of Sample Shipment, etc

			Corresponding			
			EPA Sample #	Sample Tag #	Assigned Lab #	
1.	Custody Seal(s)	Present/(Absent) Intact/Broken	Cond. #15 (130°C)	None	290969	Intact
2.	Custody Seal Nos.	N/A	Cond. #16 (130°C)	None	290970	Intact
3.	Chain-of Custody Records	(Present)/Absent*				
4.	Traffic Reports or Packing Lists	Present/(Absent)				
5.	Airbill	Airbill/Sticker (Present)/Absent*				
6.	Airbill No.	HAND DELIVERED				
7.	Sample Tags	Present/(Absent)				
	Sample Tag Numbers	Listed/(Not) listed on Chain of Custody				
8.	Sample Condition	(Intact)/Broken*/~~Leaking~~				
9.	Cooler Temperature	22.0C				
10.	Does Information on custody records, traffic reports, and sample tags agree?	(Yes)/No*				
11.	Date Received at Lab	12/12/2006				
12.	Time Received	16:00:00				

Sample Transfer

Fraction: Thong	Fraction
Area #: Cab #2	Area #
By: DINO ROMAN	By
On: 12/12/2006	On

* Contact SMO and attach record of resolution

Reviewed By

Date: 12.14.06

Logbook No.: Sample Receipt (30159)

Logbook Page No.: ✓6014 SEC 4 of 4

FORM DC-1

OLMO4.2

010024

SOUTHWEST RESEARCH INSTITUTE
NUCLEAR PROJECT
CLIENT: Division 20
TASK ORDER: 061213-4
SRR: 30159
SDG: 290969
CASE: CNWRA
VTSR: December 12, 2006
PROJECT#: 06002.01.322

Copies of Login Book

Sample Login Book

Dec 12, 2006

SwRI Login Area
Division 1

Sample Receipt: 30159	Project: 06002.01.322	Client: Div. 20
VTSR Date: Dec 12, 2006	VTSR Time: 16:00:00	Manager: SPIES, RADONNA

System ID	Customer Sample ID	Matrix
290969	Cond. #15 (130°C)	Liquid
290970	Cond. #16 (130°C)	Liquid

Sample Receipt: 30160	Project: 12700.06.006	Client: Yazaki North Ame
VTSR Date: Dec 12, 2006	VTSR Time: 16:20:00	Manager: KARIMI, REZA

System ID	Customer Sample ID	Matrix
290971	Polyethlylene Sample	Solid

Number of samples for today: 65

Number of Containers for today: 107

SOUTHWEST RESEARCH INSTITUTE
NUCLEAR PROJECT
CLIENT: Division 20
TASK ORDER: 061213-4
SRR: 30159
SDG: 290969
CASE: CNWRA
VTSR: December 12, 2006
PROJECT#: 06002.01.322

RAW DATA

DIV. 20
TO#061213-4
Project No. 06002.01.322
Prep. Page 66-168

1-8-07

Sample ID	Element	Result	Qual (C)	Qual (Q)	Units	RL	%RPD	%Recovery	TV	rl	mg/L	sigwt	Dilution	Calc RL	ug/ml	Date	Time
pbw-A02H1	Na589	0.250	U		mg/L	0.25				0.250	0.155013113	0.155	1	0.25	0.155013113	01/02/07	12:41 PM
lcsw-A02H1	Na589	19.4			mg/L	0.25		97.0%	20	0.250	19.40788211	19.4	1	0.25	19.40788211	01/02/07	12:43 PM
290969	Na589	3.12	✓		mg/L	0.5				0.250	3.11831414	3.12	1	0.5	1.55915707	01/02/07	12:46 PM
290969d	Na589	2.95			mg/L	0.5	5.6%			0.250	2.95076621	2.95	1	0.5	1.475383105	01/02/07	12:48 PM
290970	Na589	2.67			mg/L	0.5				0.250	2.670136839	2.67	1	0.5	1.335068419	01/02/07	12:51 PM
290970s	Na589	41.2			mg/L	0.5		96.3%	40	0.250	41.17591724	41.2	1	0.5	20.58795862	01/02/07	12:53 PM

290969

$$\frac{1.55916\ \mu g/ml \times 5\ ml}{2.5\ ml} = 3.12\ mg/L$$

11/8/07

010027

QC STD. ID's	
CCV	07A02
CRI	
ICSA	
ICSAB	07A02

ICP CAL.STD. ID's	
Std0	07A02
Std1	07A02
Std2	
Std3	
Std4	
Std5	
Std6	~~07A02~~

010028

☐ 200.7 TAP No. 01-0406-028 Rev3/Jan06

☑ 6010B TAP No. 01-0406-130 Rev5/Jan06

☐ Other_____

NA

PROJ. NO.	PROJECT	TO#	DATE	MATRIX	LOGBK PG
06002.01.322	DV.20	061213-4	1-2-07	Liquid	66-168
~~06002.01.322~~	~~DV.20~~	~~061223-1~~	~~1-2-07~~	~~Liquid~~	~~66-168~~ MH 1-2-07

INSTRUMENT: Spectro FILENAME: ~~06~~ 07010214
MH 1-2-07

1-2-07

File converted to wsl? ☐

TRACE METALS PREPARATORY LABORATORY DIGESTION LOG

SOUTHWEST RESEARCH INSTITUTE
SAN ANTONIO, TEXAS 78228

BOOK / PAGE: 66 168

CLIENT(S): Div. 20 **010029**
TASK ORDER(S): 061213-4, 061223-1 SDG(S): 290969, 291720
PROJECT NO(S): 06062.01.322
METHOD: 3005A___ 3050B___ 3050B-7.5___ 3010A___ 3020A___ 7760A___ 7740A___ $HClO_4$___ $HClO_4/H_2SO_4$___
Microwave___ Fusion___ Teflon___ Rock___ OTHER dilutions
MATRIX: Water___ Soil___ Biota___ Solid___ Liquid ✓ TCLP Ext___ OTHER
INSTRUMENT: GFAA___ ICP ✓ ICP-MS___ IC___ FLAA___ HYDRIDE___ OTHER
ACID INORG #: HNO_3# 6191 HCl# 6199 H_2SO_4#_____ $HClO_4$#_____ HF#_____ H_2O_2#_____
INTERNAL STD: Sc @ 10 PPM ✓ Be @ 10 PPM___ SOURCE: IV INORG# 6160 EXP: 11-1-07 AMT: 50uL
Oven/Hotplate/ Block ID: N/A Temperature (°C): N/A

Sample Identification		df	WT(g)	I.V.(ml)	F.V.(ml)	V (mL)	
PBW-A02H1				5	5		
LCSW-A02H1*				5	5		
290969		2		2.5	5		
290969d		2		2.5	5		
290970		2		2.5	5		
290970s*		2		2.5	5		
291720		1000		0.05	50		
291720d		1000		0.05	50		
291720s*		1000		0.05	50		
291721		1000		0.05	50		

*20uL ICAL-1 Spex#6164 exp. 10/31/07
PBW&LCSW are prepared as 5mls 1%HNO_3 / 10% HCL

Note: Spiked 5mL Portions of 291720s IK 1-2-07

1-2-07

LOCATION: N/A

PREPARED BY: _____ DATE: 1-2-07
REVIEWED BY: _____ DATE: 1-2-07
DISPOSAL INT/DATE/LOC: _____

FRM-191 (Rev 4/Jan 05)

EVOLUTION by Micro-Active Australia Pty Ltd 12:23:12 PM January 2, 2007 **010030**

Keep last result visible enabled ...
Starting run ...
Creating high priority queue entries ...
BACKGROUND CORRECTED INTENSITIES
Identity 1 : BLK_SC Identity 2 : Type : STD
Weight : 1.0000 Volume : 1.00 Printed : 12:17:56 PM January 2, 2007

	Na589	Sc361
# 1	73.5	2555.0
# 2	48.5	2505.0
Mean	61.0	2530.0
SD	17.7	35.4
%RSD	29.0	1.4

INTENSITIES
Identity 1 : BLK_SC Identity 2 : Type : STD
Weight : 1.0000 Volume : 1.00 Printed : 12:17:56 PM January 2, 2007

	Na589	Sc361
# 1	0.0	2555.0
# 2	0.0	2505.0
Mean	0.0	2530.0
SD	0.0	35.4
%RSD	27.6	1.4

BACKGROUND CORRECTED INTENSITIES
Identity 1 : CLP_STD1_SC Identity 2 : Type : STD
Weight : 1.0000 Volume : 1.00 Printed : 12:20:28 PM January 2, 2007

	Na589
# 1	17828.5
# 2	17714.5
Mean	17771.5
SD	80.6
%RSD	0.5

INTENSITIES
Identity 1 : CLP_STD1_SC Identity 2 : Type : STD
Weight : 1.0000 Volume : 1.00 Printed : 12:20:28 PM January 2, 2007

	Na589
# 1	7.0
# 2	7.0
Mean	7.0
SD	0.0
%RSD	0.1

BACKGROUND CORRECTED INTENSITIES
Identity 1 : CLP_CCV_SC Identity 2 : Type : CV
Weight : 1.0000 Volume : 1.00 Printed : 12:23:02 PM January 2, 2007

	Na589	Sc	Sc361
# 1	10915.5	2586.5	2586.5
# 2	10713.5	2530.5	2530.5

1/8/07

1-2-07

SD	142.8	39.6	39.6
%RSD	1.3	1.5	1.5

APPARENT CONCENTRATIONS
EVOLUTION by Micro-Active Australia Pty Ltd 12:28:12 PM January 2, 2007

010031

Identity 1 : CLP_CCV_SC Identity 2 : Type : CV
Weight : 1.0000 Volume : 1.00 Printed : 12:23:02 PM January 2, 2007

	Na589 ppm	Sc	Sc361 ppm
# 1	30.1078	2586.500 H	102.2390
# 2	30.2051	2530.500 H	100.0198
Mean	30.1565	2558.500 H	101.1294
SD	0.0688	39.598	1.5692
%RSD	0.2282	1.548	1.5516

Checking calibration verification ...
Identity 1 : CLP_CCV_SC Identity 2 :

Report name	Low limit	Value	High limit
Na589	27.000	30.156	33.000

BACKGROUND CORRECTED INTENSITIES
Identity 1 : Calibration blank Identity 2 : Type : CB
Weight : 1.0000 Volume : 1.00 Printed : 12:25:36 PM January 2, 2007

	Na589	Sc	Sc361
# 1	43.0	2559.5	2559.5
# 2	113.0	2552.5	2552.5
Mean	78.0	2556.0	2556.0
SD	49.5	4.9	4.9
%RSD	63.5	0.2	0.2

APPARENT CONCENTRATIONS
Identity 1 : Calibration blank Identity 2 : Type : CB
Weight : 1.0000 Volume : 1.00 Printed : 12:25:36 PM January 2, 2007

		Na589 ppm	Sc	Sc361 ppm
# 1	L	-0.0525	2559.500 H	101.1690
# 2		0.1447	2552.500 H	100.8916
Mean		0.0461	2556.000 H	101.0303
SD		0.1394	4.950	0.1961
%RSD		302.3447	0.194	0.1941

Checking calibration blank ...
Identity 1 : Calibration blank Identity 2 :

Report name	CRDL	Value
Na589	0.050	0.046
Sc361	0.000	101.030

BACKGROUND CORRECTED INTENSITIES
Identity 1 : CRI Identity 2 : Type : CV
Weight : 1.0000 Volume : 1.00 Printed : 12:28:10 PM January 2, 2007

	Na589	Sc	Sc361
# 1	53.5	2534.5	2534.5
# 2	94.5	2488.5	2488.5
Mean	74.0	2511.5	2511.5
SD	29.0	32.5	32.5
%RSD	39.2	1.3	1.3

APPARENT CONCENTRATIONS
Identity 1 : CRI Identity 2 : Type : CV
Weight : 1.0000 Volume : 1.00 Printed : 12:28:10 PM January 2, 2007

EVOLUTION by Micro-Active Australia Pty Ltd 12:33:42 PM January 2, 2007

010032

		Na589 ppm	Sc		Sc361 ppm
# 1	L	-0.0215	2534.500	H	100.1783
# 2		0.0995	2488.500		98.3555
Mean		0.0390	2511.500		99.2669
SD		0.0856	32.527		1.2890
%RSD		219.5914	1.295		1.2985

Checking calibration verification ...
Identity 1 : CRI Identity 2 :

Report name	Low limit	Value	High limit	
Na589	0.000	0.039	0.000	Failed

BACKGROUND CORRECTED INTENSITIES
Identity 1 : ICSA Identity 2 : Type : INTRF
Weight : 1.0000 Volume : 1.00 Printed : 12:30:44 PM January 2, 2007

	Na589	Sc	Sc361
# 1	36.0	2438.0	2438.0
# 2	63.0	2424.0	2424.0
Mean	49.5	2431.0	2431.0
SD	19.1	9.9	9.9
%RSD	38.6	0.4	0.4

APPARENT CONCENTRATIONS
Identity 1 : ICSA Identity 2 : Type : INTRF
Weight : 1.0000 Volume : 1.00 Printed : 12:30:44 PM January 2, 2007

		Na589 ppm	Sc	Sc361 ppm
# 1	L	-0.0670	2438.000	96.3543
# 2		0.0135	2424.000	95.7995
Mean	L	-0.0268	2431.000	96.0769
SD		0.0569	9.899	0.3923
%RSD		212.6309	0.407	0.4083

BACKGROUND CORRECTED INTENSITIES
Identity 1 : ICSAB Identity 2 : Type : ICSAB
Weight : 1.0000 Volume : 1.00 Printed : 12:33:20 PM January 2, 2007

	Na589	Sc	Sc361
# 1	75.5	2443.0	2443.0
# 2	99.5	2411.0	2411.0
Mean	87.5	2427.0	2427.0
SD	17.0	22.6	22.6
%RSD	19.4	0.9	0.9

APPARENT CONCENTRATIONS
Identity 1 : ICSAB Identity 2 : Type : ICSAB
Weight : 1.0000 Volume : 1.00 Printed : 12:33:20 PM January 2, 2007

	Na589 ppm	Sc	Sc361 ppm
# 1	0.0487	2443.000	96.5524
# 2	0.1231	2411.000	95.2842

Mean	0.0859	2427.000	95.9184
SD	0.0526	22.627	0.8967
%RSD	61.1949	0.932	0.9348

EVOLUTION by Micro-Active Australia Pty Ltd 12:38:42 PM January 2, 2007

010033

Checking interference check standard ...
Identity 1 : ICSAB Identity 2 :

Report name	Low limit	Value	High limit	
Na589	0.000	0.086	0.000	Failed

BACKGROUND CORRECTED INTENSITIES
Identity 1 : CLP_CCV_SC Identity 2 : Type : CV
Weight : 1.0000 Volume : 1.00 Printed : 12:35:54 PM January 2, 2007

	Na589	Sc	Sc361
# 1	10655.0	2526.0	2526.0
# 2	10560.0	2496.0	2496.0
Mean	10607.5	2511.0	2511.0
SD	67.2	21.2	21.2
%RSD	0.6	0.8	0.8

APPARENT CONCENTRATIONS
Identity 1 : CLP_CCV_SC Identity 2 : Type : CV
Weight : 1.0000 Volume : 1.00 Printed : 12:35:54 PM January 2, 2007

	Na589	Sc	Sc361
	ppm		ppm
# 1	30.0931	2526.000	99.8415
# 2	30.1838	2496.000	98.6527
Mean	30.1384	2511.000	99.2471
SD	0.0641	21.213	0.8406
%RSD	0.2128	0.845	0.8470

Checking calibration verification ...
Identity 1 : CLP_CCV_SC Identity 2 :

Report name	Low limit	Value	High limit
Na589	27.000	30.138	33.000

BACKGROUND CORRECTED INTENSITIES
Identity 1 : Calibration blank Identity 2 : Type : CB
Weight : 1.0000 Volume : 1.00 Printed : 12:38:28 PM January 2, 2007

	Na589	Sc	Sc361
# 1	97.0	2531.0	2531.0
# 2	100.0	2496.0	2496.0
Mean	98.5	2513.5	2513.5
SD	2.1	24.7	24.7
%RSD	2.2	1.0	1.0

APPARENT CONCENTRATIONS
Identity 1 : Calibration blank Identity 2 : Type : CB
Weight : 1.0000 Volume : 1.00 Printed : 12:38:28 PM January 2, 2007

	Na589	Sc	Sc361
	ppm		ppm
# 1	0.1020	2531.000 H	100.0396
# 2	0.1145	2496.000	98.6527
Mean	0.1082	2513.500	99.3461
SD	0.0088	24.749	0.9807
%RSD	8.1537	0.985	0.9872

Checking calibration blank ...
Identity 1 : Calibration blank Identity 2 :
Report name CRDL Value
EVOLUTION by Micro-Active Australia Pty Ltd 12:46:20 PM January 2, 2007

010034

Na589	0.050	0.108	Contaminated
Sc361	0.000	99.346	

BACKGROUND CORRECTED INTENSITIES
Identity 1 : pbw-A02H1 Identity 2 : Type : SAMPLE
Weight : 1.0000 Volume : 1.00 Printed : 12:41:02 PM January 2, 2007

	Na589	Sc	Sc361
# 1	130.5	2595.5	2595.5
# 2	104.5	2539.5	2539.5
Mean	117.5	2567.5	2567.5
SD	18.4	39.6	39.6
%RSD	15.6	1.5	1.5

APPARENT CONCENTRATIONS
Identity 1 : pbw-A02H1 Identity 2 : Type : SAMPLE
Weight : 1.0000 Volume : 1.00 Printed : 12:41:02 PM January 2, 2007

	Na589		Sc		Sc361
	ppm				ppm
# 1	0.1878		2595.500	H	102.5956
# 2	0.1223		2539.500	H	100.3765
Mean	0.1550		2567.500	H	101.4860
SD	0.0463		39.598		1.5692
%RSD	29.8813		1.542		1.5462

BACKGROUND CORRECTED INTENSITIES
Identity 1 : lcsw-A02H1 Identity 2 : Type : SAMPLE
Weight : 1.0000 Volume : 1.00 Printed : 12:43:36 PM January 2, 2007

	Na589	Sc	Sc361
# 1	7084.0	2605.0	2605.0
# 2	7038.0	2570.0	2570.0
Mean	7061.0	2587.5	2587.5
SD	32.5	24.7	24.7
%RSD	0.5	1.0	1.0

APPARENT CONCENTRATIONS
Identity 1 : lcsw-A02H1 Identity 2 : Type : SAMPLE
Weight : 1.0000 Volume : 1.00 Printed : 12:43:36 PM January 2, 2007

	Na589		Sc		Sc361
	ppm				ppm
# 1	19.3392		2605.000	H	102.9721
# 2	19.4765		2570.000	H	101.5851
Mean	19.4079		2587.500	H	102.2786
SD	0.0971		24.749		0.9807
%RSD	0.5002		0.956		0.9589

BACKGROUND CORRECTED INTENSITIES
Identity 1 : 290969 Identity 2 : Type : SAMPLE
Weight : 1.0000 Volume : 1.00 Printed : 12:46:10 PM January 2, 2007

	Na589	Sc	Sc361
# 1	642.5	2742.0	2742.0
# 2	661.5	2662.0	2662.0

Mean	652.0	2702.0	2702.0
SD	13.4	56.6	56.6
%RSD	2.1	2.1	2.1

EVOLUTION by Micro-Active Australia Pty Ltd 12:54:12 PM January 2, 2007

010035

APPARENT CONCENTRATIONS
Identity 1 : 290969 Identity 2 : Type : SAMPLE
Weight : 1.0000 Volume : 1.00 Printed : 12:46:10 PM January 2, 2007

	Na589	Sc	Sc361
	ppm		ppm
# 1	1.5083	2742.000 H	108.4010
# 2	1.6100	2662.000 H	105.2308
Mean	1.5592	2702.000 H	106.8159
SD	0.0719	56.569	2.2417
%RSD	4.6141	2.094	2.0986

BACKGROUND CORRECTED INTENSITIES
Identity 1 : 290969d Identity 2 : Type : SAMPLE
Weight : 1.0000 Volume : 1.00 Printed : 12:48:44 PM January 2, 2007

	Na589	Sc	Sc361
# 1	638.0	2712.5	2712.5
# 2	600.0	2675.5	2675.5
Mean	619.0	2694.0	2694.0
SD	26.9	26.2	26.2
%RSD	4.3	1.0	1.0

APPARENT CONCENTRATIONS
Identity 1 : 290969d Identity 2 : Type : SAMPLE
Weight : 1.0000 Volume : 1.00 Printed : 12:48:44 PM January 2, 2007

	Na589	Sc	Sc361
	ppm		ppm
# 1	1.5147	2712.500 H	107.2320
# 2	1.4361	2675.500 H	105.7658
Mean	1.4754	2694.000 H	106.4989
SD	0.0556	26.163	1.0368
%RSD	3.7656	0.971	0.9735

BACKGROUND CORRECTED INTENSITIES
Identity 1 : 290970 Identity 2 : Type : SAMPLE
Weight : 1.0000 Volume : 1.00 Printed : 12:51:18 PM January 2, 2007

	Na589	Sc	Sc361
# 1	594.5	2775.0	2775.0
# 2	562.5	2729.0	2729.0
Mean	578.5	2752.0	2752.0
SD	22.6	32.5	32.5
%RSD	3.9	1.2	1.2

APPARENT CONCENTRATIONS
Identity 1 : 290970 Identity 2 : Type : SAMPLE
Weight : 1.0000 Volume : 1.00 Printed : 12:51:18 PM January 2, 2007

	Na589	Sc	Sc361
	ppm		ppm
# 1	1.3642	2775.000 H	109.7087
# 2	1.3060	2729.000 H	107.8859

SD	0.0412	32.527	1.2890
%RSD	3.0839	1.182	1.1847

BACKGROUND CORRECTED INTENSITIES
EVOLUTION by Micro-Active Australia Pty Ltd 12:59:12 PM January 2, 2007

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Identity 1 : 290970s Identity 2 : Type : SAMPLE
Weight : 1.0000 Volume : 1.00 Printed : 12:53:54 PM January 2, 2007

	Na589	Sc	Sc361
# 1	7740.5	2692.0	2692.0
# 2	7744.5	2660.0	2660.0
Mean	7742.5	2676.0	2676.0
SD	2.8	22.6	22.6
%RSD	0.0	0.8	0.8

APPARENT CONCENTRATIONS
Identity 1 : 290970s Identity 2 : Type : SAMPLE
Weight : 1.0000 Volume : 1.00 Printed : 12:53:54 PM January 2, 2007

	Na589	Sc	Sc361
	ppm		ppm
# 1	20.4585	2692.000 H	106.4197
# 2	20.7175	2660.000 H	105.1516
Mean	20.5880	2676.000 H	105.7856
SD	0.1831	22.627	0.8967
%RSD	0.8895	0.846	0.8476

BACKGROUND CORRECTED INTENSITIES
Identity 1 : 291721 Identity 2 : Type : SAMPLE
Weight : 1.0000 Volume : 1.00 Printed : 12:56:28 PM January 2, 2007

	Na589	Sc	Sc361
# 1	38304.5	2544.0	2544.0
# 2	37654.5	2491.0	2491.0
Mean	37979.5	2517.5	2517.5
SD	459.6	37.5	37.5
%RSD	1.2	1.5	1.5

APPARENT CONCENTRATIONS
Identity 1 : 291721 Identity 2 : Type : SAMPLE
Weight : 1.0000 Volume : 1.00 Printed : 12:56:28 PM January 2, 2007

		Na589	Sc	Sc361
		ppm		ppm
# 1	H	107.8631	2544.000 H	100.5548
# 2	H	108.2894	2491.000	98.4545
Mean	H	108.0762	2517.500	99.5047
SD		0.3015	37.477	1.4851
%RSD		0.2789	1.489	1.4925

BACKGROUND CORRECTED INTENSITIES
Identity 1 : 291721d Identity 2 : Type : SAMPLE
Weight : 1.0000 Volume : 1.00 Printed : 12:59:02 PM January 2, 2007

	Na589	Sc	Sc361
# 1	38012.5	2499.0	2499.0
# 2	37455.5	2471.0	2471.0
Mean	37734.0	2485.0	2485.0
SD	393.9	19.8	19.8

APPARENT CONCENTRATIONS
Identity 1 : 291721d Identity 2 : Type : SAMPLE
Weight : 1.0000 Volume : 1.00 Printed : 12:59:02 PM January 2, 2007
EVOLUTION by Micro-Active Australia Pty Ltd 1:07:12 PM January 2, 2007

010037

		Na589 ppm	Sc	Sc361 ppm
# 1	H	108.9701	2499.000	98.7715
# 2	H	108.5894	2471.000	97.6620
Mean	H	108.7798	2485.000	98.2168
SD		0.2692	19.799	0.7846
%RSD		0.2474	0.797	0.7988

BACKGROUND CORRECTED INTENSITIES
Identity 1 : 291721s Identity 2 : Type : SAMPLE
Weight : 1.0000 Volume : 1.00 Printed : 1:01:36 PM January 2, 2007

	Na589	Sc	Sc361
# 1	46162.5	2559.0	2559.0
# 2	45260.5	2506.0	2506.0
Mean	45711.5	2532.5	2532.5
SD	637.8	37.5	37.5
%RSD	1.4	1.5	1.5

APPARENT CONCENTRATIONS
Identity 1 : 291721s Identity 2 : Type : SAMPLE
Weight : 1.0000 Volume : 1.00 Printed : 1:01:36 PM January 2, 2007

		Na589 ppm	Sc	Sc361 ppm
# 1	H	129.2630	2559.000 H	101.1492
# 2	H	129.4179	2506.000	99.0489
Mean	H	129.3404	2532.500 H	100.0991
SD		0.1095	37.477	1.4851
%RSD		0.0847	1.480	1.4836

BACKGROUND CORRECTED INTENSITIES
Identity 1 : 291720 Identity 2 : Type : SAMPLE
Weight : 1.0000 Volume : 1.00 Printed : 1:04:10 PM January 2, 2007

	Na589	Sc	Sc361
# 1	58955.5	2545.5	2545.5
# 2	58408.5	2515.5	2515.5
Mean	58682.0	2530.5	2530.5
SD	386.8	21.2	21.2
%RSD	0.7	0.8	0.8

APPARENT CONCENTRATIONS
Identity 1 : 291720 Identity 2 : Type : SAMPLE
Weight : 1.0000 Volume : 1.00 Printed : 1:04:10 PM January 2, 2007

		Na589 ppm	Sc	Sc361 ppm
# 1	H	166.0103	2545.500 H	100.6142
# 2	H	166.4319	2515.500	99.4254
Mean	H	166.2211	2530.500 H	100.0198
SD		0.2981	21.213	0.8406
%RSD		0.1794	0.838	0.8405

BACKGROUND CORRECTED INTENSITIES
Identity 1 : CLP_CCV_SC Identity 2 :   Type : CV
Weight : 1.0000 Volume : 1.00 Printed : 1:06:44 PM January 2, 2007

EVOLUTION by Micro-Active Australia Pty Ltd   1:12:12 PM January 2, 2007

010038

	Na589	Sc	Sc361
# 1	10603.5	2488.5	2488.5
# 2	10368.5	2425.5	2425.5
Mean	10486.0	2457.0	2457.0
SD	166.2	44.5	44.5
%RSD	1.6	1.8	1.8

APPARENT CONCENTRATIONS
Identity 1 : CLP_CCV_SC Identity 2 :   Type : CV
Weight : 1.0000 Volume : 1.00 Printed : 1:06:44 PM January 2, 2007

	Na589	Sc	Sc361
	ppm		ppm
# 1	30.4007	2488.500	98.3555
# 2	30.4996	2425.500	95.8589
Mean	30.4501	2457.000	97.1072
SD	0.0700	44.548	1.7653
%RSD	0.2297	1.813	1.8179

Checking calibration verification ...
Identity 1 : CLP_CCV_SC   Identity 2 :

Report name	Low limit	Value	High limit
Na589	27.000	30.450	33.000

BACKGROUND CORRECTED INTENSITIES
Identity 1 : Calibration blank Identity 2 :   Type : CB
Weight : 1.0000 Volume : 1.00 Printed : 1:09:18 PM January 2, 2007

	Na589	Sc	Sc361
# 1	69.5	2512.0	2512.0
# 2	92.5	2481.0	2481.0
Mean	81.0	2496.5	2496.5
SD	16.3	21.9	21.9
%RSD	20.1	0.9	0.9

APPARENT CONCENTRATIONS
Identity 1 : Calibration blank Identity 2 :   Type : CB
Weight : 1.0000 Volume : 1.00 Printed : 1:09:18 PM January 2, 2007

	Na589	Sc	Sc361
	ppm		ppm
# 1	0.0255	2512.000	99.2867
# 2	0.0945	2481.000	98.0583
Mean	0.0600	2496.500	98.6725
SD	0.0488	21.920	0.8686
%RSD	81.2908	0.878	0.8803

Checking calibration blank ...
Identity 1 : Calibration blank   Identity 2 :

Report name	CRDL	Value	
Na589	0.050	0.060	Contaminated
Sc361	0.000	98.672	

BACKGROUND CORRECTED INTENSITIES
Identity 1 : CRI Identity 2 :   Type : CV

	Na589	Sc	Sc361
# 1	64.5	2485.0	2485.0
# 2	85.5	2458.0	2458.0

EVOLUTION by Micro-Active Australia Pty Ltd 1:17:14 PM January 2, 2007 010039

Mean	75.0	2471.5	2471.5
SD	14.8	19.1	19.1
%RSD	19.8	0.8	0.8

APPARENT CONCENTRATIONS
Identity 1 : CRI Identity 2 : Type : CV
Weight : 1.0000 Volume : 1.00 Printed : 1:11:52 PM January 2, 2007

	Na589	Sc	Sc361
	ppm		ppm
# 1	0.0132	2485.000	98.2168
# 2	0.0766	2458.000	97.1468
Mean	0.0449	2471.500	97.6818
SD	0.0448	19.092	0.7566
%RSD	99.7349	0.772	0.7745

Checking calibration verification ...
Identity 1 : CRI Identity 2 :

Report name	Low limit	Value	High limit	
Na589	0.000	0.045	0.000	Failed

BACKGROUND CORRECTED INTENSITIES
Identity 1 : ICSA Identity 2 : Type : INTRF
Weight : 1.0000 Volume : 1.00 Printed : 1:14:28 PM January 2, 2007

	Na589	Sc	Sc361
# 1	99.5	2398.5	2398.5
# 2	43.5	2348.5	2348.5
Mean	71.5	2373.5	2373.5
SD	39.6	35.4	35.4
%RSD	55.4	1.5	1.5

APPARENT CONCENTRATIONS
Identity 1 : ICSA Identity 2 : Type : INTRF
Weight : 1.0000 Volume : 1.00 Printed : 1:14:28 PM January 2, 2007

		Na589	Sc	Sc361
		ppm		ppm
# 1		0.1247	2398.500	94.7890
# 2	L	-0.0401	2348.500	92.8076
Mean		0.0423	2373.500	93.7983
SD		0.1165	35.355	1.4010
%RSD		275.5354	1.490	1.4937

BACKGROUND CORRECTED INTENSITIES
Identity 1 : ICSAB Identity 2 : Type : ICSAB
Weight : 1.0000 Volume : 1.00 Printed : 1:17:04 PM January 2, 2007

	Na589	Sc	Sc361
# 1	54.5	2400.0	2400.0
# 2	73.5	2396.0	2396.0
Mean	64.0	2398.0	2398.0
SD	13.4	2.8	2.8
%RSD	21.0	0.1	0.1

APPARENT CONCENTRATIONS
Identity 1 : ICSAB Identity 2 : Type : ICSAB
Weight : 1.0000 Volume : 1.00 Printed : 1:17:04 PM January 2, 2007

EVOLUTION by Micro-Active Australia Pty Ltd 1:22:12 PM January 2, 2007

010040

		Na589	Sc	Sc361
		ppm		ppm
# 1	L	-0.0101	2400.000	94.8484
# 2		0.0471	2396.000	94.6899
Mean		0.0185	2398.000	94.7692
SD		0.0404	2.828	0.1121
%RSD		218.2434	0.118	0.1183

Checking interference check standard ...
Identity 1 : ICSAB Identity 2 :

Report name	Low limit	Value	High limit	
Na589	0.000	0.019	0.000	Failed

BACKGROUND CORRECTED INTENSITIES
Identity 1 : CLP_CCV_SC Identity 2 : Type : CV
Weight : 1.0000 Volume : 1.00 Printed : 1:19:38 PM January 2, 2007

	Na589	Sc	Sc361
# 1	10499.5	2491.0	2491.0
# 2	10199.5	2419.0	2419.0
Mean	10349.5	2455.0	2455.0
SD	212.1	50.9	50.9
%RSD	2.0	2.1	2.1

APPARENT CONCENTRATIONS
Identity 1 : CLP_CCV_SC Identity 2 : Type : CV
Weight : 1.0000 Volume : 1.00 Printed : 1:19:38 PM January 2, 2007

	Na589	Sc	Sc361
	ppm		ppm
# 1	30.0704	2491.000	98.4545
# 2	30.0807	2419.000	95.6013
Mean	30.0756	2455.000	97.0279
SD	0.0073	50.912	2.0175
%RSD	0.0243	2.074	2.0793

Checking calibration verification ...
Identity 1 : CLP_CCV_SC Identity 2 :

Report name	Low limit	Value	High limit
Na589	27.000	30.076	33.000

BACKGROUND CORRECTED INTENSITIES
Identity 1 : Calibration blank Identity 2 : Type : CB
Weight : 1.0000 Volume : 1.00 Printed : 1:22:12 PM January 2, 2007

	Na589	Sc	Sc361
# 1	90.0	2509.0	2509.0
# 2	130.0	2494.0	2494.0
Mean	110.0	2501.5	2501.5
SD	28.3	10.6	10.6
%RSD	25.7	0.4	0.4

APPARENT CONCENTRATIONS
Identity 1 : Calibration blank Identity 2 : Type : CB
Weight : 1.0000 Volume : 1.00 Printed : 1:22:12 PM January 2, 2007

	Na589	Sc	Sc361
	ppm		ppm
# 1	0.0844	2509.000	99.1678
# 2	0.2010	2494.000	98.5734

010041

EVOLUTION by Micro-Active Australia Pty Ltd 1:32:42 PM January 2, 2007

Mean	0.1427	2501.500	98.8706
SD	0.0825	10.607	0.4203
%RSD	57.7930	0.424	0.4251

Checking calibration blank ...

Identity 1 : Calibration blank Identity 2 :

Report name	CRDL	Value	
Na589	0.050	0.143	Contaminated
Sc361	0.000	98.871	

DIV 20
06002.01.322
TO# 061213-4

Vhtoder A. Naegh
02/20/07

Analyst: RSS
Method: 300
Sig Fig: 3

010042

Date Analyzed	System ID	Analyte	Conc. ug/L	RESULT mg/L	Qual	DL	TV	%REC %RPD
01/24/07	ICV (LCS)	Fluoride	100865.149	101		2	100	101%
01/24/07	ICV (LCS)	Chloride	203811.792	204		2	200	102%
01/24/07	ICV (LCS)	Nitrite-N	119713.781	120		2	118	102%
01/24/07	ICV (LCS)	Bromide	401964.993	402		2	400	101%
01/24/07	ICV (LCS)	Nitrate-N	90767.743	90.8		2	90.4	100%
01/24/07	ICV (LCS)	Phosphate-P	191852.888	192		2	196	98.0%
01/24/07	ICB (PB)	Sulfate	403855.547	404		2	400	101%
01/24/07	ICB (PB)	Fluoride	0.000	0.1	U	0.1		
01/24/07	ICB (PB)	Chloride	0.000	0.10	U	0.1		
01/24/07	ICB (PB)	Nitrite-N	0.000	0.1	U	0.1		
01/24/07	ICB (PB)	Bromide	0.000	0.1	U	0.1		
01/24/07	ICB (PB)	Nitrate-N	0.000	0.1	U	0.1		
01/24/07	ICB (PB)	Phosphate-P	0.000	0.1	U	0.1		
01/24/07	ICB (PB)	Sulfate	0.000	0.1	U	0.1		
01/24/07	290969	Fluoride	0.000	0.1	U	0.1		
01/24/07	290969	Chloride	4385.117	4.39		0.1		
01/24/07	290969	Nitrite-N	41.375	0.1	U	0.1		
01/24/07	290969	Bromide	0.000	0.1	U	0.1		
01/24/07	290969	Nitrate-N	2193.685	2.19		0.1		
01/24/07	290969	Phosphate-P	0.000	0.1	U	0.1		
01/24/07	290969	Sulfate	91.997	0.1	U	0.1		
01/24/07	290970	Fluoride	0.000	0.1	U	0.1		
01/24/07	290970	Chloride	4597.593	4.60		0.1		
01/24/07	290970	Nitrite-N	43.873	0.1	U	0.1		
01/24/07	290970	Bromide	0.000	0.1	U	0.1		
01/24/07	290970	Nitrate-N	2283.366	2.28		0.1		
01/24/07	290970	Phosphate-P	0.000	0.1	U	0.1		
01/24/07	290970	Sulfate	123.893	0.124		0.1		
01/24/07	290970D	Fluoride	30.720	0.1	U	0.1		0.00%
01/24/07	290970D	Chloride	4554.544	4.55		0.1		1.09%
01/24/07	290970D	Nitrite-N	44.808	0.1	U	0.1		0.00%
01/24/07	290970D	Bromide	0.000	0.1	U	0.1		0.00%
01/24/07	290970D	Nitrate-N	2310.547	2.31		0.1		1.31%
01/24/07	290970D	Phosphate-P	0.000	0.1	U	0.1		0.00%
01/24/07	290970D	Sulfate	109.761	0.110		0.1		12.0%
01/24/07	290970S	Fluoride	1007.193	1.01		0.1	1	101%
01/24/07	290970S	Chloride	6354.887	6.35		0.1	2	87.5%
01/24/07	290970S	Nitrite-N	1095.206	1.10		0.1	1.18	93.2%
01/24/07	290970S	Bromide	3887.699	3.89		0.1	4	97.3%
01/24/07	290970S	Nitrate-N	3157.620	3.16		0.1	0.904	97.3%
01/24/07	290970S	Phosphate-P	1811.318	1.81		0.1	1.96	92.3%
01/24/07	290970S	Sulfate	4113.416	4.11		0.1	4	99.7%

U = Undetected

Schedule File: C:\PeakNet\SCHEDULE\24jan07.SCH

Line	Sample	Sample Type	Level	Method	Data File	Dilution
1	ICV	Sample		anions061121.met	070124_001.dxd	20
2	ICB	Sample		anions061121.met	070124_002.dxd	1
3	290969	Sample		anions061121.met	070124_003.dxd	1
4	290970	Sample		anions061121.met	070124_004.dxd	1
5	290970D	Sample		anions061121.met	070124_005.dxd	1
6	290970S	Sample		anions061121.met	070124_006.dxd	1
7	291720 DF20000	Sample		anions061121.met	070124_007.dxd	20000
8	291721 DF20000	Sample		anions061121.met	070124_008.dxd	20000
9	291721D DF20000	Sample		anions061121.met	070124_009.dxd	20000
10	291721S DF20000	Sample		anions061121.met	070124_010.dxd	20000
11	CCV	Sample		anions061121.met	070124_011.dxd	20
12	CCB	Sample		anions061121.met	070124_012.dxd	1
13	CCB	Sample		astop.met	070124	1

010043

Default Method Path: C:\PEAKNET\METHOD
Default Data Path: C:\PEAKNET\DATA\070124
Comment:
DIV 20 06002.01.322 TO#061213-4, 061223-1

ICV Sources:
1) SPEX LOT#33-13AS (INORG#6254)
F = 100 mg/L
Cl = 200 mg/L
Br = 400 mg/L
NO3N = 90.4 mg/L
PO4P = 196 mg/L
SO4 = 400 mg/L
2) 54-01-IC6
NO2N 118 mg/L

R Spies 2/12/07

Sample Name : ICV
Dilution Factor : 20.00
Injection Number : 1
Data File Name : c:\peaknet\data\070124\070124_001.DXD
Method File Name : c:\peaknet\method\anions061121.met
Schedule File Name : c:\peaknet\schedule\24jan06.sch

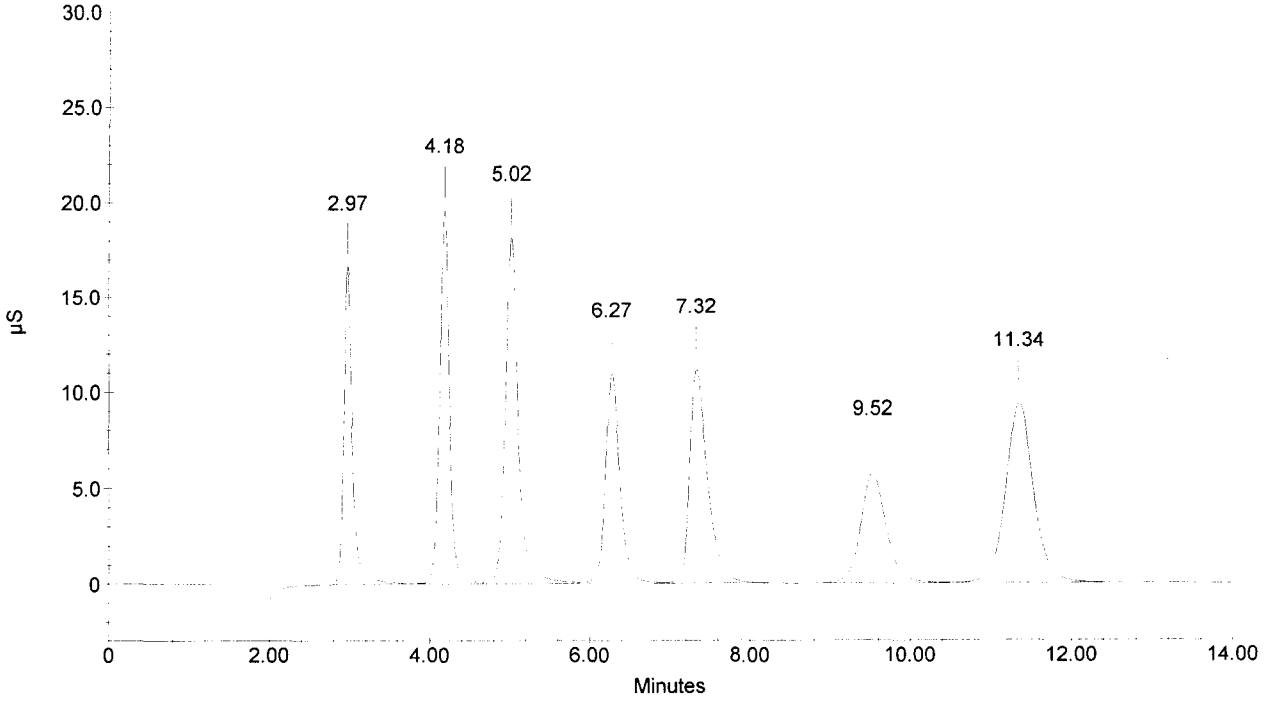
Date Time Collected : 1/24/07 8:38:34 AM
System Name : Dx-500
Detector Name : Conductivity Detector
Column Type : AS14-SN#018097 AG14-#019940
System Operator : RSPIES

010044

Peak Information : All Components

Pk. Num	Ret Time	Component Name	Concentration (PPB)	Height	Area	Bl. Code	%Delta
1	2.97	FLUORIDE	100865.149	166244	1214382	2	-1.66
2	4.18	CHLORIDE	203811.792	195905	1647542	2	-2.71
3	5.02	NITRITE-N	119713.781	181437	2042344	2	-3.53
4	6.27	BROMIDE	401964.993	109178	1366763	2	-3.83
5	7.32	NITRATE-N	90767.743	111091	1728186	2	-2.36
6	9.52	PHOSPHATE-P	191852.888	57487	1287539	2	-4.00
7	11.34	SULFATE	403855.547	93256	2267211	2	-4.57
	0.00		---total(s)--- 1512831.893		11553968		

ICV



010045

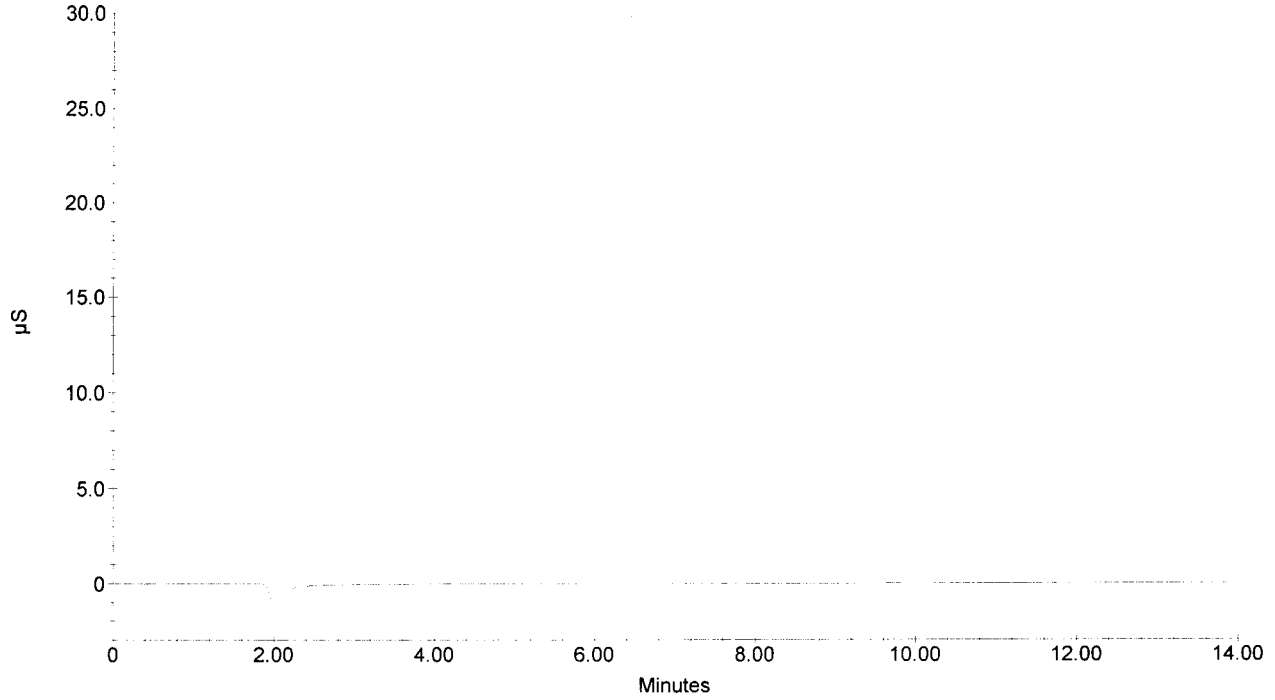
Sample Name : ICB
Dilution Factor : 1.00
Injection Number : 2
Data File Name : c:\peaknet\data\070124\070124_002.DXD
Method File Name : c:\peaknet\method\anions061121.met
Schedule File Name : c:\peaknet\schedule\24jan06.sch

Date Time Collected : 1/24/07 8:55:16 AM
System Name : Dx-500
Detector Name : Conductivity Detector
Column Type : AS14-SN#018097 AG14-#019940
System Operator : RSPIES

Peak Information : All Components

Pk. Num	Ret Time	Component Name	Concentration (PPB)	Height	Area	Bl. Code	%Delta
0	0.00	(null) CHLORIDE NITRITE-N BROMIDE NITRATE-N PHOSPHATE-P SULFATE	0.000	0	0	0	0.00
	0.00	---total(s)---	0.000		0		

ICB



Sample Name : 290969
Dilution Factor : 1.00
Injection Number : 3
Data File Name : c:\peaknet\data\070124\070124_003.DXD
Method File Name : c:\peaknet\method\anions061121.met
Schedule File Name : c:\peaknet\schedule\24jan06.sch

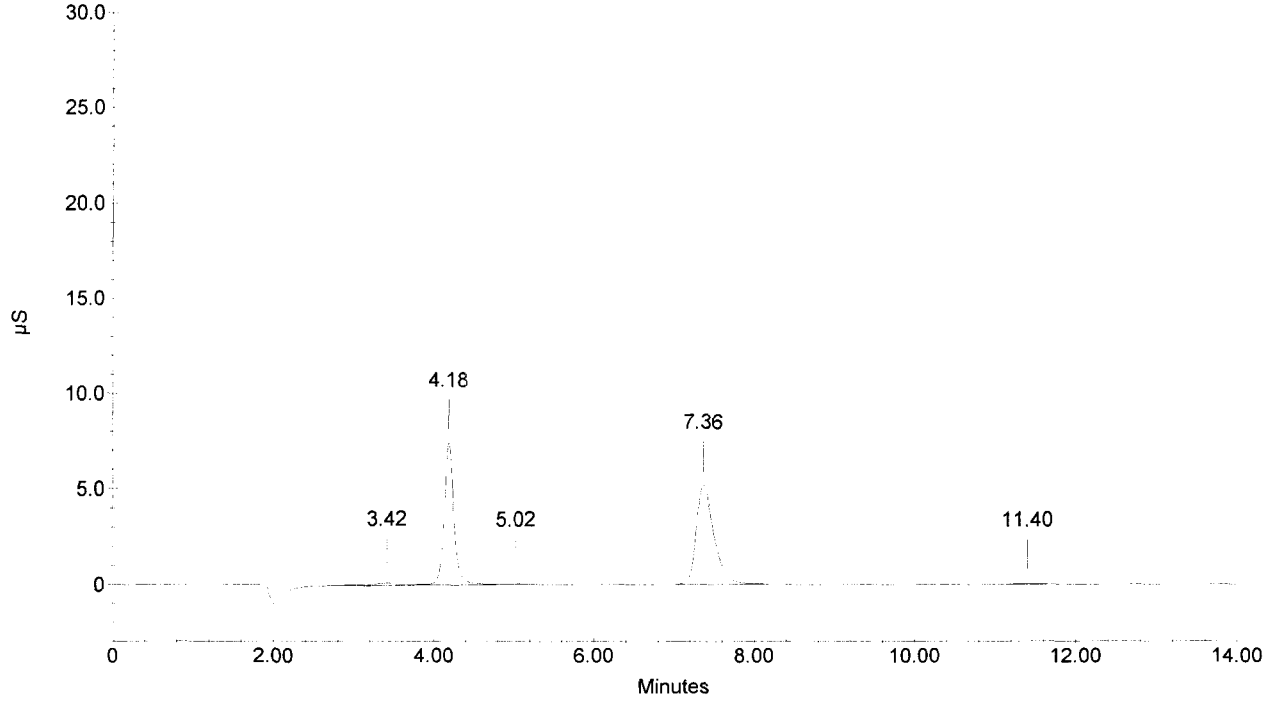
Date Time Collected : 1/24/07 9:11:53 AM
System Name : Dx-500
Detector Name : Conductivity Detector
Column Type : AS14-SN#018097 AG14-#019940
System Operator : RSPIES

010046

Peak Information : All Components

Pk. Num	Ret Time	Component Name	Concentration (PPB)	Height	Area	Bl. Code	%Delta
1	3.42		0.000	1425	28670	2	
2	4.18	CHLORIDE	4385.117	73701	643544	3	-2.71
3	5.02	NITRITE-N BROMIDE	41.375	325	3216	4	-3.40
4	7.36	NITRATE-N PHOSPHATE-P	2193.685	51360	798308	1	-1.82
5	11.40	SULFATE	91.997	266	5158	1	-4.01
	0.00		---total(s)--- 6712.175		1478896		

290969



Sample Name : 290970
Dilution Factor : 1.00
Injection Number : 4
Data File Name : c:\peaknet\data\070124\070124_004.DXD
Method File Name : c:\peaknet\method\anions061121.met
Schedule File Name : c:\peaknet\schedule\24jan06.sch

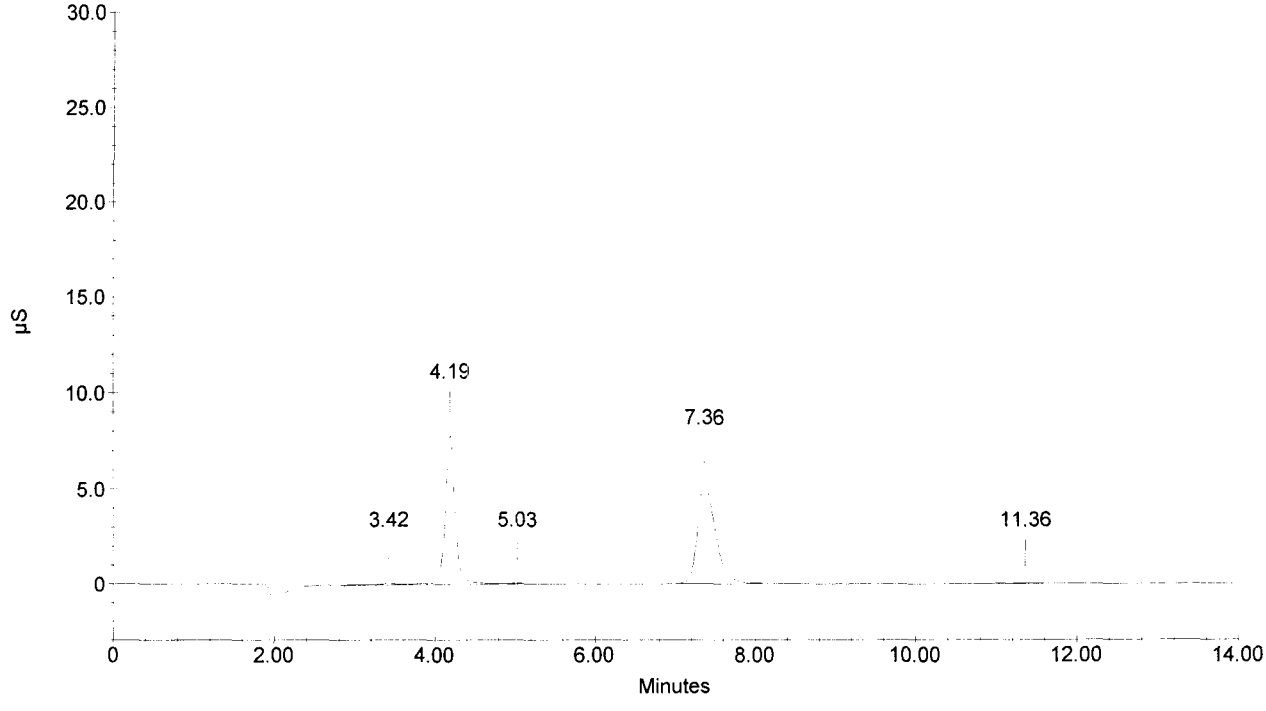
Date Time Collected : 1/24/07 9:28:33 AM
System Name : Dx-500
Detector Name : Conductivity Detector
Column Type : AS14-SN#018097 AG14-#019940
System Operator : RSPIES

010047

Peak Information : All Components

Pk. Num	Ret Time	Component Name	Concentration (PPB)	Height	Area	Bl. Code	%Delta
1	3.42		0.000 ✓	984	20071	2	
2	4.19	CHLORIDE	4597.593 ✓	77959	677242	3	-2.56
3	5.03	NITRITE-N	43.873 ✓	377	4012	4	-3.27
		BROMIDE	✓				
4	7.36	NITRATE-N	2283.366 ✓	53474	832627	1	-1.82
		PHOSPHATE-P	✓				
5	11.36	SULFATE	123.893 ✓	372	8457	1	-4.35
			---total(s)---				
	0.00		7048.725		1542409		

290970



Sample Name : 290970D
Dilution Factor : 1.00
Injection Number : 5
Data File Name : c:\peaknet\data\070124\070124_005.DXD
Method File Name : c:\peaknet\method\anions061121.met
Schedule File Name : c:\peaknet\schedule\24jan06.sch

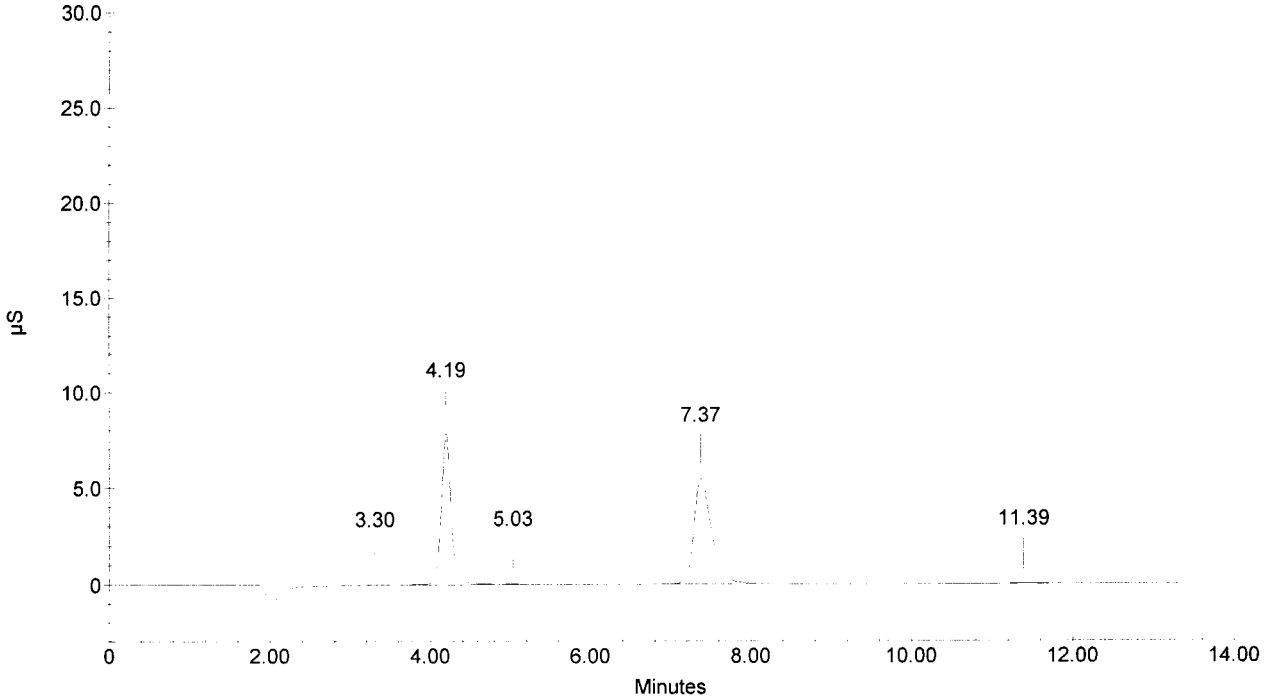
Date Time Collected : 1/24/07 9:45:11 AM
System Name : Dx-500
Detector Name : Conductivity Detector
Column Type : AS14-SN#018097 AG14-#019940
System Operator : RSPIES

010048

Peak Information : All Components

Pk. Num	Ret Time	Component Name	Concentration (PPB)	Height	Area	Bl. Code	%Delta
1	3.30	FLUORIDE	30.720	89	790	1	9.38
2	4.19	CHLORIDE	4554.544	78031	670396	3	-2.56
3	5.03	NITRITE-N BROMIDE	44.808	400	4310	4	-3.27
4	7.37	NITRATE-N PHOSPHATE-P	2310.547	54256	843047	1	-1.73
5	11.39	SULFATE	109.761	332	6995	1	-4.12
	0.00	---total(s)---	7050.381		1525539		

290970D



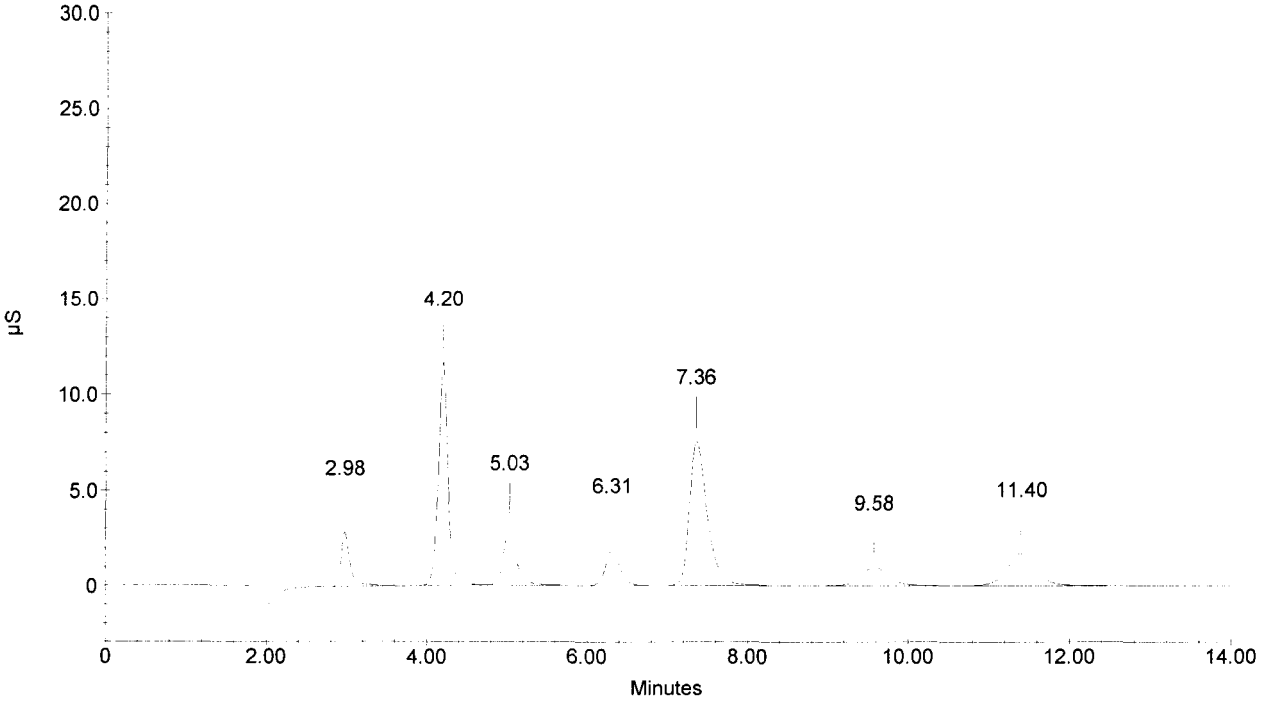
Sample Name : 290970S
Dilution Factor : 1.00
Injection Number : 6
Data File Name : c:\peaknet\data\070124\070124_006.DXD
Method File Name : c:\peaknet\method\anions061121.met
Schedule File Name : c:\peaknet\schedule\24jan06.sch

Date Time Collected : 1/24/07 10:01:49 AM **010049**
System Name : Dx-500
Detector Name : Conductivity Detector
Column Type : AS14-SN#018097 AG14-#019940
System Operator : RSPIES

Peak Information : All Components

Pk. Num	Ret Time	Component Name	Concentration (PPB)	Height	Area	Bl. Code	%Delta
1	2.98	FLUORIDE	1007.193	28719	224808	1	-1.43
2	4.20	CHLORIDE	6354.887	116371	964917	2	-2.40
3	5.03	NITRITE-N	1095.206	30766	343630	2	-3.27
4	6.31	BROMIDE	3887.699	18868	240157	1	-3.22
5	7.36	NITRATE-N	3157.620	75535	1172308	1	-1.91
6	9.58	PHOSPHATE-P	1811.318	9837	232338	2	-3.46
7	11.40	SULFATE	4113.416	16925	427486	2	-4.01
	0.00		---total(s)--- 21427.339		3605644		

290970S



010050

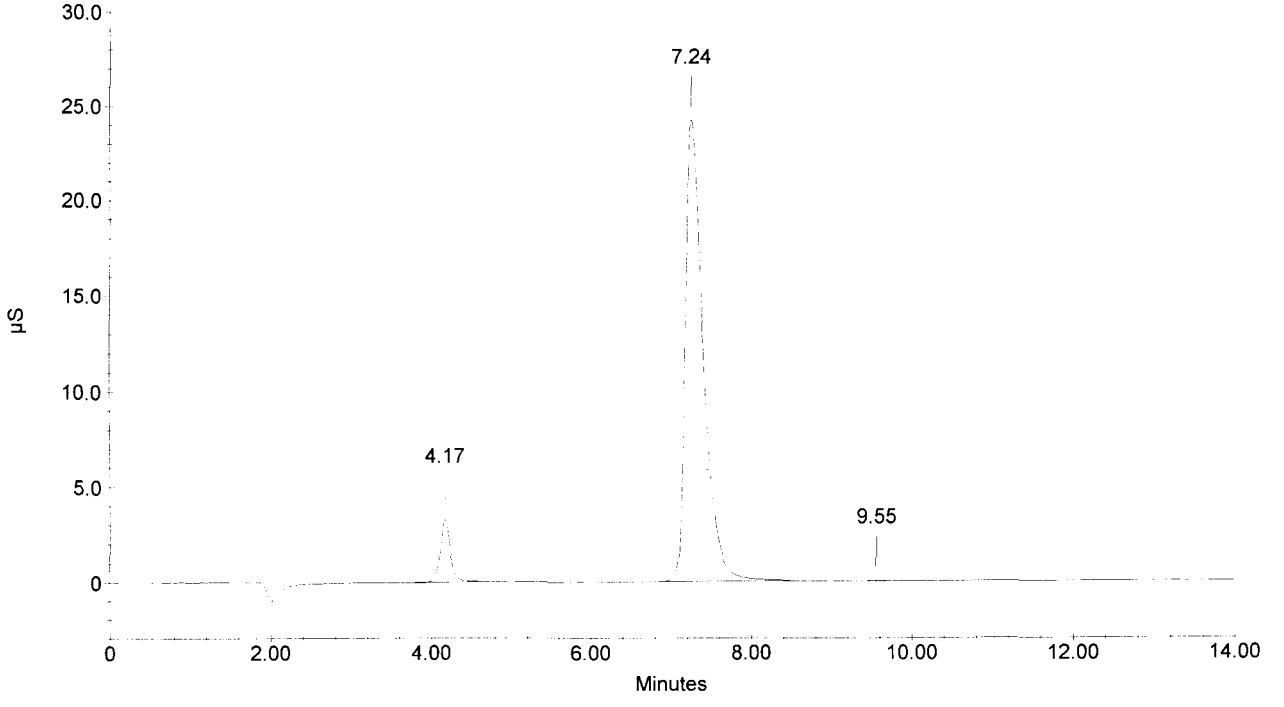
Sample Name : 291720 DF20000
Dilution Factor : 20000.00
Injection Number : 7
Data File Name : c:\peaknet\data\070124\070124_007.DXD
Method File Name : c:\peaknet\method\anions061121.met
Schedule File Name : c:\peaknet\schedule\24jan06.sch

Date Time Collected : 1/24/07 10:18:28 AM
System Name : Dx-500
Detector Name : Conductivity Detector
Column Type : AS14-SN#018097 AG14-#019940
System Operator : RSPIES

Peak Information : All Components

Pk. Num	Ret Time	Component Name	Concentration (PPB)	Height	Area	Bl. Code	%Delta
1	4.17	CHLORIDE	40642431.776	32636	285575	1	-3.02
1	4.17	CHLORIDE NITRITE-N BROMIDE	40642431.776 ✓	32636	285575	1	-3.02
2	7.24	NITRATE-N	182837106.065 ✓	241590	3759779	1	-3.42
3	9.55	PHOSPHATE-P SULFATE	17299.474	77	933	1	-3.73
	0.00		---total(s)--- 264139269.091		4331863		

291720 DF20000



Sample Name : 291721 DF20000
Dilution Factor : 20000.00
Injection Number : 8
Data File Name : c:\peaknet\data\070124\070124_008.DXD
Method File Name : c:\peaknet\method\anions061121.met
Schedule File Name : c:\peaknet\schedule\24jan06.sch

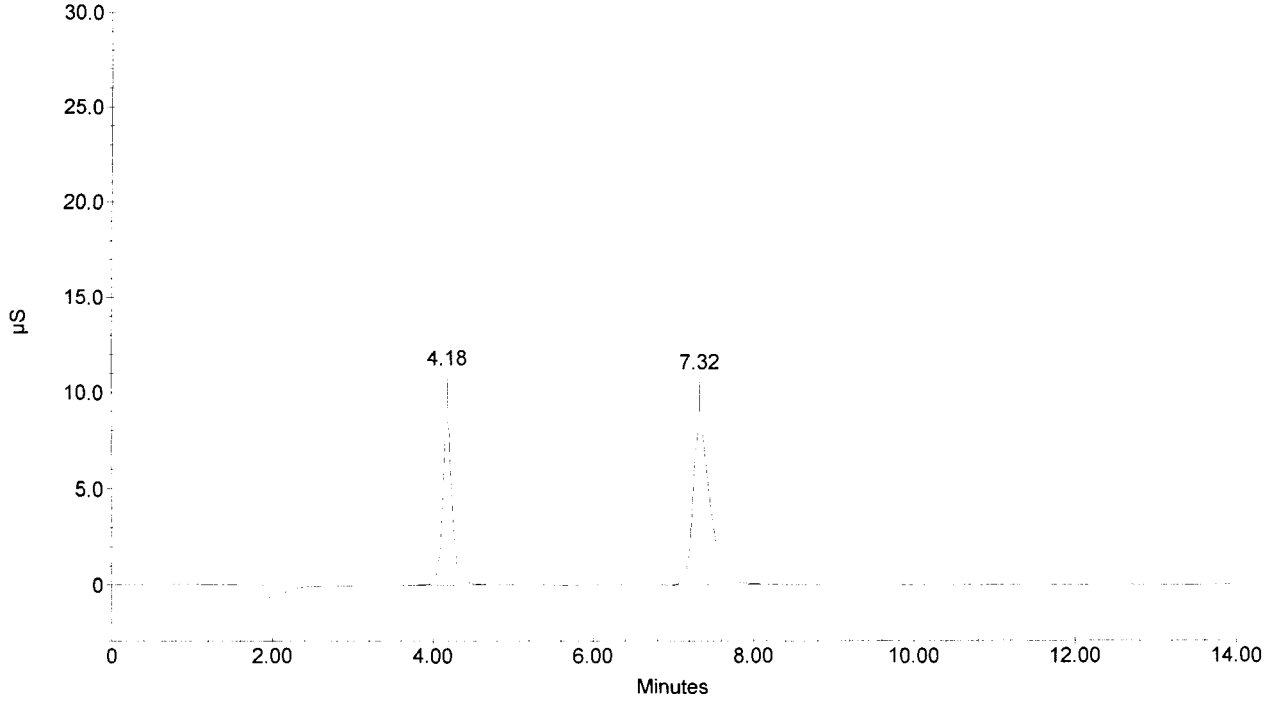
Date Time Collected : 1/24/07 10:35:07 AM
System Name : Dx-500
Detector Name : Conductivity Detector
Column Type : AS14-SN#018097 AG14-#019940
System Operator : RSPIES

010051

Peak Information : All Components

Pk. Num	Ret Time	Component Name	Concentration (PPB)	Height	Area	Bl. Code	%Delta
1	4.18	CHLORIDE	96691504.295	84535	715102	1	-2.87
1	4.18	CHLORIDE NITRITE-N BROMIDE	96691504.295	84535	715102	1	-2.87
2	7.32	NITRATE-N PHOSPHATE-P SULFATE	68416014.238	82259	1276408	1	-2.36
	0.00		---total(s)--- 261799022.829		2706612		

291721 DF20000



Sample Name : 291721D DF20000
Dilution Factor : 20000.00
Injection Number : 9
Data File Name : c:\peaknet\data\070124\070124_009.DXD
Method File Name : c:\peaknet\method\anions061121.met
Schedule File Name : c:\peaknet\schedule\24jan06.sch

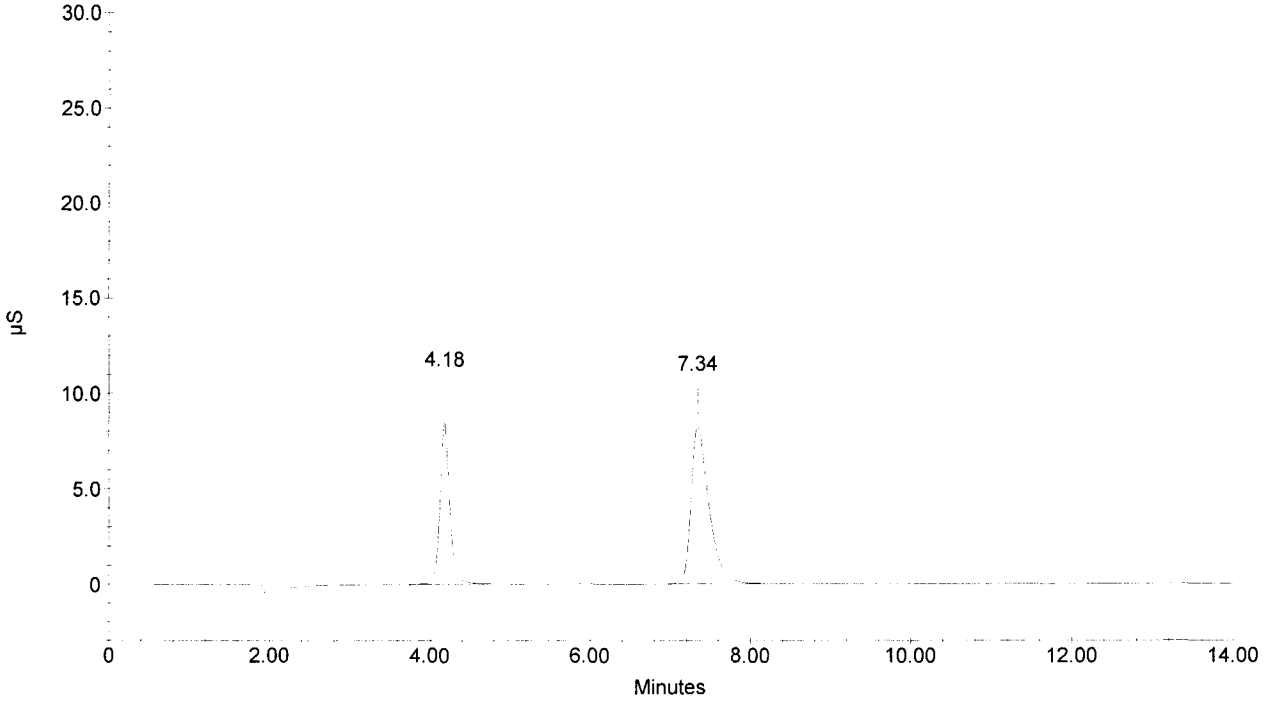
Date Time Collected : 1/24/07 10:51:47 AM
System Name : Dx-500
Detector Name : Conductivity Detector
Column Type : AS14-SN#018097 AG14-#019940
System Operator : RSPIES

010052

Peak Information : All Components

Pk. Num	Ret Time	Component Name	Concentration (PPB)	Height	Area	Bl. Code	%Delta
1	4.18	CHLORIDE	97044416.278	84328	717932	1	-2.87
1	4.18	CHLORIDE NITRITE-N BROMIDE	97044416.278	84328	717932	1	-2.87
2	7.34	NITRATE-N PHOSPHATE-P SULFATE	68414669.783	81880	1276382	1	-2.18
	0.00	---total(s)---	262503502.340		2712247		

291721D DF20000



010053

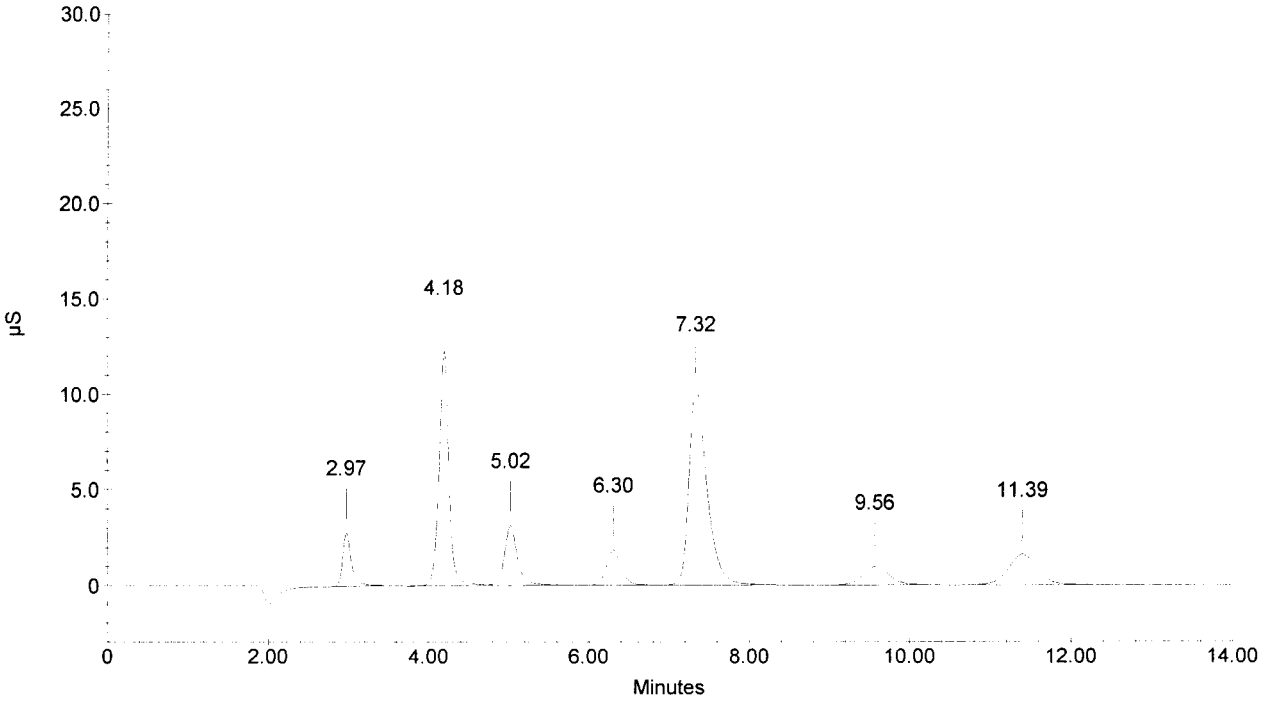
Sample Name : 291721S DF20000
Dilution Factor : 20000.00
Injection Number : 10
Data File Name : c:\peaknet\data\070124\070124_010.DXD
Method File Name : c:\peaknet\method\anions061121.met
Schedule File Name : c:\peaknet\schedule\24jan06.sch

Date Time Collected : 1/24/07 11:08:24 AM
System Name : Dx-500
Detector Name : Conductivity Detector
Column Type : AS14-SN#018097 AG14-#019940
System Operator : RSPIES

Peak Information : All Components

Pk. Num	Ret Time	Component Name	Concentration (PPB)	Height	Area	Bl. Code	%Delta
1	2.97	FLUORIDE	19085692.123	28079	212515	1	-1.66
2	4.18	CHLORIDE	135876040.233	122561	1039279	2	-2.71
3	5.02	NITRITE-N	22739572.623	31443	357316	2	-3.53
4	6.30	BROMIDE	77426267.869	18632	239110	1	-3.32
5	7.32	NITRATE-N	84742327.685	103239	1604835	1	-2.36
6	9.56	PHOSPHATE-P	35602570.183	9752	228310	1	-3.60
7	11.39	SULFATE	77884819.257	16221	404130	1	-4.12
	0.00		---total(s)--- 453357289.974		4085495		

291721S DF20000



Sample Name : CCV
Dilution Factor : 20.00
Injection Number : 11
Data File Name : c:\peaknet\data\070124\070124_011.DXD
Method File Name : c:\peaknet\method\anions061121.met
Schedule File Name : c:\peaknet\schedule\24jan06.sch

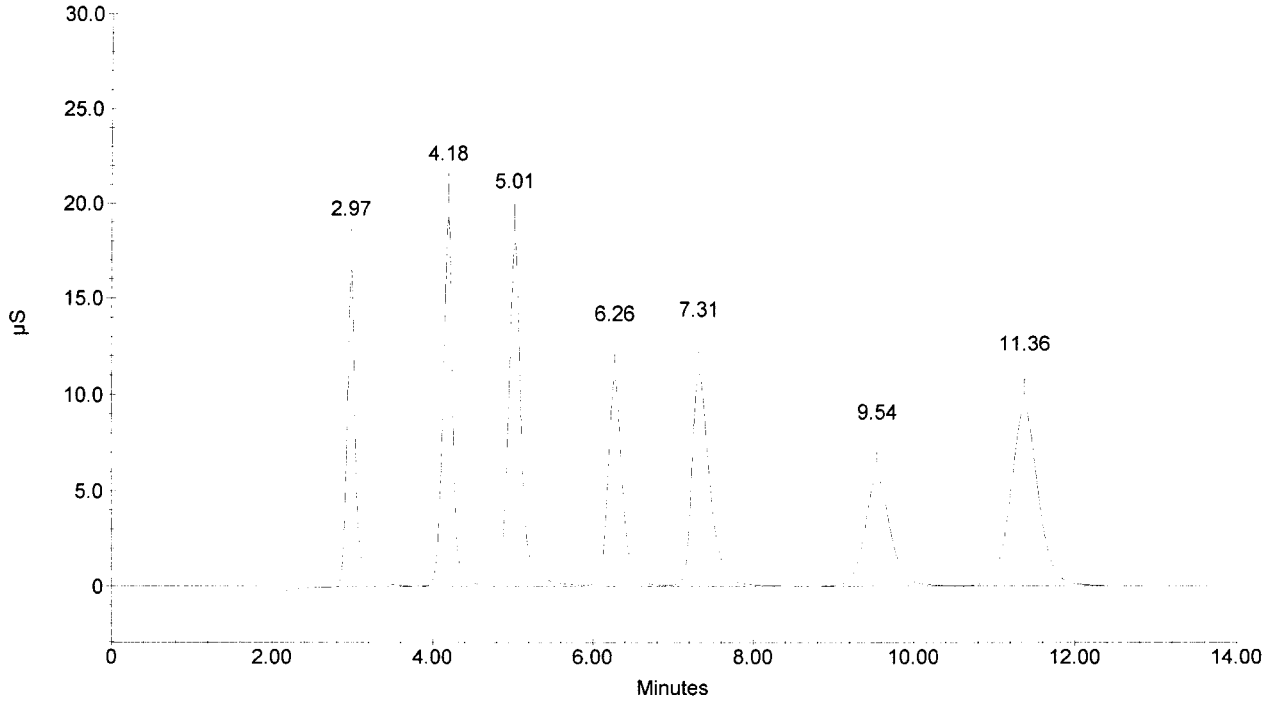
Date Time Collected : 1/24/07 11:25:05 AM
System Name : Dx-500
Detector Name : Conductivity Detector
Column Type : AS14-SN#018097 AG14-#019940
System Operator : RSPIES

010054

Peak Information : All Components

Pk. Num	Ret Time	Component Name	Concentration (PPB)	Height	Area	Bl. Code	%Delta
1	2.97	FLUORIDE	100940.582	163736	1215353	2	-1.66
2	4.18	CHLORIDE	203293.589	193056	1642696	2	-2.71
3	5.01	NITRITE-N	118980.418	178590	2028931	2	-3.65
4	6.26	BROMIDE	402935.981	108553	1370463	2	-3.94
5	7.31	NITRATE-N	91342.187	110656	1740007	2	-2.53
6	9.54	PHOSPHATE-P	192448.816	57558	1291793	2	-3.86
7	11.36	SULFATE	401370.090	93089	2251887	2	-4.35
	0.00		---total(s)--- 1511311.663		11541130		

CCV



010055

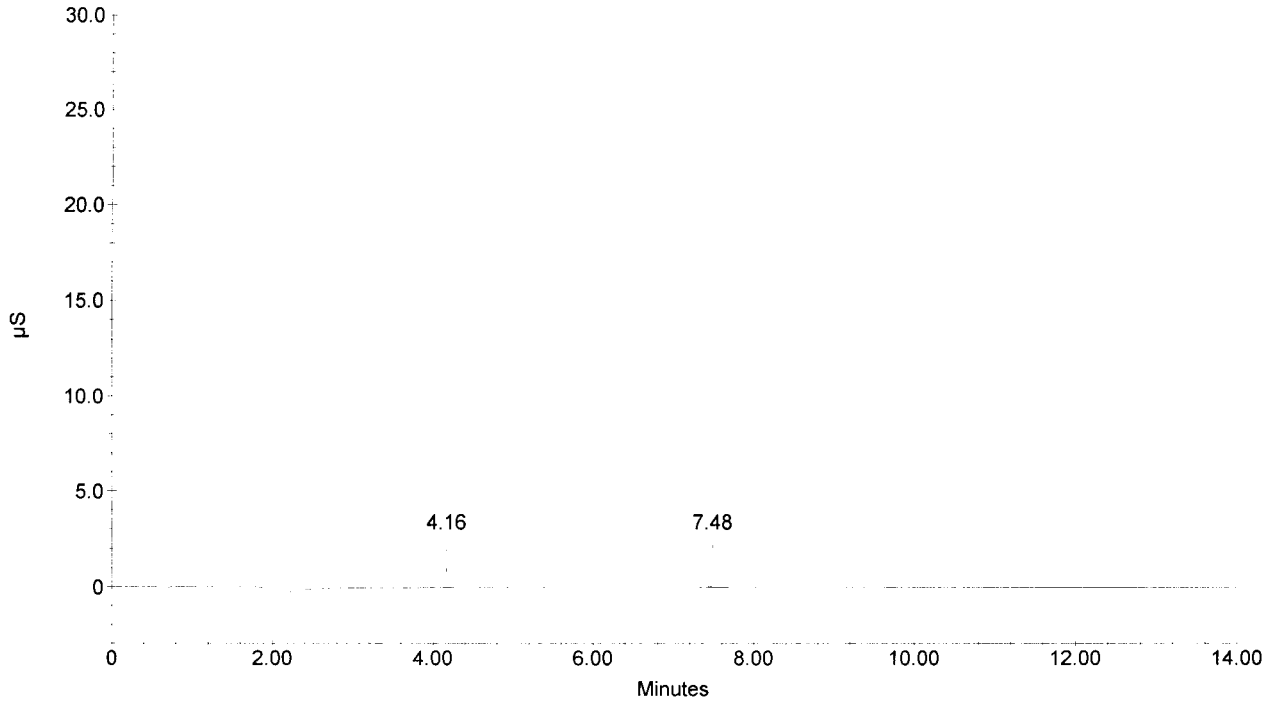
Sample Name : CCB
Dilution Factor : 1.00
Injection Number : 12
Data File Name : c:\peaknet\data\070124\070124_012.DXD
Method File Name : c:\peaknet\method\anions061121.met
Schedule File Name : c:\peaknet\schedule\24jan06.sch

Date Time Collected : 1/24/07 11:41:43 AM
System Name : Dx-500
Detector Name : Conductivity Detector
Column Type : AS14-SN#018097 AG14-#019940
System Operator : RSPIES

Peak Information : All Components

Pk. Num	Ret Time	Component Name	Concentration (PPB)	Height	Area	Bl. Code	%Delta
1	4.16	CHLORIDE	22.591	152	910	1	-3.18
1	4.16	CHLORIDE NITRITE-N BROMIDE	22.591	152	910	1	-3.18
2	7.48	NITRATE-N PHOSPHATE-P SULFATE	40.855	234	2708	1	-0.22
	0.00		---total(s)--- 86.038		4528		

CCB



Schedule File: C:\PeakNet\schedule\061121.sch

Line	Sample	Sample Type	Level	Method	Data File	Dilution
1	BLK	Sample		anions061121.met	061121_001.dxd	1
2	0ppb 36-08-IC6	Calibration St	1	anions061121.met	061121_002.dxd	1
3	100ppb 36-07-IC6	Calibration St	2	anions061121.met	061121_003.dxd	1
4	500ppb 36-06-IC6	Calibration St	3	anions061121.met	061121_004.dxd	1
5	1000ppb 36-05-IC6	Calibration St	4	anions061121.met	061121_005.dxd	1
6	5000ppb 36-04-IC6	Calibration St	5	anions061121.met	061121_006.dxd	1
7	10000ppb 36-03-IC6	Calibration St	6	anions061121.met	061121_007.dxd	1
8	15000ppb 36-02-IC6	Calibration St	7	anions061121.met	061121_008.dxd	1
9	20000ppb 36-01-IC6	Calibration St	8	anions061121.met	061121_009.dxd	1
10	ICV	Sample		anions061121.met	061121_010.dxd	20
11	ICB	Sample		anions061121.met	061121_011.dxd	1

010056

Default Method Path: C:\PEAKNET\METHOD
Default Data Path: C:\PEAKNET\DATA\061121
Comment:
METHODS: EPA 300.0 & SW 846 9056

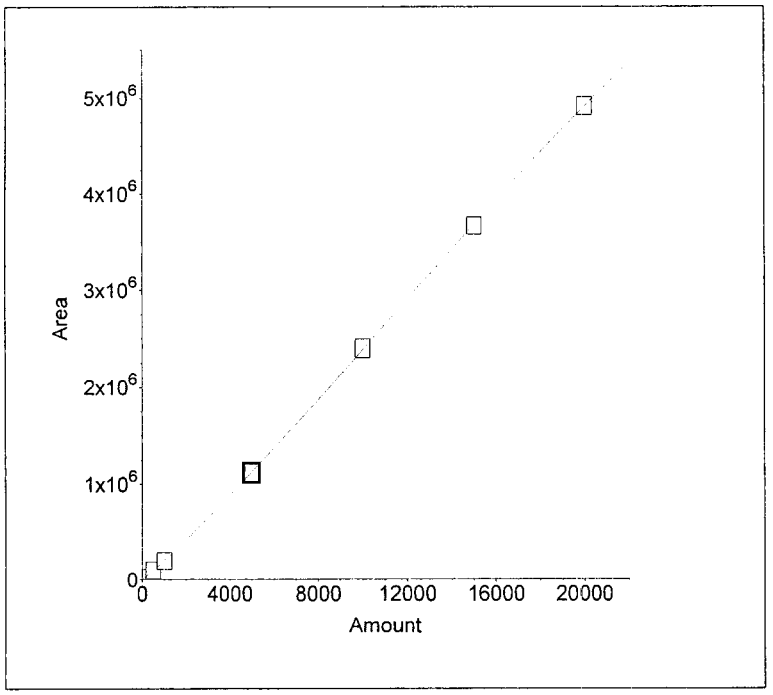
ICV Sources:
1) SPEX LOT#33-13AS (INORG#6118)
   F = 100 mg/L
   Cl = 200 mg/L
   Br = 400 mg/L
   NO3N = 90.4 mg/L
   PO4P = 196 mg/L
   SO4 = 400 mg/L
2) 35-01-IC6
   NO2N 111 mg/L

12 Spies
11/29/06

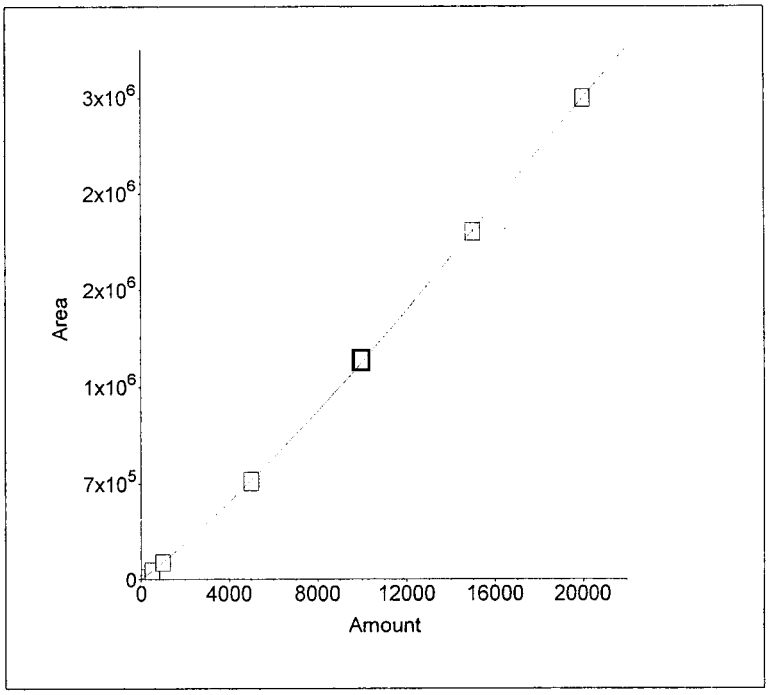
Method:C:\PEAKNET\METHOD\ANIONS061121.MET Updated:11/21/06 5:25:52 PM Total:7

010057

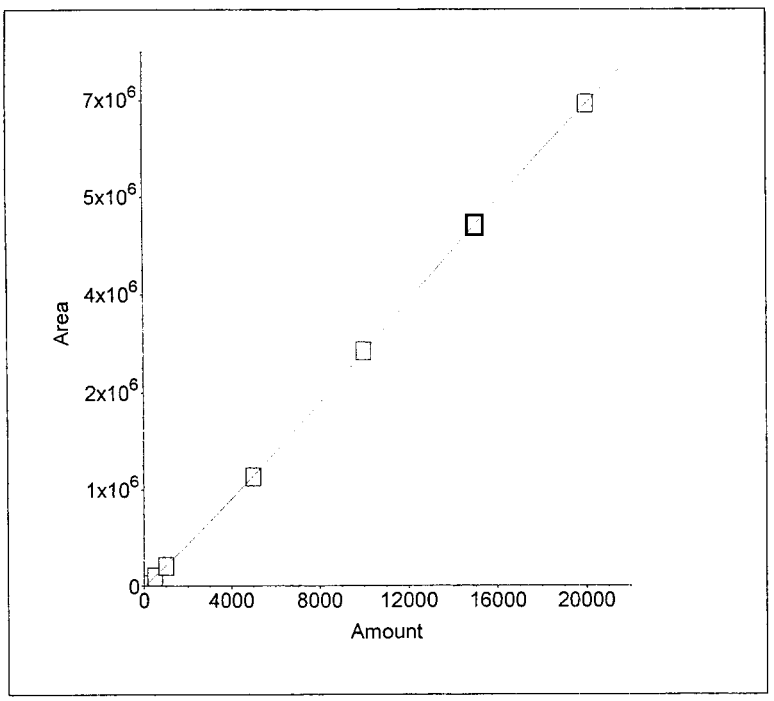
1. Component:FLUORIDE
Standard:External Fit Type:Cubic
Origin:Include Calibration:Area
r^2=0.999983
Amt=2.996716e-017*Resp^3+
-2.741223e-010*Resp^2+
4.419215e-003*Resp+27.23



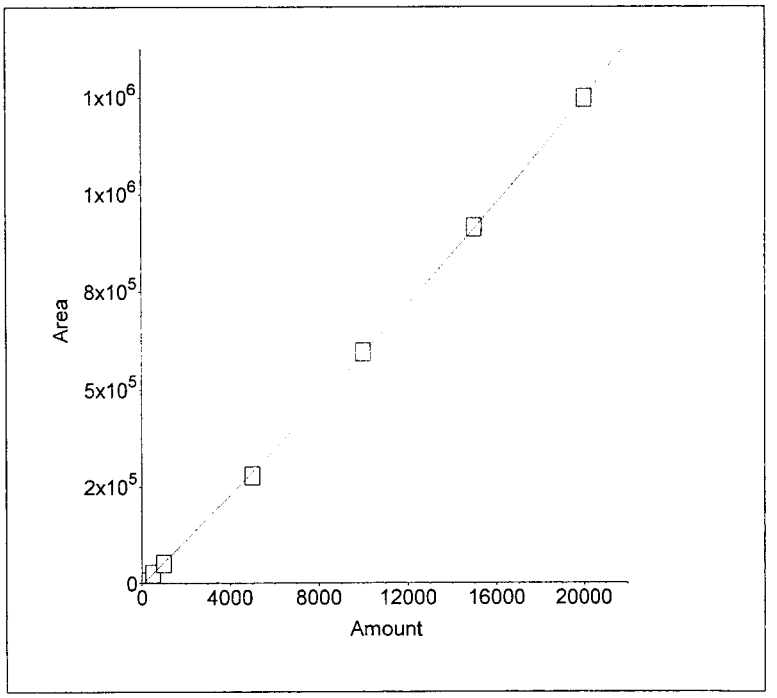
2. Component:CHLORIDE
Standard:External Fit Type:Cubic
Origin:Include Calibration:Area
r^2=0.999965
Amt=1.067262e-016*Resp^3+
-8.556534e-010*Resp^2+
7.295674e-003*Resp+15.95



3. Component:NITRITE-N
Standard:External Fit Type:Cubic
Origin:Include Calibration:Area
r^2=0.999979
Amt=9.968819e-018*Resp^3+
-1.301414e-010*Resp^2+
3.139690e-003*Resp+31.28

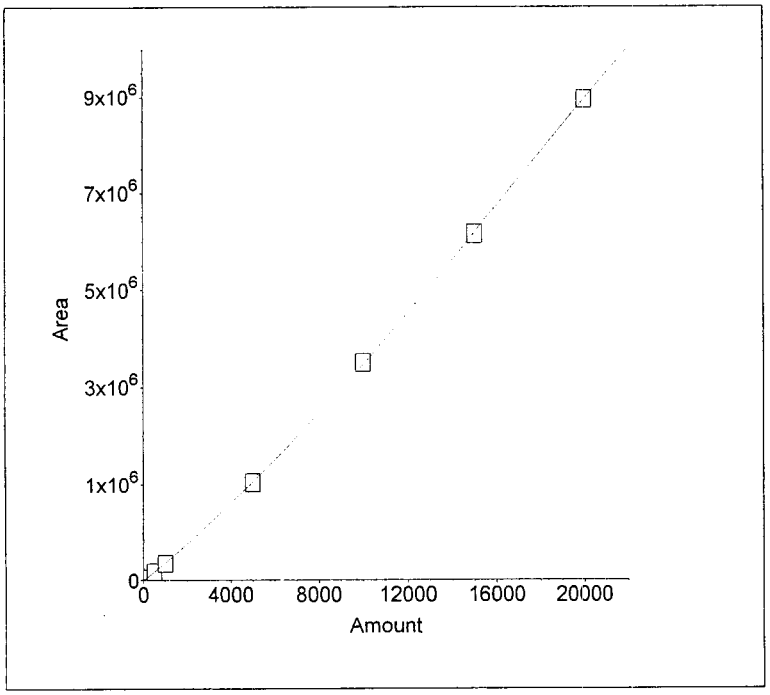


4. Component:BROMIDE
Standard:External Fit Type:Quadratic
Origin:Include Calibration:Area
r^2=0.999913
Amt=-1.119978e-009*Resp^2+
1.618856e-002*Resp+64.5

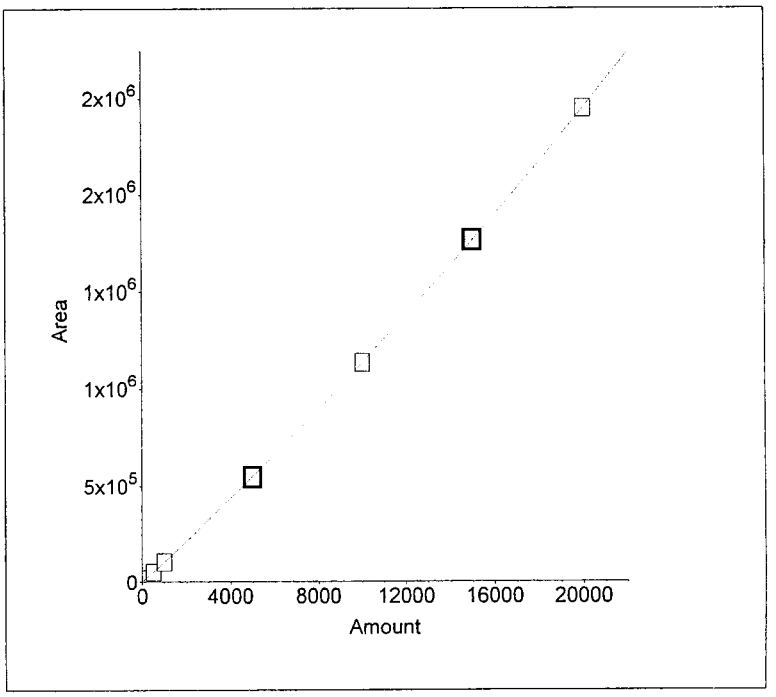


010058

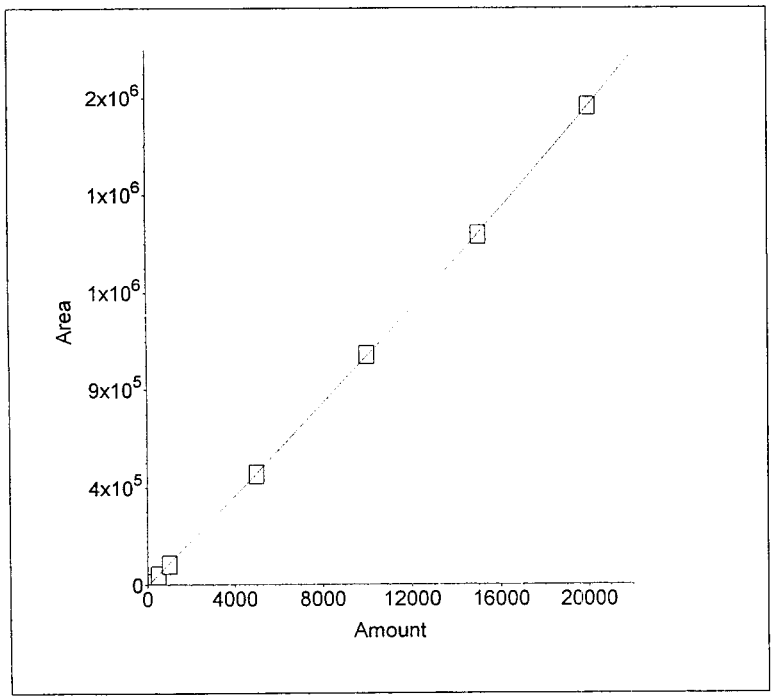
5. Component:NITRATE-N
Standard:External Fit Type:Cubic
Origin:Include Calibration:Area
r^2=0.999972
Amt=5.475663e-018*Resp³+
-1.207215e-010*Resp²+
2.799120e-003*Resp+33.28



6. Component:PHOSPHATE-P
Standard:External Fit Type:Quadratic
Origin:Include Calibration:Area
r^2=0.999996
Amt=-3.493784e-010*Resp²+
7.905269e-003*Resp+-6.513



7. Component:SULFATE
Standard:External Fit Type:Quadratic
Origin:Include Calibration:Area
r^2=0.999969
Amt=-3.456706e-010*Resp²+
9.671567e-003*Resp+42.12



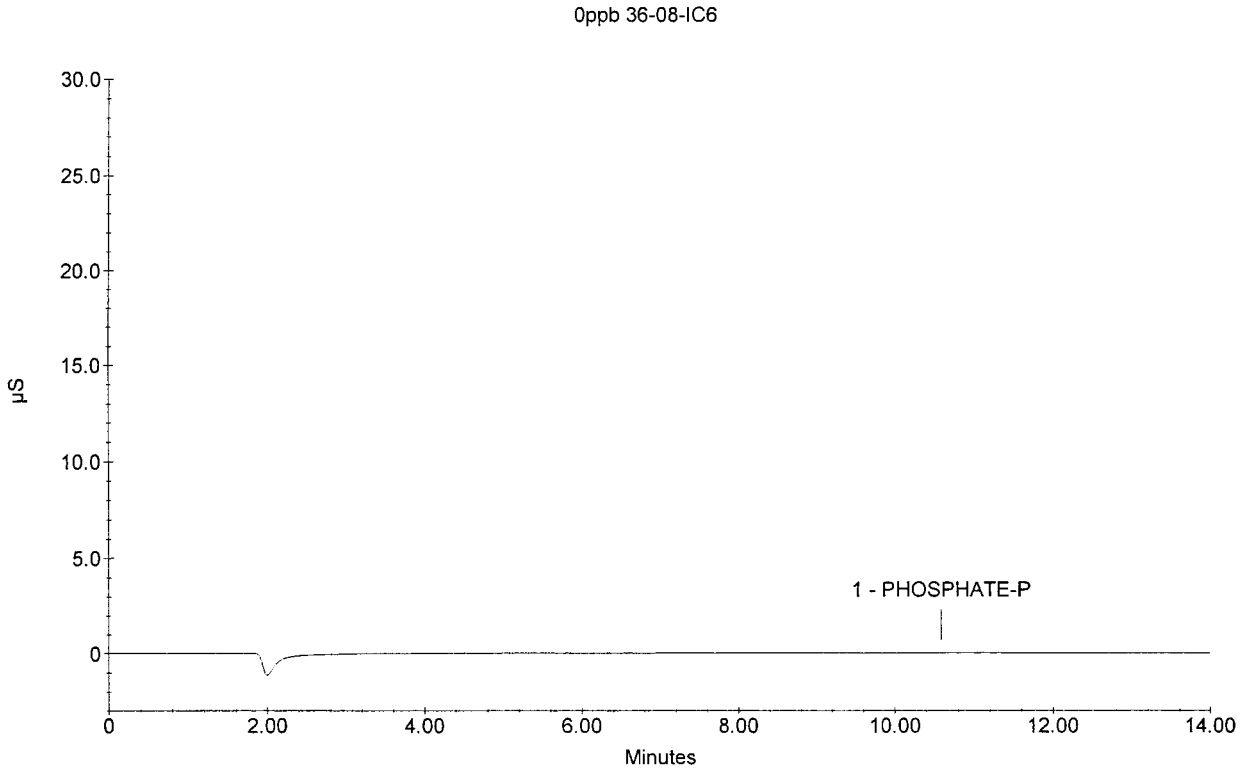
Sample Name : 0ppb 36-08-IC6
Dilution Factor : 1.00
Injection Number : 2
Data File Name : c:\peaknet\data\061121\061121_002.DXD
Method File Name : c:\peaknet\method\anions061121.met
Schedule File Name : c:\peaknet\schedule\061121.sch

Date Time Collected : 11/21/06 9:50:23 AM
Date Time Updated : 11/21/06 10:06:55 AM
System Name : Dx-500
Detector Name : Conductivity Detector
Column Type : AS14-SN#018097 AG14-#019940
System Operator : RSPIES

010059

Peak Information : All Components

Peak Number	Peak Retention Time	Component Name	Concentration, ppm (PPB)	Peak Area	Peak Height
1	10.58	PHOSPHATE-P CHLORIDE NITRITE-N BROMIDE NITRATE-N	0.00	1020	40
1	10.58	PHOSPHATE-P SULFATE	0.00	1020	40

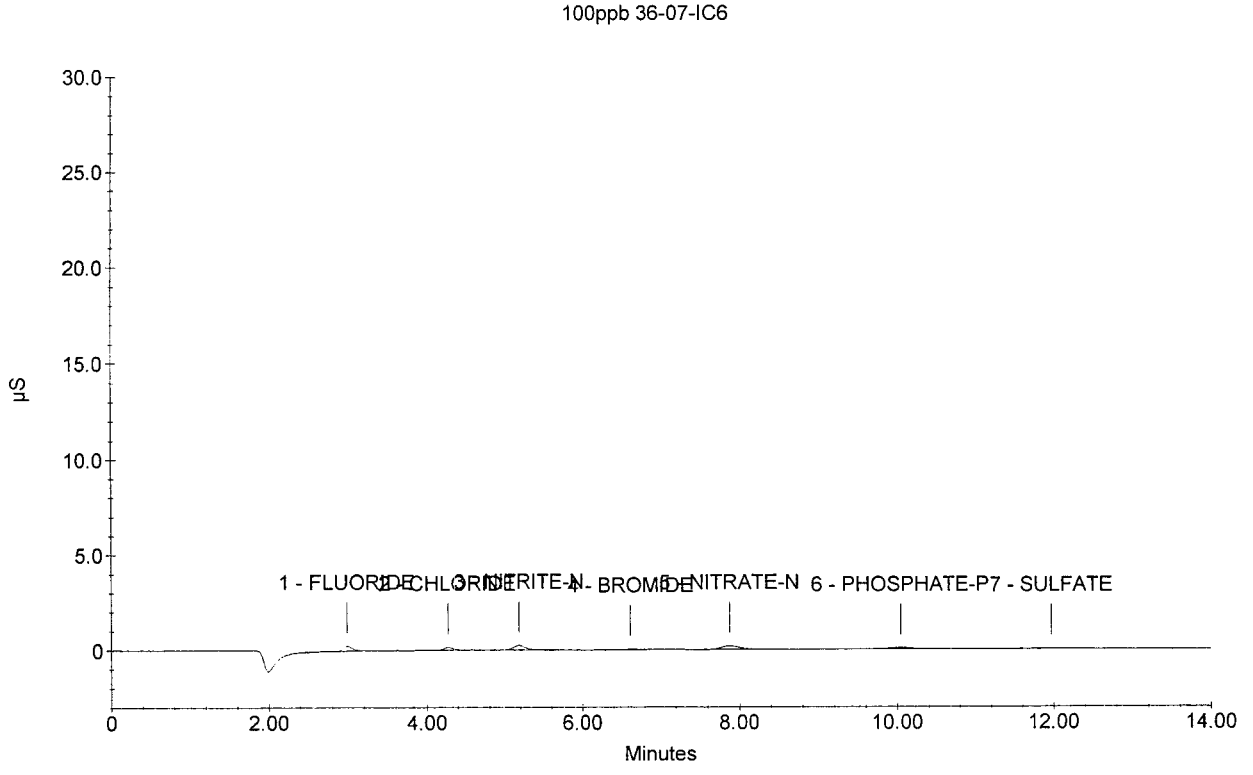


Sample Name : 100ppb 36-07-IC6
Dilution Factor : 1.00
Injection Number : 3
Data File Name : c:\peaknet\data\061121\061121_003.DXD
Method File Name : c:\peaknet\method\anions061121.met
Schedule File Name : c:\peaknet\schedule\061121.sch

Date Time Collected : 11/21/06 10:07:00 AM **010060**
Date Time Updated : 11/21/06 10:23:31 AM
System Name : Dx-500
Detector Name : Conductivity Detector
Column Type : AS14-SN#018097 AG14-#019940
System Operator : RSPIES

Peak Information : All Components

Peak Number	Peak Retention Time	Component Name	Concentration, ppm (PPB)	Peak Area	Peak Height
1	2.98	FLUORIDE	100.00	18168	2533
2	4.27	CHLORIDE	100.00	15692	1516
3	5.18	NITRITE-N	100.00	26374	2385
4	6.62	BROMIDE	100.00	4906	402
5	7.88	NITRATE-N	100.00	29909	1810
6	10.04	PHOSPHATE-P	100.00	17240	651
7	11.97	SULFATE	100.00	9218	398



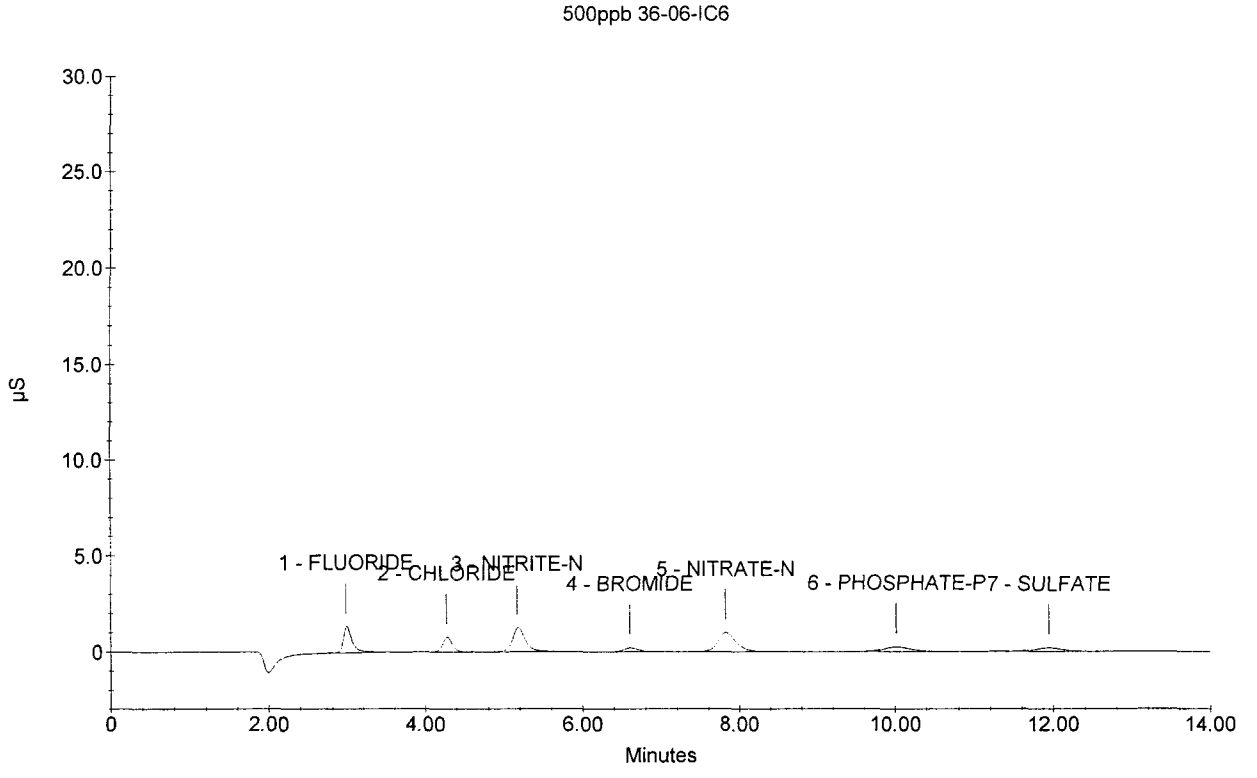
010061

Sample Name : 500ppb 36-06-IC6
Dilution Factor : 1.00
Injection Number : 4
Data File Name : c:\peaknet\data\061121\061121_004.DXD
Method File Name : c:\peaknet\method\anions061121.met
Schedule File Name : c:\peaknet\schedule\061121.sch

Date Time Collected : 11/21/06 10:23:35 AM
Date Time Updated : 11/21/06 10:40:08 AM
System Name : Dx-500
Detector Name : Conductivity Detector
Column Type : AS14-SN#018097 AG14-#019940
System Operator : RSPIES

Peak Information : All Components

Peak Number	Peak Retention Time	Component Name	Concentration, ppm (PPB)	Peak Area	Peak Height
1	2.98	FLUORIDE	500.00	105570	13386
2	4.27	CHLORIDE	500.00	65978	7499
3	5.17	NITRITE-N	500.00	146554	12339
4	6.60	BROMIDE	500.00	26546	2038
5	7.82	NITRATE-N	500.00	165885	9805
6	10.02	PHOSPHATE-P	500.00	63449	2525
7	11.94	SULFATE	500.00	45764	1852

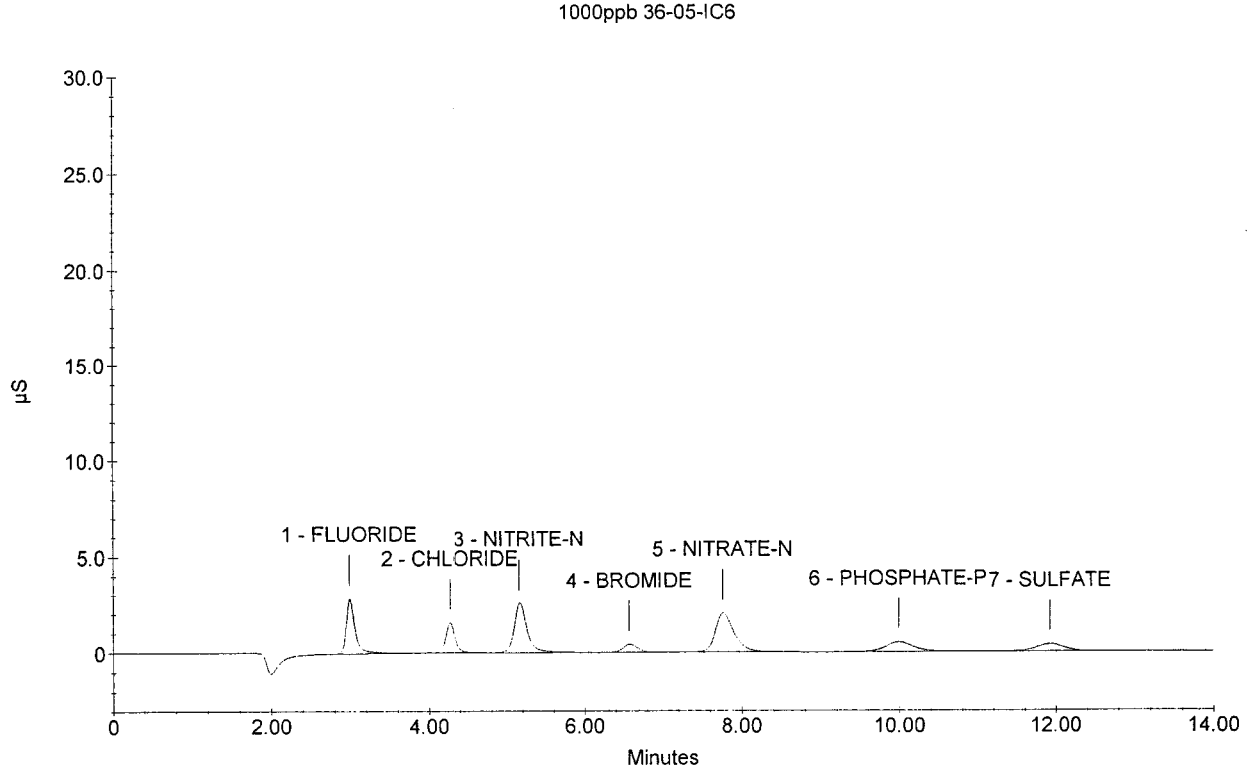


Sample Name : 1000ppb 36-05-IC6
Dilution Factor : 1.00
Injection Number : 5
Data File Name : c:\peaknet\data\061121\061121_005.DXD
Method File Name : c:\peaknet\method\anions061121.met
Schedule File Name : c:\peaknet\schedule\061121.sch

Date Time Collected : 11/21/06 10:40:12 AM **010062**
Date Time Updated : 11/21/06 10:56:45 AM
System Name : Dx-500
Detector Name : Conductivity Detector
Column Type : AS14-SN#018097 AG14-#019940
System Operator : RSPIES

Peak Information : All Components

Peak Number	Peak Retention Time	Component Name	Concentration, ppm (PPB)	Peak Area	Peak Height
1	2.98	FLUORIDE	1000.00	218414	28563
2	4.27	CHLORIDE	1000.00	133332	15552
3	5.15	NITRITE-N	1000.00	302442	25591
4	6.57	BROMIDE	1000.00	55490	4128
5	7.76	NITRATE-N	1000.00	337227	20285
6	9.99	PHOSPHATE-P	1000.00	126725	4994
7	11.92	SULFATE	1000.00	93736	3746

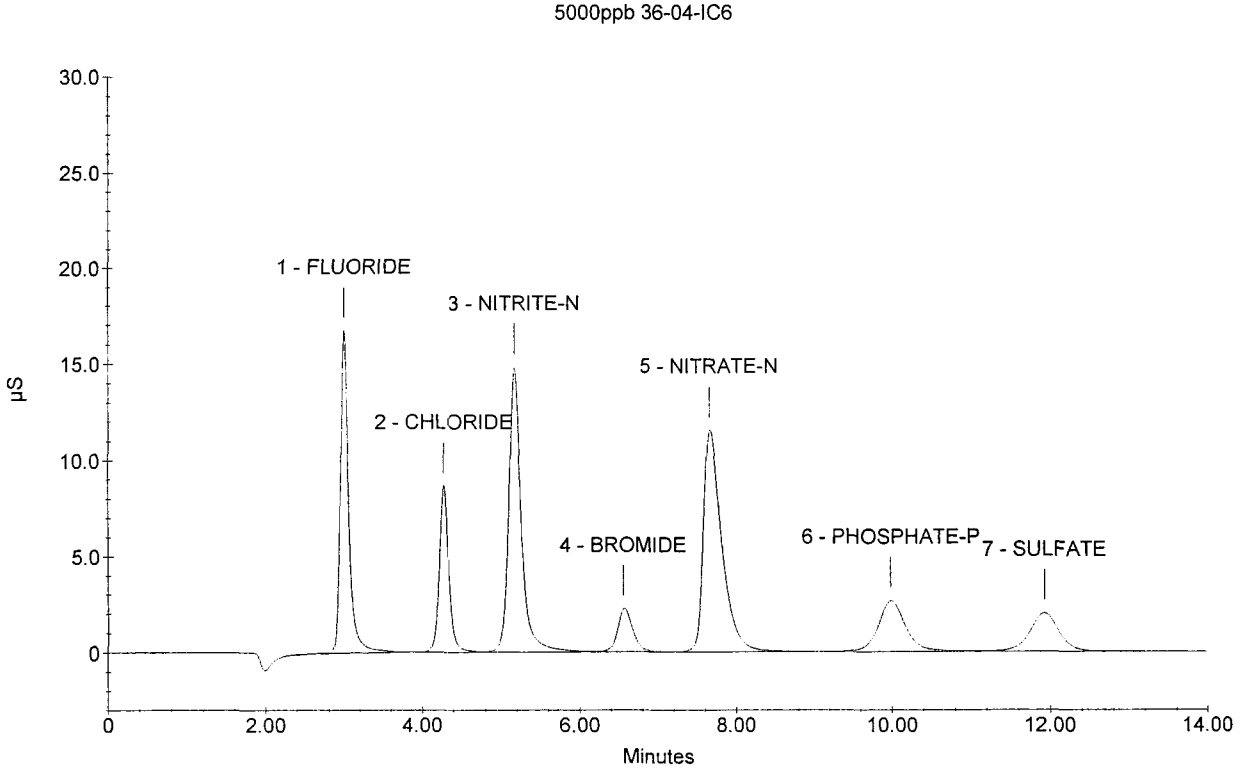


Sample Name : 5000ppb 36-04-IC6
Dilution Factor : 1.00
Injection Number : 6
Data File Name : c:\peaknet\data\061121\061121_006.DXD
Method File Name : c:\peaknet\method\anions061121.met
Schedule File Name : c:\peaknet\schedule\061121.sch

Date Time Collected : 11/21/06 10:56:49 AM **010063**
Date Time Updated : 11/21/06 11:13:21 AM
System Name : Dx-500
Detector Name : Conductivity Detector
Column Type : AS14-SN#018097 AG14-#019940
System Operator : RSPIES

Peak Information : All Components

Peak Number	Peak Retention Time	Component Name	Concentration, ppm (PPB)	Peak Area	Peak Height
1	3.00	FLUORIDE	5000.00	1194951	167245
2	4.27	CHLORIDE	5000.00	732576	85884
3	5.17	NITRITE-N	5000.00	1673560	147535
4	6.55	BROMIDE	5000.00	302366	22265
5	7.65	NITRATE-N	5000.00	1900543	114863
6	9.98	PHOSPHATE-P	5000.00	649628	26414
7	11.92	SULFATE	5000.00	518253	19812



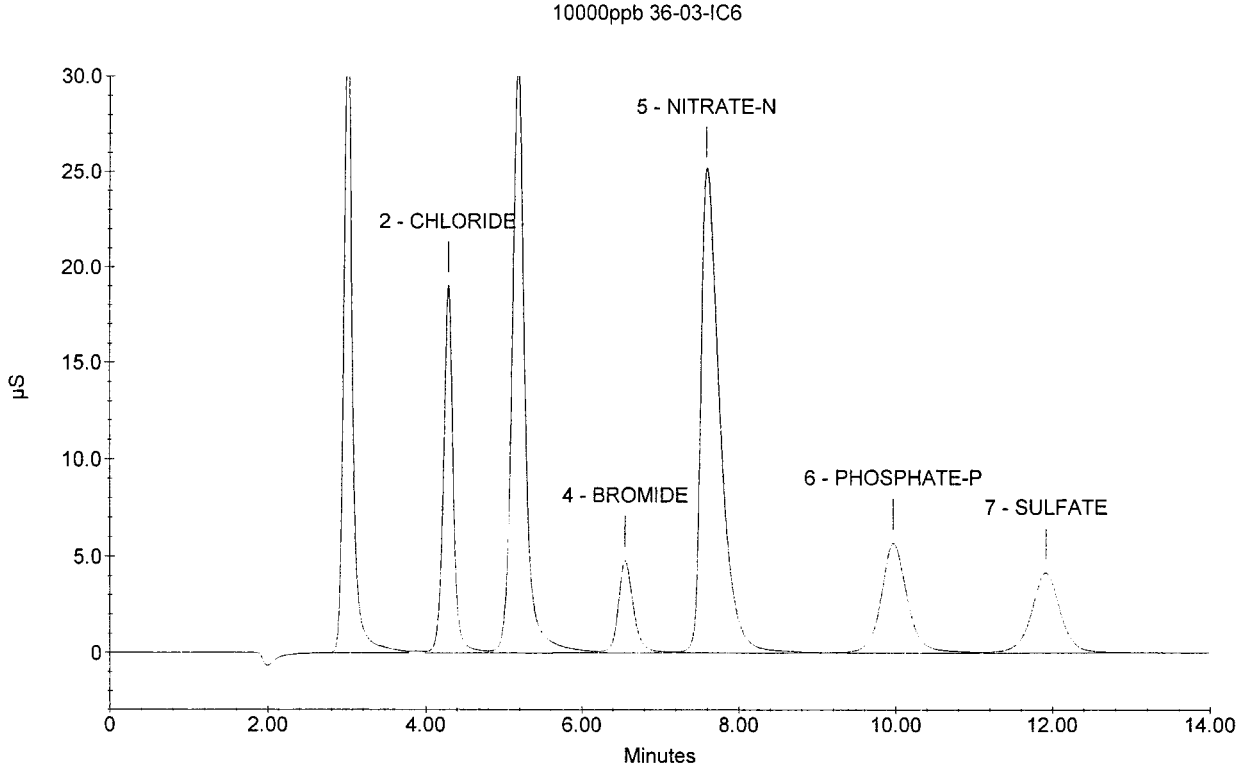
010064

Sample Name : 10000ppb 36-03-IC6
Dilution Factor : 1.00
Injection Number : 7
Data File Name : c:\peaknet\data\061121\061121_007.DXD
Method File Name : c:\peaknet\method\anions061121.met
Schedule File Name : c:\peaknet\schedule\061121.sch

Date Time Collected : 11/21/06 11:13:27 AM
Date Time Updated : 11/21/06 11:29:58 AM
System Name : Dx-500
Detector Name : Conductivity Detector
Column Type : AS14-SN#018097 AG14-#019940
System Operator : RSPIES

Peak Information : All Components

Peak Number	Peak Retention Time	Component Name	Concentration, ppm (PPB)	Peak Area	Peak Height
1	3.00	FLUORIDE	10000.00	2562619	333959
2	4.28	CHLORIDE	10000.00	1627259	190309
3	5.18	NITRITE-N	10000.00	3579861	308441
4	6.55	BROMIDE	10000.00	646876	47950
5	7.58	NITRATE-N	10000.00	4202641	250659
6	9.96	PHOSPHATE-P	10000.00	1346525	56771
7	11.91	SULFATE	10000.00	1077771	41538



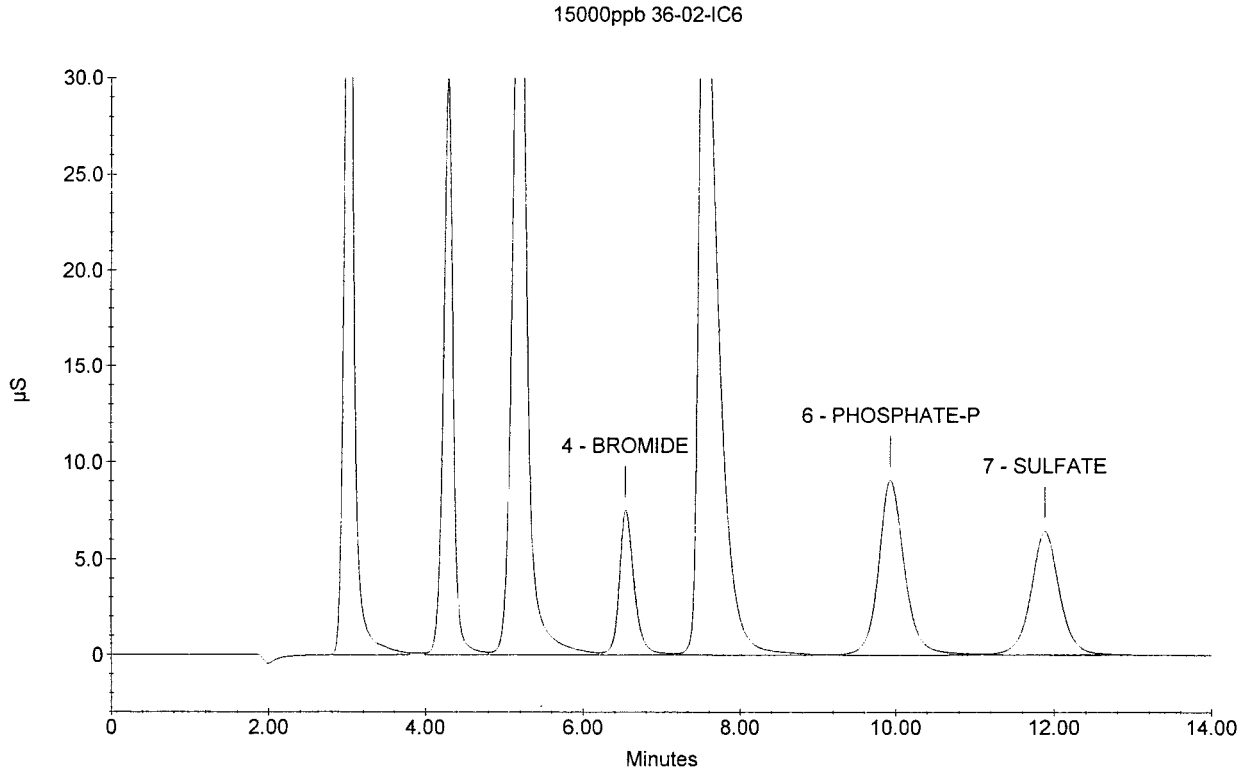
Sample Name : 15000ppb 36-02-IC6
Dilution Factor : 1.00
Injection Number : 8
Data File Name : c:\peaknet\data\061121\061121_008.DXD
Method File Name : c:\peaknet\method\anions061121.met
Schedule File Name : c:\peaknet\schedule\061121.sch

Date Time Collected : 11/21/06 11:30:03 AM
Date Time Updated : 11/21/06 11:46:36 AM
System Name : Dx-500
Detector Name : Conductivity Detector
Column Type : AS14-SN#018097 AG14-#019940
System Operator : RSPIES

010065

Peak Information : All Components

Peak Number	Peak Retention Time	Component Name	Concentration, ppm (PPB)	Peak Area	Peak Height
1	3.02	FLUORIDE	15000.00	3924796	508739
2	4.28	CHLORIDE	15000.00	2574669	293457
3	5.18	NITRITE-N	15000.00	5475503	453490
4	6.53	BROMIDE	15000.00	993907	74896
5	7.53	NITRATE-N	15000.00	6669133	393455
6	9.93	PHOSPHATE-P	15000.00	2093534	90624
7	11.88	SULFATE	15000.00	1638986	64372



Sample Name : 20000ppb 36-01-IC6
Dilution Factor : 1.00
Injection Number : 9
Data File Name : c:\peaknet\data\061121\061121_009.DXD
Method File Name : c:\peaknet\method\anions061121.met
Schedule File Name : c:\peaknet\schedule\061121.sch

Date Time Collected : 11/21/06 11:46:43 AM
Date Time Updated : 11/21/06 12:03:16 PM
System Name : Dx-500
Detector Name : Conductivity Detector
Column Type : AS14-SN#018097 AG14-#019940
System Operator : RSPIES

010066

Peak Information : All Components

Peak Number	Peak Retention Time	Component Name	Concentration, ppm (PPB)	Peak Area	Peak Height
1	3.02	FLUORIDE	20000.00	5250308	636965
2	4.30	CHLORIDE	20000.00	3569897	408450
3	5.20	NITRITE-N	20000.00	7341323	594634
4	6.52	BROMIDE	20000.00	1356694	102757
5	7.50	NITRATE-N	20000.00	9290814	538827
6	9.92	PHOSPHATE-P	20000.00	2902233	127550
7	11.88	SULFATE	20000.00	2244177	88802