010001

SOUTHWEST RESEARCH INSTITUTE
NUCLEAR PROJECT
CLIENT: Division 20
TASK ORDER: 050222-4
SRR: 27250
SDG: 259407
CASE: CNWRA
VTSR: February 21, 2005
PROJECT#: 06002.01.232

FINAL REPORT

SOUTHWEST RESEARCH INSTITUTE

SAMPLE ANALYSIS DATA SHEET

010002

Sample ID
19PBS-A1

Lab Name: Southwest Research Institute

Client: Division 20

Lab Code: SwRI

Date Received: 02/21/05

Matrix: Water

Project No.: 06002.01.232

Lab System ID: 259407

SRR: 27250

Task Order: 050222-4

Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Bromide	<0.1	0.1
Chloride	6.05	0.1
Fluoride	1.47	0.1
Nitrate-N	0.614	0.1
Nitrite-N	<0.1	0.1
Phosphate-P	0.0545	0.01
Sulfate	28.2	1

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SOUTHWEST RESEARCH INSTITUTE

DUPLICATE SUMMARY

010003

Sample ID
19PBS-A1

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 259407

Client: Division 20

Date Received: 02/21/05

Project No.: 06002.01.232

SRR: 27250

Task Order: 050222-4

Analysis	Sample Result (mg/L)	Duplicate Result (mg/L)	RPD
Bromide	<0.1	<0.1	0.00%
Chloride	6.05	6.03	0.33%
Fluoride	1.47	1.47	0.00%
Nitrate-N	0.614	0.599	2.47%
Nitrite-N	<0.1	<0.1	0.00%
Phosphate-P	0.0545	0.0512	6.24%
Sulfate	28.2	28.2	0.00%

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SOUTHWEST RESEARCH INSTITUTE

MATRIX SPIKE SUMMARY

010004

Sample ID
19PBS-A1

Lab Name: Southwest Research Institute

Client: Division 20

Lab Code: SwRI

Date Received: 02/21/05

Matrix: Water

Project No.: 06002.01.232

Lab System ID: 259407

SRR: 27250

Task Order: 050222-4

Analysis	Sample Result (mg/L)	Spike Result (mg/L)	Spike Added (mg/L)	Recovery
Bromide	<0.1	3.85	4.00	96.3%
Chloride	6.05	7.93	2.00	94.0%
Fluoride	1.47	2.37	1.00	90.0%
Nitrate-N	0.614	1.41	0.904	88.1%
Nitrite-N	<0.1	0.970	1.00	97.0%
Phosphate-P	0.0545	0.500	0.500	89.1%
Sulfate	28.2	67.8	40.0	99.0%

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SOUTHWEST RESEARCH INSTITUTE

SAMPLE ANALYSIS DATA SHEET

010005

Sample ID
19PBS-A2

Lab Name: Southwest Research Institute

Client: Division 20

Lab Code: SwRI

Date Received: 02/21/05

Matrix: Water

Project No.: 06002.01.232

Lab System ID: 259408

SRR: 27250

Task Order: 050222-4

Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Bromide	<0.1	0.1
Chloride	6.07	0.1
Fluoride	1.47	0.1
Nitrate-N	0.598	0.1
Nitrite-N	<0.1	0.1
Phosphate-P	0.0702	0.01
Sulfate	28.6	1

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SOUTHWEST RESEARCH INSTITUTE

SAMPLE ANALYSIS DATA SHEET

010006

Sample ID

19PBS-A3

Lab Name: Southwest Research Institute

Client: Division 20

Lab Code: SwRI

Date Received: 02/21/05

Matrix: Water

Project No.: 06002.01.232

Lab System ID: 259409

SRR: 27250

Task Order: 050222-4

Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Bromide	4.11	0.1
Chloride	1.94	0.1
Fluoride	0.979	0.1
Nitrate-N	0.874	0.1
Nitrite-N	<0.1	0.1
Phosphate-P	2.02	0.01
Sulfate	4.09	0.1

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SOUTHWEST RESEARCH INSTITUTE

LABORATORY CONTROL SAMPLE

010007

Sample ID
LCSW

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: NA

Client: Division 20

Date Received: NA

Project No.: 06002.01.232

SRR: 27250

Task Order: 050222-4

Analysis	Sample Result (mg/L)	True Value (mg/L)	Recovery
Bromide	421	400	105%
Chloride	207	200	104%
Fluoride	101	100	101%
Nitrate-N	90.3	90.4	99.9%
Nitrite-N	102	100	102%
Phosphate-P	8.78	8.81	99.7%
Sulfate	419	400	105%

NA- Not Applicable.

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SOUTHWEST RESEARCH INSTITUTE

BLANK SUMMARY

010008

Sample ID
PBW

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: NA

Client: Division 20

Date Received: NA

Project No.: 06002.01.232

SRR: 27250

Task Order: 050222-4

Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Bromide	<0.1	0.1
Chloride	<0.1	0.1
Fluoride	<0.1	0.1
Nitrate-N	<0.1	0.1
Nitrite-N	<0.1	0.1
Phosphate-P	<0.01	0.01
Sulfate	<0.1	0.1

NA- Not Applicable.

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SOUTHWEST RESEARCH INSTITUTE
NUCLEAR PROJECT
CLIENT: Division 20
TASK ORDER: 050222-4
SRR: 27250
SDG: 259407
CASE: CNWRA
VTSR: February 21, 2005
PROJECT#: 06002.01.232

010009

Task Orders/01-QPP-015

Southwest Research Institute

Laboratory Task Order

TO #: 050222-4 Revision: 1

SDG: 259407
VTSR: 02/21/05
CASE: CNWRA

SRR #'s: 27250
Client(s): Div. 20

Project(s): 06002.01.232
Manager(s): DAMMANN, MIKE
To PM: 03/21/05
To QA: 03/21/05
To Client: 03/22/05 010010

Instructions

DIVISION 20 - CNWRA. 4-WEEK TAT.
Point of Contact is BRADLEY WERLING (x6565). THREE samples received for ANIONS by IC and PHOSPHATES by 365.3
Work is 10 CFR 50 Appendix B, 10 CFR Part 21. CONTACT Charlie Butcher (ext. 5928, pager 271-5172) BEFORE STARTING ANY WORK ON THIS TASK ORDER. If Charlie Butcher is not available, contact MARK EHNSTROM (ext. 3530) or JO ANN BOYD (ext. 2169)
CONTACT PM WITH ANY ADDITIONAL QUESTIONS.
REVISION 1, 03/09/05: Removed test code TP_365.3 and replaced it with PO4_365.3. (dr030905)

Documents Related to this task order: 15912[COC 27250]

Test: IC-SWRI
Section: WETCHEM
Holding: 28 days from CED
Ion Chromatography by SwRI Method
Cnt: 3

System ID	Type	Cont	Matrix	Customer ID	CED	Method Date
259407		1	Water	19PBS-A1	21 Feb 05	21 Mar 05
259408		1	Water	19PBS-A2	21 Feb 05	21 Mar 05
259409		1	Water	19PBS-A3	21 Feb 05	21 Mar 05

Test: PO4_365.3
Section: WETCHEM
Holding: 2 days from CED
Phosphate by Method 365.3
Cnt: 3

System ID	Type	Cont	Matrix	Customer ID	CED	Method Date
259407		1	Water	19PBS-A1	21 Feb 05	23 Feb 05
259408		1	Water	19PBS-A2	21 Feb 05	23 Feb 05
259409		1	Water	19PBS-A3	21 Feb 05	23 Feb 05

ver 5/1/2005

CONTROLLED COPY
IF STAMP IS NOT RED, THIS DOCUMENT IS UNCONTROLLED

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

Document No. 3

Division 01

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

010012

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 Quality Assurance Manager	(210) 522-2169	6/4/04 DATE
REZA KARIMI Director, Department of Analytical and Environmental Chemistry	(210) 522-2412	6/4/04 DATE
MICHAEL G. MACNAUGHTON Vice President, Chemistry and Chemical Engineering Division	(210) 522-5162	6/4/04 DATE
CHRISTOPHER HOBSON Quality Assurance Engineer	(210) 522-5838	6/4/2004 DATE

010013

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010014

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

010015

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.

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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;

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(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*.

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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.

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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

010020

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: 050222-4
SRR: 27250
SDG: 259407
CASE: CNWRA
VTSR: February 21, 2005
PROJECT#: 06002.01.232

010021

Chain of Custody/Login Paperwork

15912

SAMPLE LIST/CHAIN OF CUSTODY

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

Shipper Name/Address: Bradley Werling
CNWRA - Div 20
Bldg. 57

Client:

Client Purchase Order/Other ID:

Site/Zone ID:

Requested Turnaround:
- ☐ 2 Weeks
- ☐ 3 Weeks
- ☒ Other: 4 weeks

SwRI Contact: Mike Damron

Analyses Requested

Sample ID	Sample Collection Date (mm/dd/yy)	Sample Collection Time	Matrix Type	Sample Type	# of Containers	Anions by IC except Phosphates	Phosphates by 365.3
19PTSS-A1	2/21/05		W		1	X	X
19PTSS-A2					1	X	X
19PTSS-A3					1	X	X

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) none

Nuclear Safety related - use appropriate QA procedures

POC - Brad Werling X6565 Fax 3184

1.20.06002.01.234

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

Comments:
696/2-4

Rec'd Intact

Relinquished by (Print/Signature)	Date	Time
X Jon Brown / [signature]	2/21/05	2:45 pm
Received by (Print/Signature)	Date	Time
Relinquished by (Print/Signature)	Date	Time
Received by (Print/Signature)	Date	Time
Relinquished by (Print/Signature)	Date	Time

SwRI Project#: 01.20.06002.01.234

Received by SwRI Lab: (Signature) [signature]

Date	Time
2/21/05	1440

Samples Disposed:

Date	Time

Samples Disposed by:

SRC# 27250

Div 01 COC Form 01-01-001, Rev 8/02

SAMPLE LOG-IN SHEET

010023

Lab Name: Southwest Research Institute	Page 1 of 1
Received By (Print Name): DINO ROMAN	Log-in Date: 02/21/2005
Received By (Signature): DR	
Case Number: CNWRA	Sample Delivery Group No.
Remarks: 06002.01.232	SAS Number: N/A

1.	Custody Seal(s)	Present/Absent* Intact/Broken
2.	Custody Seal Nos.	N/A
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	02/21/2005
12.	Time Received	14:45:00

EPA Sample #	Corresponding Sample Tag #	Corresponding Assigned Lab #	Remarks: Condition of Sample Shipment, etc
19PBS-A1	None	259407	Intact
19PBS-A2	None	259408	Intact
19PBS-A3	None	259409	Intact

Sample Transfer

Fraction: Inors.	Fraction:
Area #: Inors. Cab.	Area #:
By: DINO ROMAN	By:
On: 02/21/2005	On:

02.23.2005

* Contact SMO and attach record of resolution

Reviewed By: CYNTHIA A. SANFORD	Logbook No.: Sample Receipt (27250)
Date: 02.23.2005	Logbook Page No.: 5355 (SECTION 1 OF 1)

FORM DC-1

OLMO4.2

010024

SOUTHWEST RESEARCH INSTITUTE
NUCLEAR PROJECT
CLIENT: Division 20
TASK ORDER: 050222-4
SRR: 27250
SDG: 259407
CASE: CNWRA
VTSR: February 21, 2005
PROJECT#: 06002.01.232

Copies of Login Book

Sample Login Book

Feb 21, 2005

010025

SwRI Login Area
Division 1

Sample Receipt: 27250	Project: 06002.01.232	Client: Div. 20
VTSR Date: Feb 21, 2005	VTSR Time: 14:45:00	Manager: DAMMANN, MIKE

System ID	Customer Sample ID	Matrix
259407	19PBS-A1	Water
259408	19PBS-A2	Water
259409	19PBS-A3	Water

Sample Receipt: 27251	Project: 06002.01.242	Client: Div. 20
VTSR Date: Feb 21, 2005	VTSR Time: 14:45:00	Manager: DAMMANN, MIKE

System ID	Customer Sample ID	Matrix
259410	19PBS-C1	Water
259411	19PBS-C2	Water
259412	19PBS-C3	Water

Sample Receipt: 27252	Project: 10939.04.007	Client: Clarke American
VTSR Date: Feb 21, 2005	VTSR Time: 16:30:00	Manager: TAN, CK

System ID	Customer Sample ID	Matrix
259413	AP+P	Paper
259414	Koehler	Paper

Number of samples for today: 8

Number of Containers for today: 8

010026

SOUTHWEST RESEARCH INSTITUTE
NUCLEAR PROJECT
CLIENT: Division 20
TASK ORDER: 050222-4
SRR: 27250
SDG: 259407
CASE: CNWRA
VTSR: February 21, 2005
PROJECT#: 06002.01.232

RAW DATA

Work continued from Page

010027

59-01-IC5 20ppm Anions

Anion	Std Vol, mL	Conc Std mg/L	Source	Inorg #	Exp. Date
Fluoride	0.2mL	1000mg/L	SPEX	4951	1/15/2006
Chloride				4950	1/15/2006
Nitrite N				4480	3/15/2005
Bromide				4603	6/15/2005
Nitrate-N				4952	1/15/2006
Phosphate-P				4953	1/15/2006
Sulfate				4610	6/30/2005

— Diluted to 10mL DI H_2O.

59-02-IC5 15ppm Anions
3mL 59-01-IC5 + 1mL DI H_2O

59-03-IC5 10ppm Anions
2mL 59-01-IC5 + 2mL DI H_2O

59-04-IC5 5ppm Anions
2mL 59-03-IC5 + 2mL DI H_2O

59-05-IC5 1ppm Anions
1mL 59-04-IC5 + 4mL DI H_2O.

59-06-IC5 0.5ppm Anions
2.0mL 59-05-IC5 + 2mL DI H_2O

59-07-IC5 0.1ppm Anions
1.4mL 59-06-IC5 + 4mL DI H_2O.
RSS 3/1/05

59-08-IC5 0ppm Anions
DI H_2O

Eppendorfs:
5000L
200H
1000G

www.scientificbindery88yrs.com

Work continued to Page

SIGNATURE R Spres DATE 3/2/05

DISCLOSED TO AND UNDERSTOOD BY Michael Hardy DATE 3/28/05 WITNESS DATE

62 PROJECT NO. —
BOOK NO. IC5

TITLE Nitrite-N QC Std

Work continued from Page

010028

62-01-IC5 100 ppm Nitrite-N

1 mL Nitrite-N 1000 ppm (Inorg #4954) diluted to 10 mL DI H_2O.

Exp. 5/2/05 Eppendorf: 1000G

RSS

www.scientificbindery88yrs.com

Work continued to Page

SIGNATURE DATE 3/1/05

DISCLOSED TO AND UNDERSTOOD BY DATE 3/28/05 WITNESS DATE

13 051

Book/Page: _____

Southwest Research Institute

Dionex DX500 Ion Chromatography Daily Log

010029

Analyst: R Spurs

Date: 3/2/05

Conductivity: ~~18.0~~ 17.9

RSS 3/2/05

Client	Project #	TO #	Analytical Method
Calibration		050222-4	300
DIV20	06002.01.232	050302-3	300
EPA	06685.28.006	050228-4	300
	RSS 3/4/05		

Loop: 40ul

Method: anions 050302

Column: AS14 SN/018 097

Calibration: 3/2/05

Comments: Lot # 004 04137

ICV/CCV/MS:

Source: SPEX

Source: Nitrite-N

Lot/Inorg#: IN#4870

Lot/Inorg#: 62-01-1C5

CCV: 20x 0.25ml → 5ml

CCV: 20x 0.25ml → 5ml

MS: 50ul → 5ml sample

MS: 50ul → 5ml sample

✓ ELUENT SOLUTION PREP:

FV = 2.0L DI H20

1.0 mM Sodium Bicarbonate & 3.5 mM Sodium Carbonate

Weight: 0.168g $NaHCO_3$

Weight: 0.7419g Na_2HCO_3

Inorg#: #2626

Inorg#: 3757

— Other: Balance # 12

RSS 3/2/05

50 mA-Autoregen (ASRS)

— Other:

✓ 3/28/05

Southwest Research Institute

Electronic Bench Sheet

Phosphate - WATERS

RSpin 3/25/05

010030

Project #: 06002.01.232
Client: Div. 20
Method: EPA 365.3
TO#: 050222-4, 050302-3

Date: 03/11/05
Analyst: Michael Hardy
MDL: 0.010 mg/L
Sig Figs: 3

Calibration:

Standard Conc PO4-P, mg/L	Calc mg/L	Absorbance @650
0.000	-0.005	0.000
0.01	0.009	0.026
0.05	0.049	0.099
0.10	0.104	0.201
0.25	0.260	0.488
0.50	0.494	0.920
0.75	0.754	1.398

Regression Output:

Constant		-0.00521
Std Err of Y Est		0.006583
R Squared		0.9991
No. of Observations		6
Degrees of Freedom		4
X Coefficient(s)	0.54284	
Std Err of Coef.	0.00827	

Cal Source: Spex 7-145VY TV 1000 mg/L
ICV Source: ERA Simple Nutrients P115505 TV 1.82 mg/L
CCV Source: ERA Simple Nutrients P115505 TV 1.82 mg/L

NOTES: 259407S & 259577S were spiked with 0.05 mL of a 100 mg/L dilution of Spex 7-145VY.
TV = (0.05 mL) * (100 mg/L) / (10 mL) = 0.500 mgL

Final Volume Colored: 10 mL

Seq #	Sample ID	Aliquot Vol ml	Abs @650	PO4P mg/L	Comments
1	ICV	2.5	0.852	1.83	101% R, TV = 1.82 mg/L
2	ICB	10	0.008	<0.01	
3	LLC	10	0.053	0.0236	118% R, TV = 0.020 mg/L
4	259407	10	0.110	0.0545	
5	259407D	10	0.104	0.0512	6.24% RPD
6	259407S	10	0.931	0.500	89.1% R, TV = 0.500 mg/L
7	259408	10	0.139	0.0702	
8	259409	2	0.754	2.02	
9	CCV	2.5	0.837	1.80	98.9% R, TV = 1.82 mg/L
10	CCB	10	0.000	<0.01	
11	259577	10	0.047	0.0203	
12	259577D	10	0.041	0.0170	17.7% RPD
13	259577S	10	0.905	0.486	93.1% R, TV = 0.500 mg/L
14	259578	10	0.108	0.0534	
15	259579	10	0.051	0.0225	
16	PB	10	0.000	<0.01	
17	LCS	0.5	0.818	8.78	100% R, TV = 8.81 mg/L
18	ZZZZZZ	0.5	0.395	4.18	
19	ZZZZZZ	0.5	1.124	12.1	
20	CCV	2.5	0.793	1.70	93.4% R, TV = 1.82 mg/L
21	CCB	10	0.003	<0.01	

Sample calc 259409 =
(0.754 x 0.54284 - 0.00521) x 10/2 = 2.02mg/L

Sample Calc: (mg/L read from curve * Final Vol. Colored) / Aliquot Vol = mg/L PO4P

Southwest Research Institute
Logbook: Phosphate

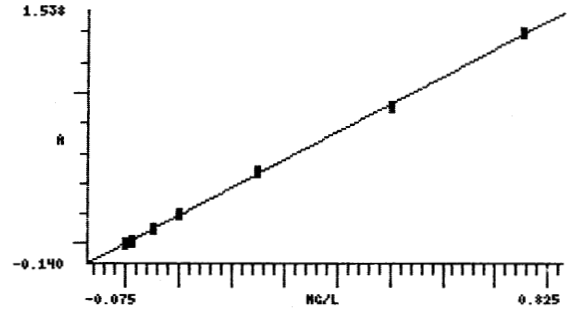
010031

Analysis / Method: EPA 365.3 Project# 06002-01-~~000~~ 232, 06355-47.006

Client: INEEL Div 20 WO# 050224-4, 050222-4, 050302-3

space provided for spectrophotometer printouts

STANDARD CURVE LINREGR



Slope=1.849 Intercept=0.009
StdDev=0.011022 Corr.Coef.=1.000

11 MAR 2005 13:19:18
Application: STANDARD CURVE
Model: LINREGR
Test name: PO4
ABS Correction: NONE
Wavelength: 650.0
Units: mg/L
Slope=1.849 Intercept=0.009
StdDev=0.011022 Corr.Coef.=1.000

Std	CONC	ABS
1	0.00000	0.000
2	0.010000	0.026
3	0.050000	0.099
4	0.10000	0.201
5	0.25000	0.488
6	0.50000	0.920
7	0.75000	1.398

3/11/05

ID	ABS	CONC
ICV4	0.852	0.45600
ID	ABS	CONC
ICB	0.008	-0.00057
ID	ABS	CONC
LLC	0.053	0.023771
ID	ABS	CONC
259407	0.110	0.054606
ID	ABS	CONC
259407D	0.104	0.051360
ID	ABS	CONC
259407S	0.931	0.49874
ID	ABS	CONC
259408	0.139	0.070294
ID	ABS	CONC
259409 5	0.754	0.40299
ID	ABS	CONC
CCV4	0.837	0.44789
ID	ABS	CONC
CCB	0.000	-0.00490
ID	ABS	CONC
259577	0.047	0.020525
ID	ABS	CONC
259577D	0.041	0.017280
ID	ABS	CONC
259577S	0.905	0.48467
ID	ABS	CONC
259578	0.108	0.053524
ID	ABS	CONC
259579	0.051	0.022689
ID	ABS	CONC
PB	0.000	-0.00490
ID	ABS	CONC
LCS 20	0.818	0.43761
ID	ABS	CONC
259471D20	0.395	0.20878
ID	ABS	CONC
259471S20	1.124	0.60314
ID	ABS	CONC
CCV ~~20~~ 4	0.793	0.42408
ID	ABS	CONC
CCB	0.003	-0.00328

3/11/05

3/11/05

(continued on 03 103)

Analyst Signature: [signature] Date: 3/11/05

Reviewed by: [signature] Date: 3/14/05

Logbook #/ Page # 03 102

Southwest Research Institute
Logbook: Phosphate

010032

Analysis / Method: EPA 365.3 Project# 06355.47.006 06002.01.232

Client: INEEL, D.V. 20 WO# 050224-4 050222-4 050302-3

space provided for spectrophotometer printouts

- Ammonium Molybdate / Antimony Potassium Tartrate
  See page 03 090

- Sulfuric Acid
  See page 03 090

- Ascorbic acid (Fisher Lot 033269)
  Dissolved 1.5104 g L-Ascorbic acid in 20 mL of DI water and diluted to 25 mL with DI water.
  Then added 0.05 mL acetone to preserve. (Fisher Lot 041648)

Balance #16
Pipettes:

(continued from 03 102)

Analyst Signature: [signature] Date: 3/11/05

Reviewed by: [signature] Date: 3/24/05

Logbook #/Page # 03 103

Div 20
06002.01.232
TO# 050222-4, 050302-3

3/22/05

Analyst: RSS
Method: 300
Sig Fig: 3

R Spies

010033

Date Analyzed	System ID	Analyte	Conc. mg/L	RESULT mg/L	Qual	DL	TV	%REC %RPD
03/02/05	259407	Fluoride	1.472	1.47		0.1		
03/02/05	259407	Chloride	6.045	6.05		0.1		
03/02/05	259407	Nitrite-N	0.000	0.1	U	0.1		
03/02/05	259407	Bromide	0.000	0.1	U	0.1		
03/02/05	259407	Nitrate-N	0.614	0.614		0.1		
03/02/05	259407	Phosphate-P	0.000	0.1	U	0.1		
03/02/05	259407	Sulfate	28.153	28.2		1		
03/02/05	259407D	Fluoride	1.470	1.47		0.1		0.00%
03/02/05	259407D	Chloride	6.028	6.03		0.1		0.33%
03/02/05	259407D	Nitrite-N	0.000	0.1	U	0.1		0.00%
03/02/05	259407D	Bromide	0.000	0.1	U	0.1		0.00%
03/02/05	259407D	Nitrate-N	0.599	0.599		0.1		2.47%
03/02/05	259407D	Phosphate-P	0.058	0.1	U	0.1		0.00%
03/02/05	259407D	Sulfate	28.224	28.2		1		0.00%
03/02/05	259407S	Fluoride	2.371	2.37		0.1	1	90.0%
03/02/05	259407S	Chloride	7.929	7.93		0.1	2	94.0%
03/02/05	259407S	Nitrite-N	0.970	0.970		0.1	1	97.0%
03/02/05	259407S	Bromide	3.848	3.85		0.1	4	96.3%
03/02/05	259407S	Nitrate-N	1.405	1.41		0.1	0.904	88.1%
03/02/05	259407S	Phosphate-P	1.797	1.80		0.1	1.91	94.2%
03/02/05	259407S	Sulfate	67.820	67.8		1	40	99.0%
03/02/05	259408	Fluoride	1.472	1.47		0.1		
03/02/05	259408	Chloride	6.065	6.07		0.1		
03/02/05	259408	Nitrite-N	0.000	0.1	U	0.1		
03/02/05	259408	Bromide	0.000	0.1	U	0.1		
03/02/05	259408	Nitrate-N	0.598	0.598		0.1		
03/02/05	259408	Phosphate-P	0.000	0.1	U	0.1		
03/02/05	259408	Sulfate	28.572	28.6		1		
03/02/05	259409	Fluoride	0.979	0.979		0.1		
03/02/05	259409	Chloride	1.941	1.94		0.1		
03/02/05	259409	Nitrite-N	0.000	0.1	U	0.1		
03/02/05	259409	Bromide	4.114	4.11		0.1		
03/02/05	259409	Nitrate-N	0.874	0.874		0.1		
03/02/05	259409	Phosphate-P	1.876	1.88		0.1		
03/02/05	259409	Sulfate	4.094	4.09		0.1		
03/02/05	259577	Fluoride	1.454	1.45		0.1		
03/02/05	259577	Chloride	10.563	10.6		0.1		
03/02/05	259577	Nitrite-N	0.000	0.1	U	0.1		
03/02/05	259577	Bromide	0.000	0.1	U	0.1		
03/02/05	259577	Nitrate-N	0.654	0.654		0.1		
03/02/05	259577	Phosphate-P	0.000	0.1	U	0.1		
03/02/05	259577	Sulfate	30.125	30.1		1		
03/02/05	259577D	Fluoride	1.396	1.40		0.1		3.51%
03/02/05	259577D	Chloride	10.526	10.5		0.1		0.95%
03/02/05	259577D	Nitrite-N	0.000	0.1	U	0.1		0.00%
03/02/05	259577D	Bromide	0.000	0.1	U	0.1		0.00%
03/02/05	259577D	Nitrate-N	0.648	0.648		0.1		0.92%
03/02/05	259577D	Phosphate-P	0.000	0.1	U	0.1		0.00%
03/02/05	259577D	Sulfate	29.928	29.9		1		0.67%
03/02/05	259577S	Fluoride	2.376	2.38		0.1	1	93.0%
03/02/05	259577S	Chloride	12.414	12.4		0.1	2	90.0%
03/02/05	259577S	Nitrite-N	1.012	1.01		0.1	1	101%
03/02/05	259577S	Bromide	4.085	4.09		0.1	4	102%

U = Undetected

* Phosphate Not Reported from IC run.

RSS
3/22/05

Div 20
06002.01.232
TO# 050222-4, 050302-3

Analyst: RSS
Method: 300
Sig Fig: 3

010034

Date Analyzed	System ID	Analyte	Conc. mg/L	RESULT mg/L	Qual	DL	TV	%REC %RPD
03/02/05	259577S	Nitrate-N	1.501	1.50		0.1	0.904	93.6%
03/02/05	259577S	Phosphate-P	1.848	1.85		0.1	1.91	96.9%
03/02/05	259577S	Sulfate	69.769	69.8		1	40	99.3%
03/02/05	259578	Fluoride	1.453	1.45		0.1		
03/02/05	259578	Chloride	10.536	10.5		0.1		
03/02/05	259578	Nitrite-N	0.000	0.1	U	0.1		
03/02/05	259578	Bromide	0.000	0.1	U	0.1		
03/02/05	259578	Nitrate-N	0.643	0.643		0.1		
03/02/05	259578	Phosphate-P	0.000	0.1	U	0.1		
03/02/05	259578	Sulfate	29.832	29.8		1		
03/02/05	259579	Fluoride	1.427	1.43		0.1		
03/02/05	259579	Chloride	6.082	6.08		0.1		
03/02/05	259579	Nitrite-N	0.000	0.1	U	0.1		
03/02/05	259579	Bromide	0.000	0.1	U	0.1		
03/02/05	259579	Nitrate-N	0.595	0.595		0.1		
03/02/05	259579	Phosphate-P	0.000	0.1	U	0.1		
03/02/05	259579	Sulfate	28.878	28.9		1		

U = Undetected

Div 20
06002.01.232
TO# 050222-4, 050302-3

Analyst: RSS
Method: 300
Sig Fig: 3

010035

Date Analyzed	System ID	Analyte	Conc. mg/L	RESULT mg/L	Qual	DL	TV	%REC %RPD
03/02/05	ICV (LCS)	Fluoride	101.457	101		0	100	101%
03/02/05	ICV (LCS)	Chloride	207.129	207		0.1	200	104%
03/02/05	ICV (LCS)	Nitrite-N	101.642	102		0.1	100	102%
03/02/05	ICV (LCS)	Bromide	420.565	421		0.1	400	105%
03/02/05	ICV (LCS)	Nitrate-N	90.335	90.3		0.1	90.4	99.9%
03/02/05	ICV (LCS)	Phosphate-P	198.235	198		0.1	191	104%
03/02/05	ICV (LCS)	Sulfate	419.438	419		0.1	400	105%
03/02/05	ICB (PB)	Fluoride	0.000	0.1	U	0.1		
03/02/05	ICB (PB)	Chloride	0.058	0.1	U	0.1		
03/02/05	ICB (PB)	Nitrite-N	0.000	0.1	U	0.1		
03/02/05	ICB (PB)	Bromide	0.000	0.1	U	0.1		
03/02/05	ICB (PB)	Nitrate-N	0.000	0.1	U	0.1		
03/02/05	ICB (PB)	Phosphate-P	0.000	0.1	U	0.1		
03/02/05	ICB (PB)	Sulfate	0.053	0.1	U	0.1		
03/02/05	CCV	Fluoride	100.584	101		0.1	100	101%
03/02/05	CCV	Chloride	205.751	206		0.1	200	103%
03/02/05	CCV	Nitrite-N	101.416	101		0.1	100	101%
03/02/05	CCV	Bromide	417.546	418		0.1	400	105%
03/02/05	CCV	Nitrate-N	89.821	89.8		0.1	90.4	99.3%
03/02/05	CCV	Phosphate-P	195.514	196		0.1	191	103%
03/02/05	CCV	Sulfate	411.890	412		0.1	400	103%
03/02/05	CCB	Fluoride	0.000	0.1	U	0.1		
03/02/05	CCB	Chloride	0.069	0.1	U	0.1		
03/02/05	CCB	Nitrite-N	0.000	0.1	U	0.1		
03/02/05	CCB	Bromide	0.000	0.1	U	0.1		
03/02/05	CCB	Nitrate-N	0.000	0.1	U	0.1		
03/02/05	CCB	Phosphate-P	0.000	0.1	U	0.1		
03/02/05	CCB	Sulfate	0.000	0.1	U	0.1		
03/02/05	CCV	Fluoride	102.712	103		0.1	100	103%
03/02/05	CCV	Chloride	208.978	209		0.1	200	105%
03/02/05	CCV	Nitrite-N	102.794	103		0.1	100	103%
03/02/05	CCV	Bromide	423.028	423		0.1	400	106%
03/02/05	CCV	Nitrate-N	91.074	91.1		0.1	90.4	101%
03/02/05	CCV	Phosphate-P	200.487	200		0.1	191	105%
03/02/05	CCV	Sulfate	422.731	423		0.1	400	106%
03/02/05	CCB	Fluoride	0.000	0.1	U	0.1		
03/02/05	CCB	Chloride	0.053	0.1	U	0.1		
03/02/05	CCB	Nitrite-N	0.000	0.1	U	0.1		
03/02/05	CCB	Bromide	0.000	0.1	U	0.1		
03/02/05	CCB	Nitrate-N	0.000	0.1	U	0.1		
03/02/05	CCB	Phosphate-P	0.000	0.1	U	0.1		
03/02/05	CCB	Sulfate	0.062	0.1	U	0.1		

U = Undetected

Schedule File: C:\PeakNet\schedule\050302.sch

Line	Sample	Sample Type	Level	Method	Data File	Dilution
1	BLK	Sample		anions050302.met	050302_001.dxd	1
2	STD 8 59-08-IC5	Calibration St	1	anions050302.met	050302_002.dxd	1
3	STD 7 59-07-IC5	Calibration St	2	anions050302.met	050302_003.dxd	1
4	STD 6 59-06-IC5	Calibration St	3	anions050302.met	050302_004.dxd	1
5	STD 5 59-05-IC5	Calibration St	4	anions050302.met	050302_005.dxd	1
6	STD 4 59-04-IC5	Calibration St	5	anions050302.met	050302_006.dxd	1
7	STD 3 59-03-IC5	Calibration St	6	anions050302.met	050302_007.dxd	1
8	STD 2 59-02-IC5	Calibration St	7	anions050302.met	050302_008.dxd	1
9	STD 1 59-01-IC5	Calibration St	8	anions050302.met	050302_009.dxd	1
10	ICV	Sample		anions050302.met	050302_010.dxd	20
11	ICB	Sample		anions050302.met	050302_011.dxd	1
12	259407	Sample		anions050302.met	050302_012.dxd	1
13	259407D	Sample		anions050302.met	050302_013.dxd	1
14	259407S	Sample		anions050302.met	050302_014.dxd	1
15	259408	Sample		anions050302.met	050302_015.dxd	1
16	259409	Sample		anions050302.met	050302_016.dxd	1
17	259577	Sample		anions050302.met	050302_017.dxd	1
18	259577D	Sample		anions050302.met	050302_018.dxd	1
19	259577S	Sample		anions050302.met	050302_019.dxd	1
20	259578	Sample		anions050302.met	050302_020.dxd	1
21	259579	Sample		anions050302.met	050302_021.dxd	1
22	CCV	Sample		anions050302.met	050302_022.dxd	20
23	CCB	Sample		anions050302.met	050302_023.dxd	1
24	259407 df10	Sample		anions050302.met	050302_024.dxd	10
25	259407D df10	Sample		anions050302.met	050302_025.dxd	10
26	259407S df10	Sample		anions050302.met	050302_026.dxd	10
27	259408 df10	Sample		anions050302.met	050302_027.dxd	10
28	259409 df10	Sample		anions050302.met	050302_028.dxd	10
29	259577 df10	Sample		anions050302.met	050302_029.dxd	10
30	259577D df10	Sample		anions050302.met	050302_030.dxd	10
31	259577S df10	Sample		anions050302.met	050302_031.dxd	10
32	259578 df10	Sample		anions050302.met	050302_032.dxd	10
33	259579 df10	Sample		anions050302.met	050302_033.dxd	10
34	CCV	Sample		anions050302.met	050302_034.dxd	20
35	CCB	Sample		anions050302.met	050302_035.dxd	1
36	259543	Sample		anions050302.met	050302_036.dxd	1
37	259543D	Sample		anions050302.met	050302_037.dxd	1
38	259543S	Sample		anions050302.met	050302_038.dxd	1
39	259545	Sample		anions050302.met	050302_039.dxd	1
40	259547	Sample		anions050302.met	050302_040.dxd	1
41	259549	Sample		anions050302.met	050302_041.dxd	1
42	259551	Sample		anions050302.met	050302_042.dxd	1
43	CCV	Sample		anions050302.met	050302_043.dxd	20
44	CCB	Sample		anions050302.met	050302_044.dxd	1
45	259543 df10	Sample		anions050302.met	050302_045.dxd	10
46	259543D df10	Sample		anions050302.met	050302_046.dxd	10
47	259543S df10	Sample		anions050302.met	050302_047.dxd	10
48	259545 df10	Sample		anions050302.met	050302_048.dxd	10
49	259547 df10	Sample		anions050302.met	050302_049.dxd	10
50	259549 df10	Sample		anions050302.met	050302_050.dxd	10
51	259551 df10	Sample		anions050302.met	050302_051.dxd	10
52	CCV	Sample		anions050302.met	050302_052.dxd	20
53	CCB	Sample		anions050302.met	050302_053.dxd	1
54	CCB	Sample		astop.met	050302	1

010036

Default Method Path: C:\PEAKNET\METHOD
Default Data Path: C:\PEAKNET\DATA\050302
Comment:
DIV 20 06002.01.232 TO#050222-4, 050302-3
EPA 06685.28.006 TO#050228-4

D Spaes 3/4/05

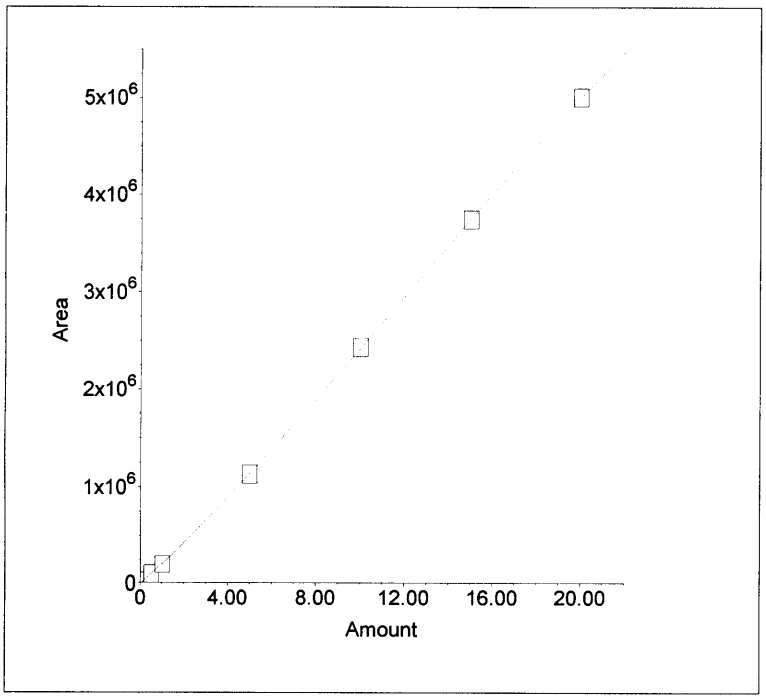
ICV Sources:
1) SPEX LOT#28-138AS (INORG# 4870)

F = 100 mg/L
Cl = 200 mg/L
Br = 400 mg/L
NO3N = 90.4 mg/L
PO4P = 191 mg/L
SO4 = 400 mg/L
2) 62-01-IC5
NO2N 100mg/L

010037

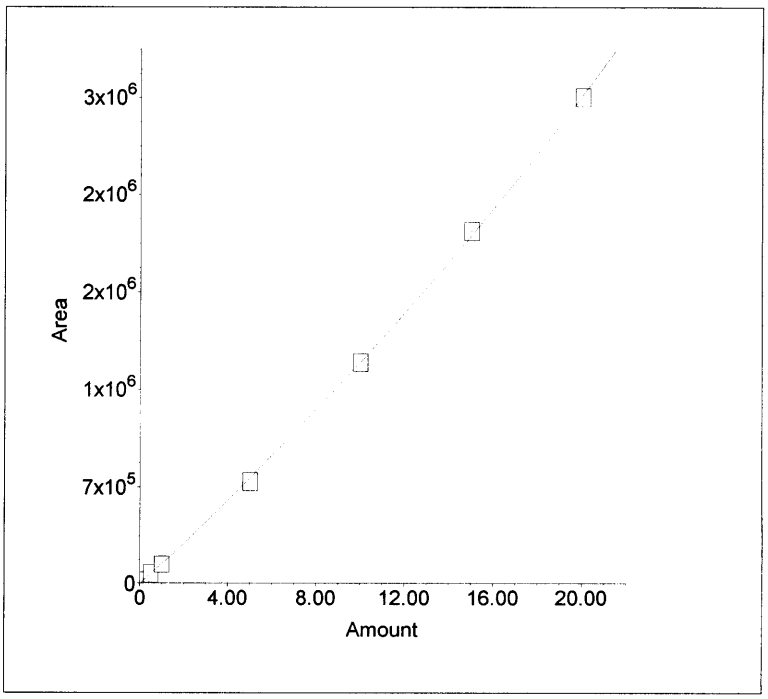
Method:C:\PEAKNET\METHOD\ANIONS050302.MET Updated:3/3/05 9:09:29 AM Total:7

1. Component:FLUORIDE
Standard:External Fit Type:Cubic
Origin:Ignore Calibration:Area
r^2=0.999983
Amt=2.498599e-020*Resp³+
-2.454890e-013*Resp²+
4.161358e-006*Resp+0.06743

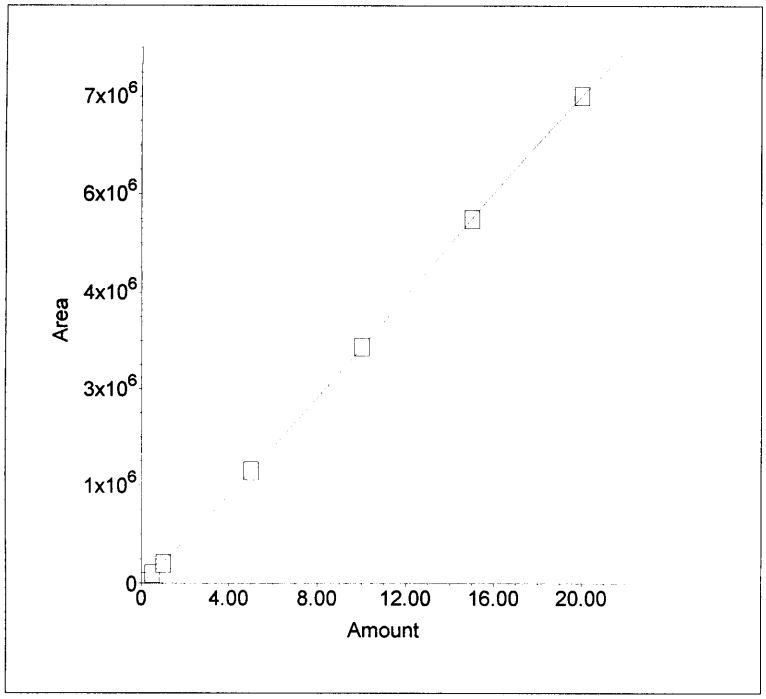


2. Component:CHLORIDE
Standard:External Fit Type:Quadratic
Origin:Include Calibration:Area
r^2=0.999861
Amt=-2.600127e-013*Resp²+
6.343445e-006*Resp+0.04841

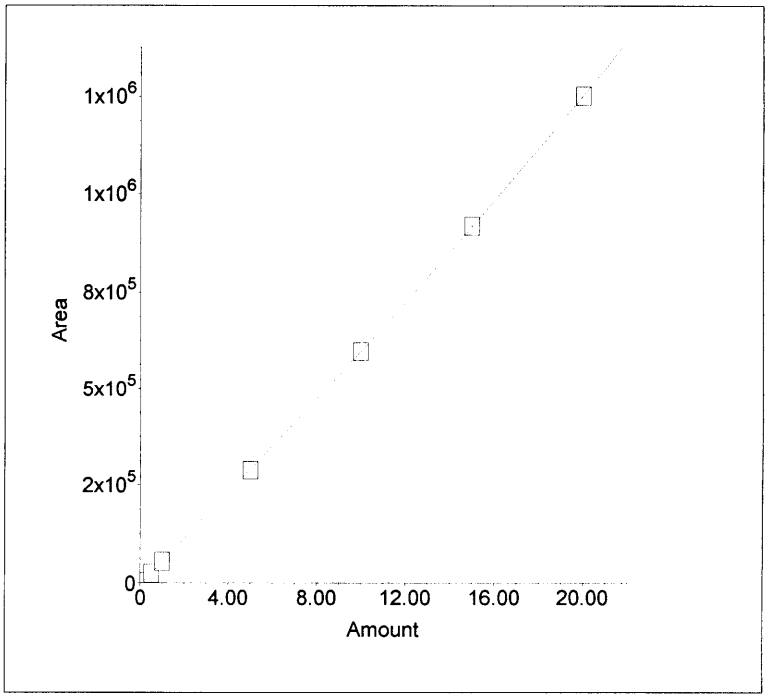
010038



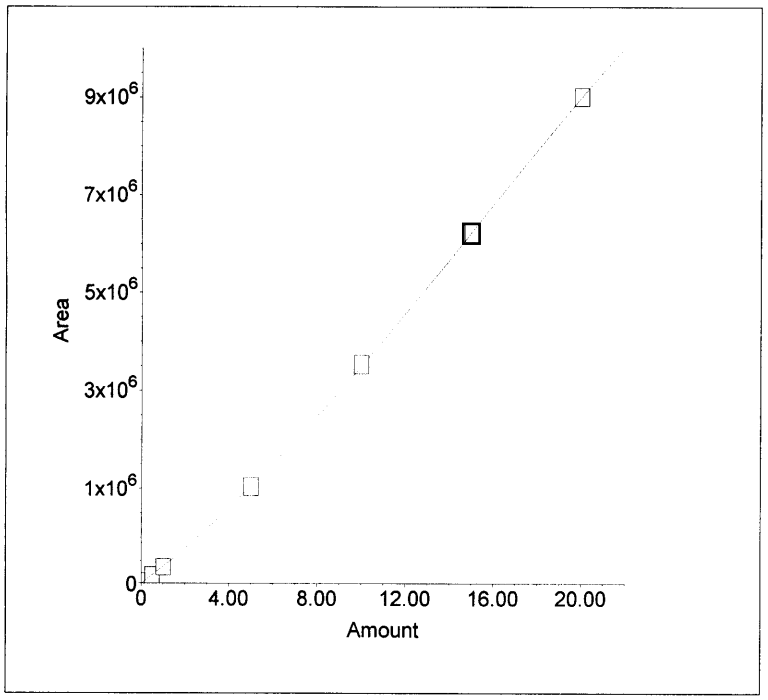
3. Component:NITRITE-N
Standard:External Fit Type:Cubic
Origin:Ignore Calibration:Area
r^2=0.999991
Amt=8.777003e-021*Resp³+
-1.184819e-013*Resp²+
2.991603e-006*Resp+0.04405



4. Component:BROMIDE
Standard:External Fit Type:Quadratic
Origin:Ignore Calibration:Area
r^2=0.999989
Amt=-8.677811e-013*Resp²+
1.514133e-005*Resp+0.06389

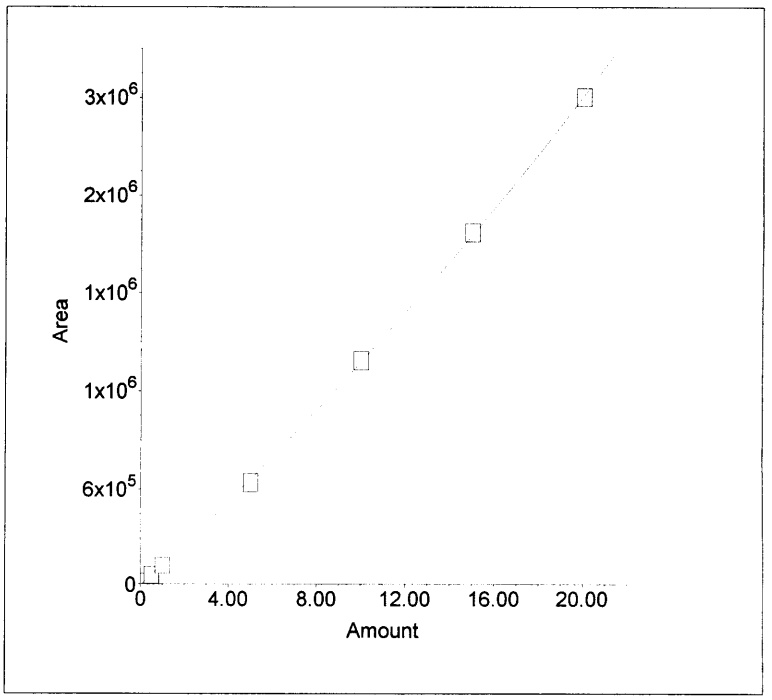


5. Component:NITRATE-N
Standard:External Fit Type:Cubic
Origin:Include Calibration:Area
r^2=0.999981
Amt=5.696868e-021*Resp^3+
-1.234729e-013*Resp^2+
2.689641e-006*Resp+0.02076

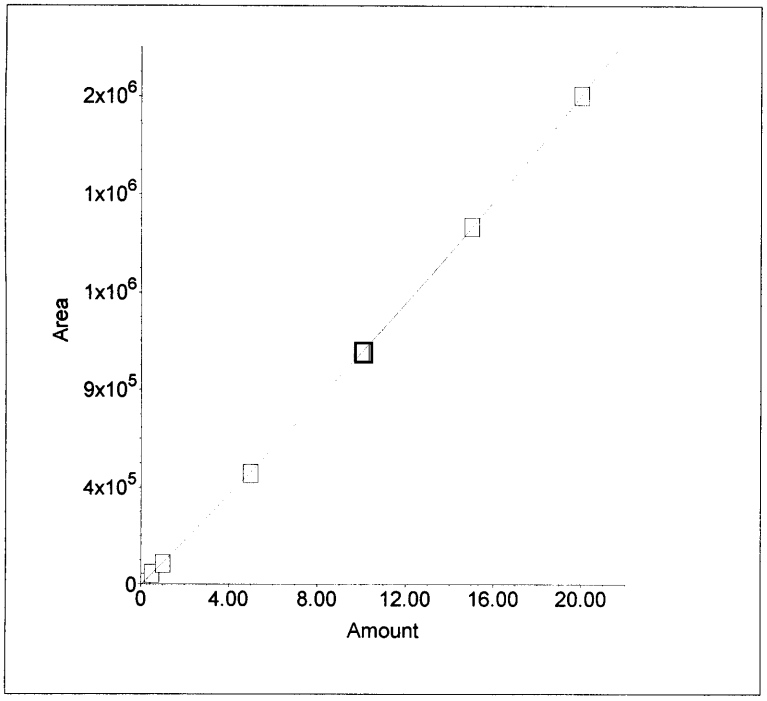


6. Component:PHOSPHATE-P
Standard:External Fit Type:Quadratic
Origin:Include Calibration:Area
r^2=0.999891
Amt=-3.357642e-013*Resp^2+
7.438606e-006*Resp+0.05495

010039



7. Component:SULFATE
Standard:External Fit Type:Quadratic
Origin:Ignore Calibration:Area
r^2=0.999976
Amt=-3.576137e-013*Resp^2+
9.368711e-006*Resp+0.04121



Sample Name : BLK
Dilution Factor : 1.00
Injection Number : 1
Data File Name : ...\050302_001.DXD
Method File Name : ...\ANIONS050302.met
Schedule File Name : c:\peaknet\schedule\050302.sch

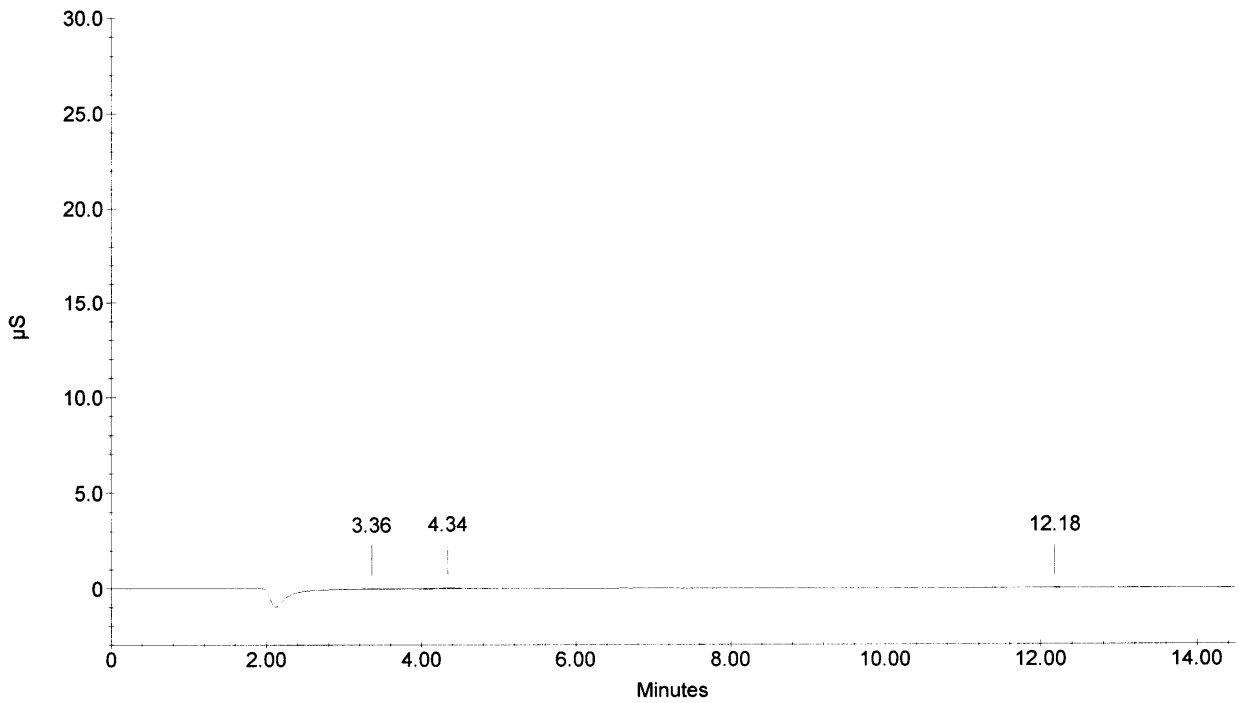
Date Time Collected : 3/2/05 10:40:11 AM
System Name : Dx-500
Detector Name : Conductivity Detector
Column Type : AS14-SN#018097 AG14-#019940
System Operator : rSPIES

010040

Peak Information : All Components

Pk. Num	Ret Time	Component Name	Concentration (ppm)	Height	Area	Bl. Code	%Delta
1	3.36		0.000	43	295	1	
2	4.34	CHLORIDE	0.090	531	6542	1	-0.91
		NITRITE-N					
		BROMIDE					
		NITRATE-N					
		PHOSPHATE-P					
3	12.18	SULFATE	0.056	83	1605	1	-0.33
			---total(s)---				
	0.00		0.146		8443		

BLK



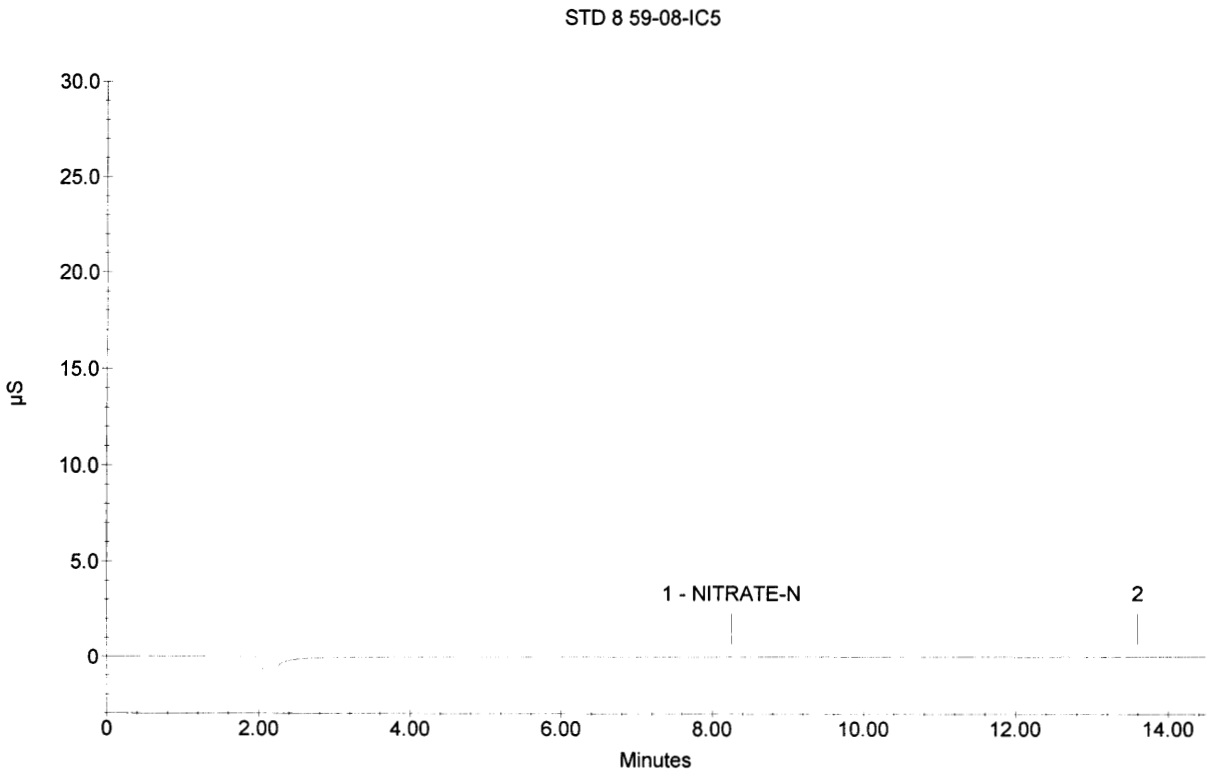
Sample Name : STD 8 59-08-IC5
Dilution Factor : 1.00
Injection Number : 2
Data File Name : ...\050302_002.DXD
Method File Name : ...\ANIONS050302.met
Schedule File Name : c:\peaknet\schedule\050302.sch

Date Time Collected : 3/2/05 10:57:33 AM
Date Time Updated : 3/3/05 8:43:43 AM
System Name : Dx-500
Detector Name : Conductivity Detector
Column Type : AS14-SN#018097 AG14-#019940
System Operator : rSPIES

010041

Peak Information : All Components

Peak Number	Peak Retention Time	Component Name	Concentration, ppm (ppm)	Peak Area	Peak Height
1	8.25	NITRATE-N CHLORIDE NITRITE-N BROMIDE	0.00	261	32
1	8.25	NITRATE-N PHOSPHATE-P SULFATE	0.00	261	32



Sample Name : STD 7 59-07-IC5
Dilution Factor : 1.00
Injection Number : 3
Data File Name : ...\050302_003.DXD
Method File Name : ...\ANIONS050302.met
Schedule File Name : c:\peaknet\schedule\050302.sch

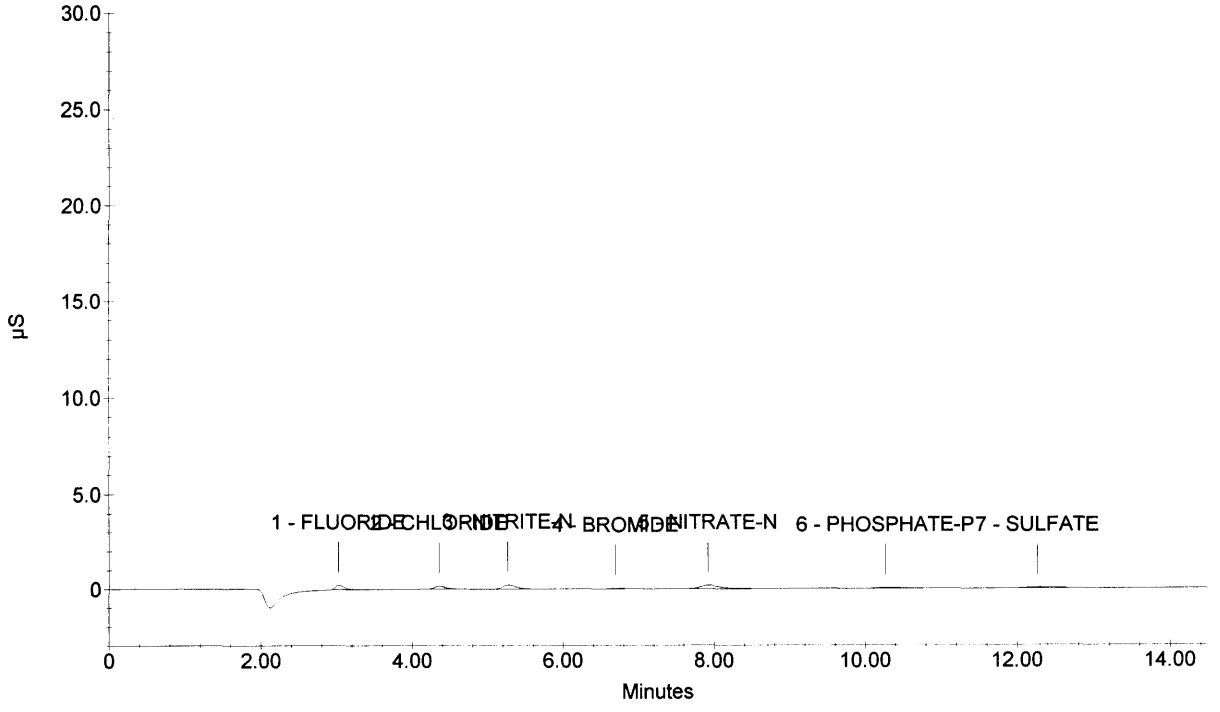
Date Time Collected : 3/2/05 11:14:46 AM
Date Time Updated : 3/3/05 9:06:52 AM
System Name : Dx-500
Detector Name : Conductivity Detector
Column Type : AS14-SN#018097 AG14-#019940
System Operator : rSPIES

010042

Peak Information : All Components

Peak Number	Peak Retention Time	Component Name	Concentration, ppm (ppm)	Peak Area	Peak Height
1	3.02	FLUORIDE	0.10	16124	2082
2	4.36	CHLORIDE	0.10	16346	1595
3	5.26	NITRITE-N	0.10	29539	2308
4	6.69	BROMIDE	0.10	4111	344
5	7.92	NITRATE-N	0.10	32827	1857
6	10.26	PHOSPHATE-P	0.10	12479	517
7	12.26	SULFATE	0.10	9822	401

STD 7 59-07-IC5



Sample Name : STD 6 59-06-IC5
Dilution Factor : 1.00
Injection Number : 4
Data File Name : ...\050302_004.DXD
Method File Name : ...\ANIONS050302.met
Schedule File Name : c:\peaknet\schedule\050302.sch

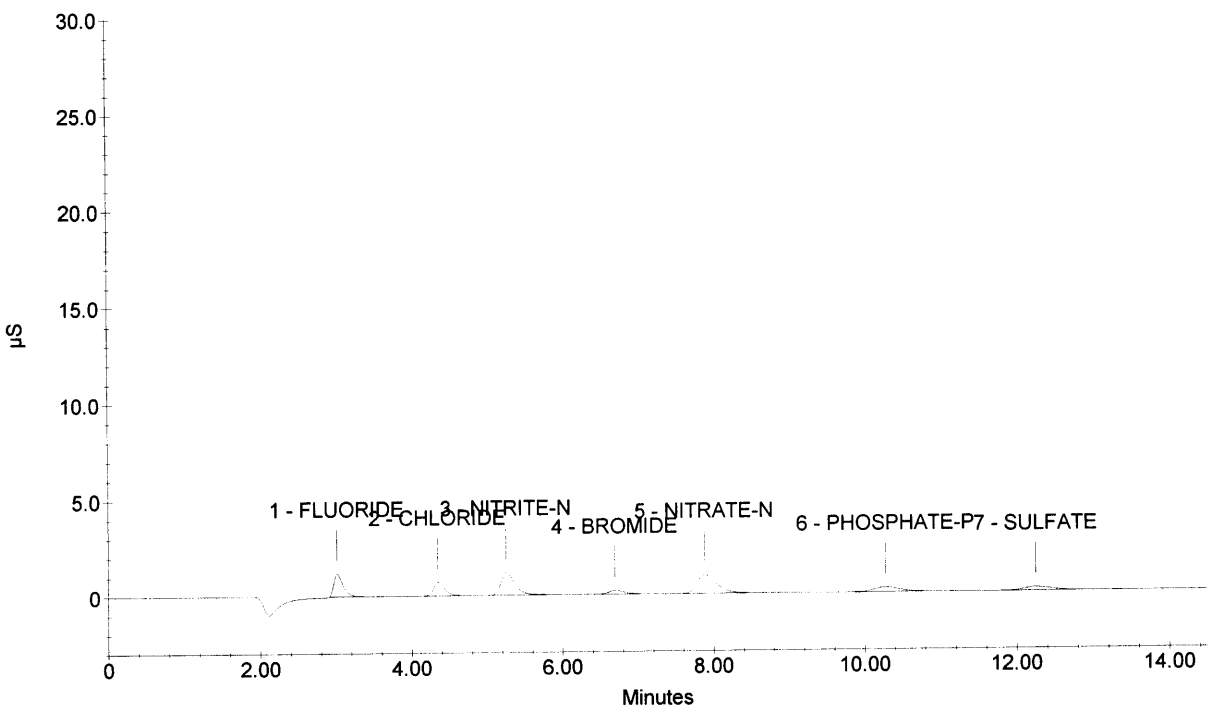
Date Time Collected : 3/2/05 11:32:00 AM
Date Time Updated : 3/3/05 9:10:35 AM
System Name : Dx-500
Detector Name : Conductivity Detector
Column Type : AS14-SN#018097 AG14-#019940
System Operator : rSPIES

010043

Peak Information : All Components

Peak Number	Peak Retention Time	Component Name	Concentration, ppm (ppm)	Peak Area	Peak Height
1	3.01	FLUORIDE	0.50	104232	11966
2	4.34	CHLORIDE	0.50	73477	7073
3	5.25	NITRITE-N	0.50	152298	11809
4	6.69	BROMIDE	0.50	28376	1969
5	7.88	NITRATE-N	0.50	176533	9718
6	10.28	PHOSPHATE-P	0.50	59766	2485
7	12.25	SULFATE	0.50	51745	1931

STD 6 59-06-IC5



Sample Name : STD 5 59-05-IC5
Dilution Factor : 1.00
Injection Number : 5
Data File Name : ...\050302_005.DXD
Method File Name : ...\ANIONS050302.met
Schedule File Name : c:\peaknet\schedule\050302.sch

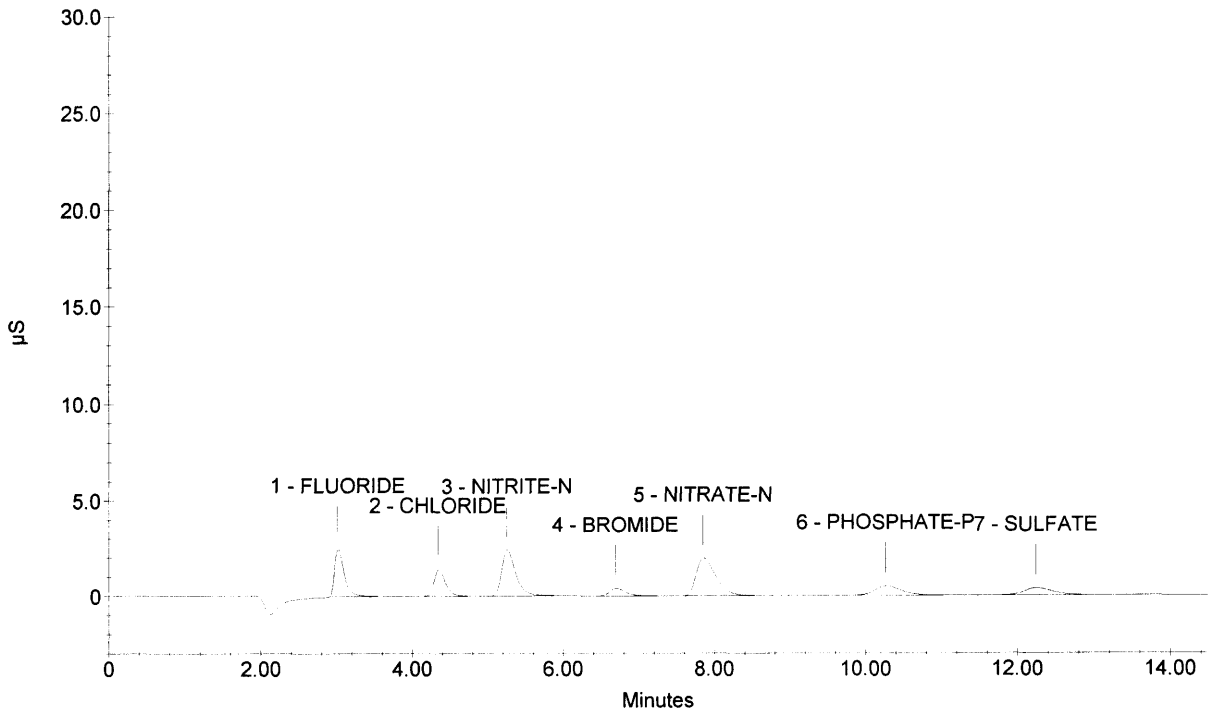
Date Time Collected : 3/2/05 11:49:15 AM
Date Time Updated : 3/3/05 9:10:35 AM
System Name : Dx-500
Detector Name : Conductivity Detector
Column Type : AS14-SN#018097 AG14-#019940
System Operator : rSPIES

010044

Peak Information : All Components

Peak Number	Peak Retention Time	Component Name	Concentration, ppm (ppm)	Peak Area	Peak Height
1	3.01	FLUORIDE	1.00	219738	24616
2	4.34	CHLORIDE	1.00	147609	14106
3	5.25	NITRITE-N	1.00	312790	24038
4	6.69	BROMIDE	1.00	62304	4049
5	7.85	NITRATE-N	1.00	355388	19700
6	10.26	PHOSPHATE-P	1.00	125368	5078
7	12.24	SULFATE	1.00	99632	3820

STD 5 59-05-IC5



Sample Name : STD 4 59-04-IC5
Dilution Factor : 1.00
Injection Number : 6
Data File Name : ...\050302_006.DXD
Method File Name : ...\ANIONS050302.met
Schedule File Name : c:\peaknet\schedule\050302.sch

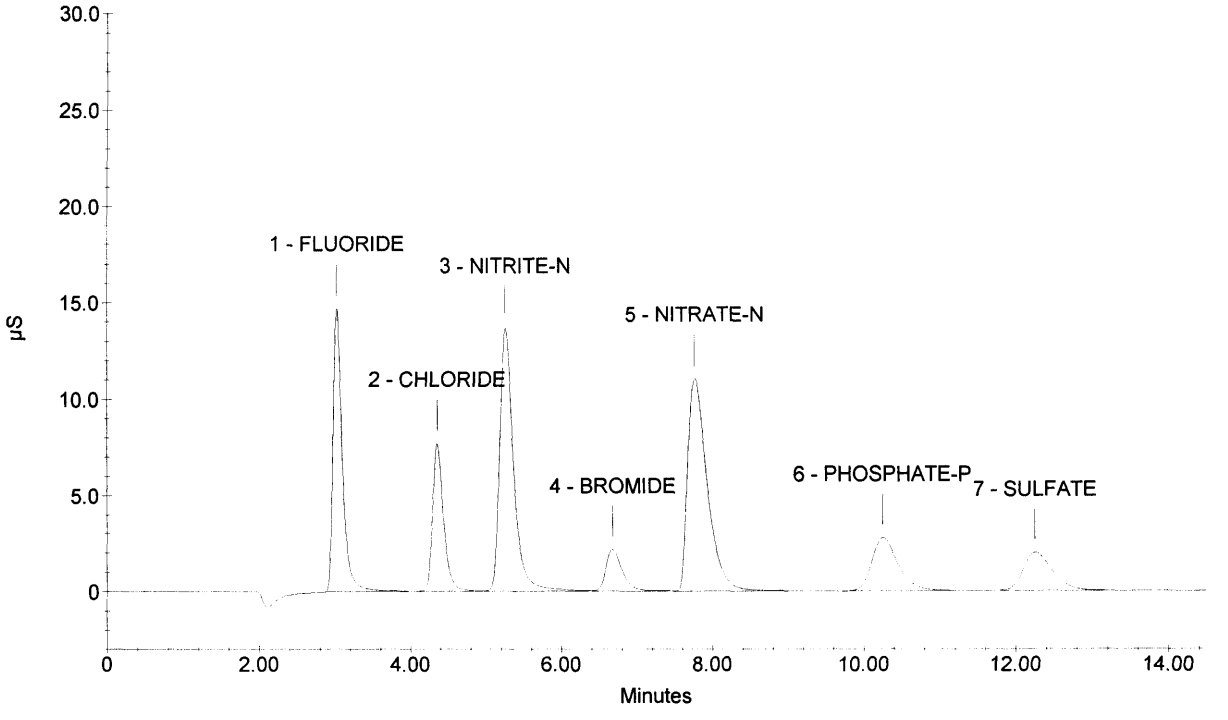
Date Time Collected : 3/2/05 12:06:30 PM
Date Time Updated : 3/3/05 9:10:36 AM
System Name : Dx-500
Detector Name : Conductivity Detector
Column Type : AS14-SN#018097 AG14-#019940
System Operator : rSPIES

010045

Peak Information : All Components

Peak Number	Peak Retention Time	Component Name	Concentration, ppm (ppm)	Peak Area	Peak Height
1	3.02	FLUORIDE	5.00	1260546	146678
2	4.36	CHLORIDE	5.00	779240	76821
3	5.25	NITRITE-N	5.00	1760043	135592
4	6.68	BROMIDE	5.00	329149	21689
5	7.76	NITRATE-N	5.00	2006195	110394
6	10.25	PHOSPHATE-P	5.00	662272	27726
7	12.25	SULFATE	5.00	532918	20035

STD 4 59-04-IC5



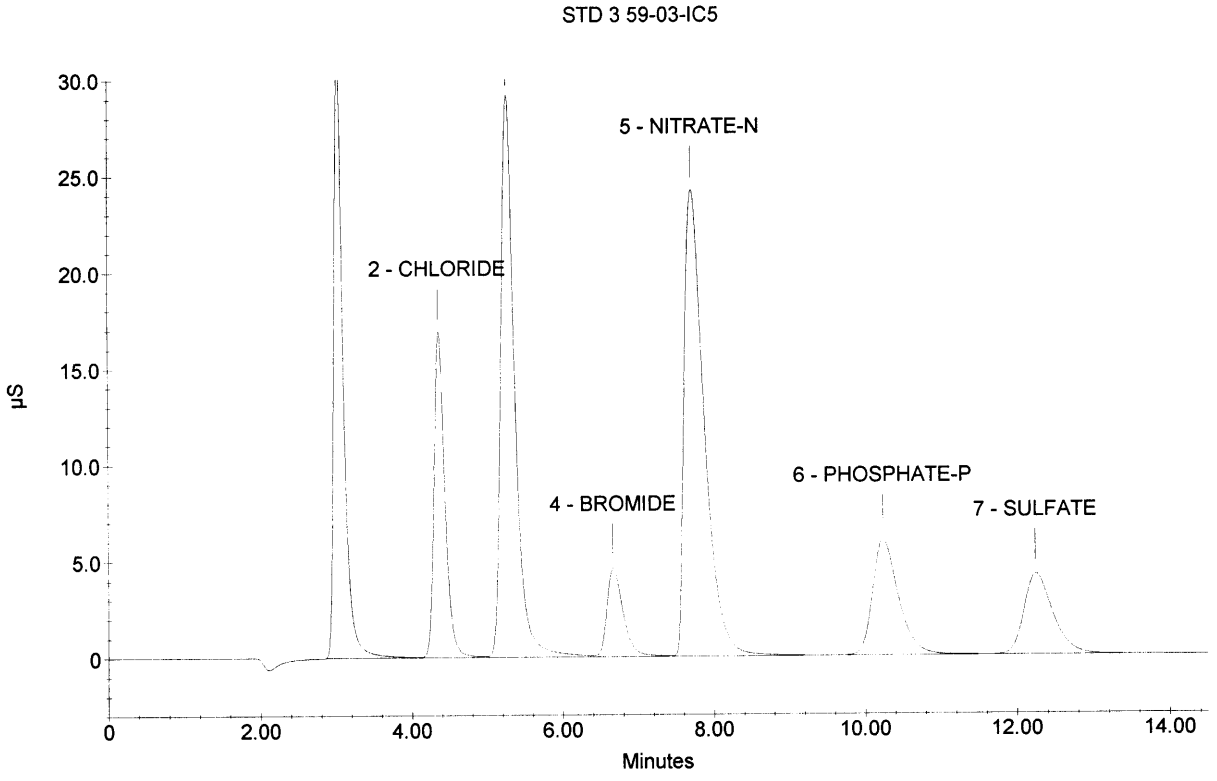
Sample Name : STD 3 59-03-IC5
Dilution Factor : 1.00
Injection Number : 7
Data File Name : ...\050302_007.DXD
Method File Name : ...\ANIONS050302.met
Schedule File Name : c:\peaknet\schedule\050302.sch

Date Time Collected : 3/2/05 12:23:44 PM
Date Time Updated : 3/3/05 9:10:36 AM
System Name : Dx-500
Detector Name : Conductivity Detector
Column Type : AS14-SN#018097 AG14-#019940
System Operator : rSPIES

010046

Peak Information : All Components

Peak Number	Peak Retention Time	Component Name	Concentration, ppm (ppm)	Peak Area	Peak Height
1	3.02	FLUORIDE	10.00	2712952	307837
2	4.36	CHLORIDE	10.00	1684813	168184
3	5.26	NITRITE-N	10.00	3736686	289623
4	6.66	BROMIDE	10.00	683712	45738
5	7.70	NITRATE-N	10.00	4455922	241307
6	10.24	PHOSPHATE-P	10.00	1435181	60094
7	12.24	SULFATE	10.00	1113465	41932



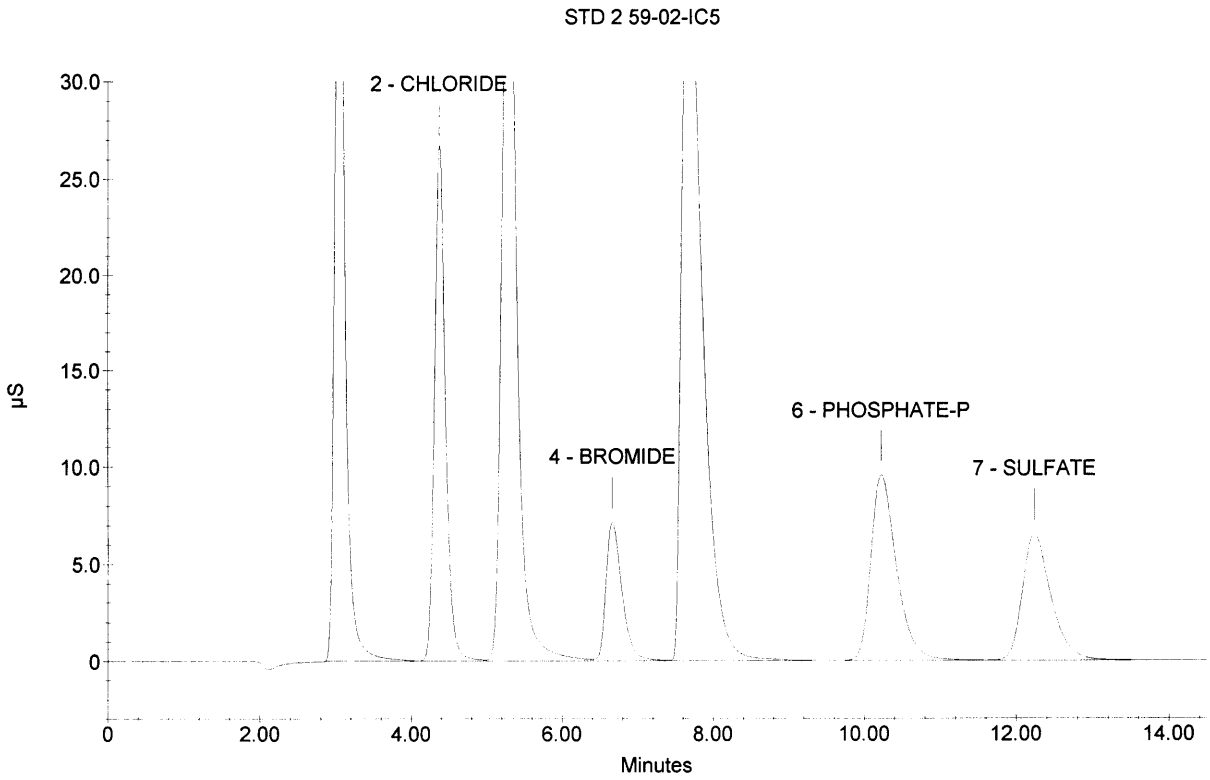
Sample Name : STD 2 59-02-IC5
Dilution Factor : 1.00
Injection Number : 8
Data File Name : ...\050302_008.DXD
Method File Name : ...\ANIONS050302.met
Schedule File Name : c:\peaknet\schedule\050302.sch

Date Time Collected : 3/2/05 12:41:02 PM
Date Time Updated : 3/3/05 9:10:36 AM
System Name : Dx-500
Detector Name : Conductivity Detector
Column Type : AS14-SN#018097 AG14-#019940
System Operator : rSPIES

010047

Peak Information : All Components

Peak Number	Peak Retention Time	Component Name	Concentration, ppm (ppm)	Peak Area	Peak Height
1	3.04	FLUORIDE	15.00	4170705	461253
2	4.37	CHLORIDE	15.00	2672189	264917
3	5.29	NITRITE-N	15.00	5743371	439788
4	6.66	BROMIDE	15.00	1051687	71502
5	7.68	NITRATE-N	15.00	7117497	379091
6	10.22	PHOSPHATE-P	15.00	2250157	95397
7	12.24	SULFATE	15.00	1711181	65218



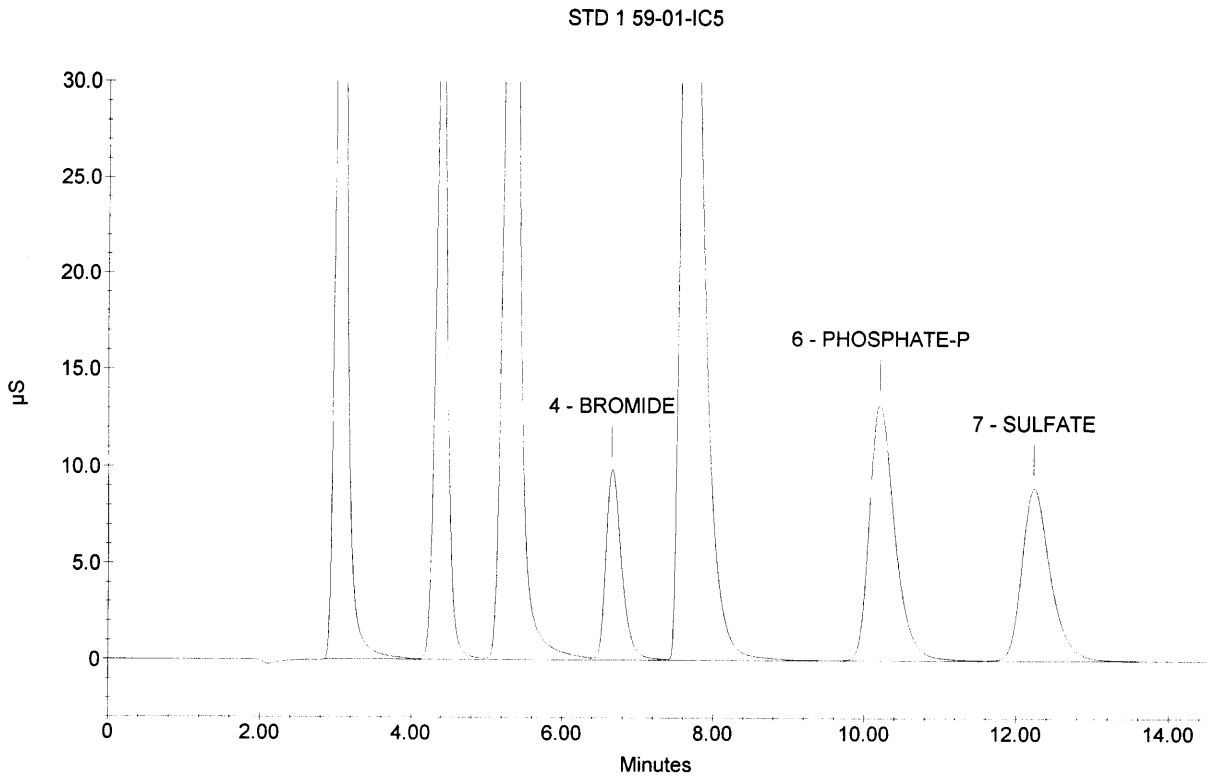
Sample Name : STD 1 59-01-IC5
Dilution Factor : 1.00
Injection Number : 9
Data File Name : ...\050302_009.DXD
Method File Name : ...\ANIONS050302.met
Schedule File Name : c:\peaknet\schedule\050302.sch

Date Time Collected : 3/2/05 12:58:21 PM
Date Time Updated : 3/3/05 9:10:37 AM
System Name : Dx-500
Detector Name : Conductivity Detector
Column Type : AS14-SN#018097 AG14-#019940
System Operator : rSPIES

010048

Peak Information : All Components

Peak Number	Peak Retention Time	Component Name	Concentration, ppm (ppm)	Peak Area	Peak Height
1	3.05	FLUORIDE	20.00	5586310	610021
2	4.38	CHLORIDE	20.00	3694038	363649
3	5.30	NITRITE-N	20.00	7679338	575695
4	6.65	BROMIDE	20.00	1433436	98026
5	7.64	NITRATE-N	20.00	9865809	514213
6	10.20	PHOSPHATE-P	20.00	3111711	132679
7	12.22	SULFATE	20.00	2337046	89349



Sample Name : ICV
Dilution Factor : 20.00
Injection Number : 10
Data File Name : ...\050302_010.DXD
Method File Name : ...\ANIONS050302.met
Schedule File Name : c:\peaknet\schedule\050302.sch

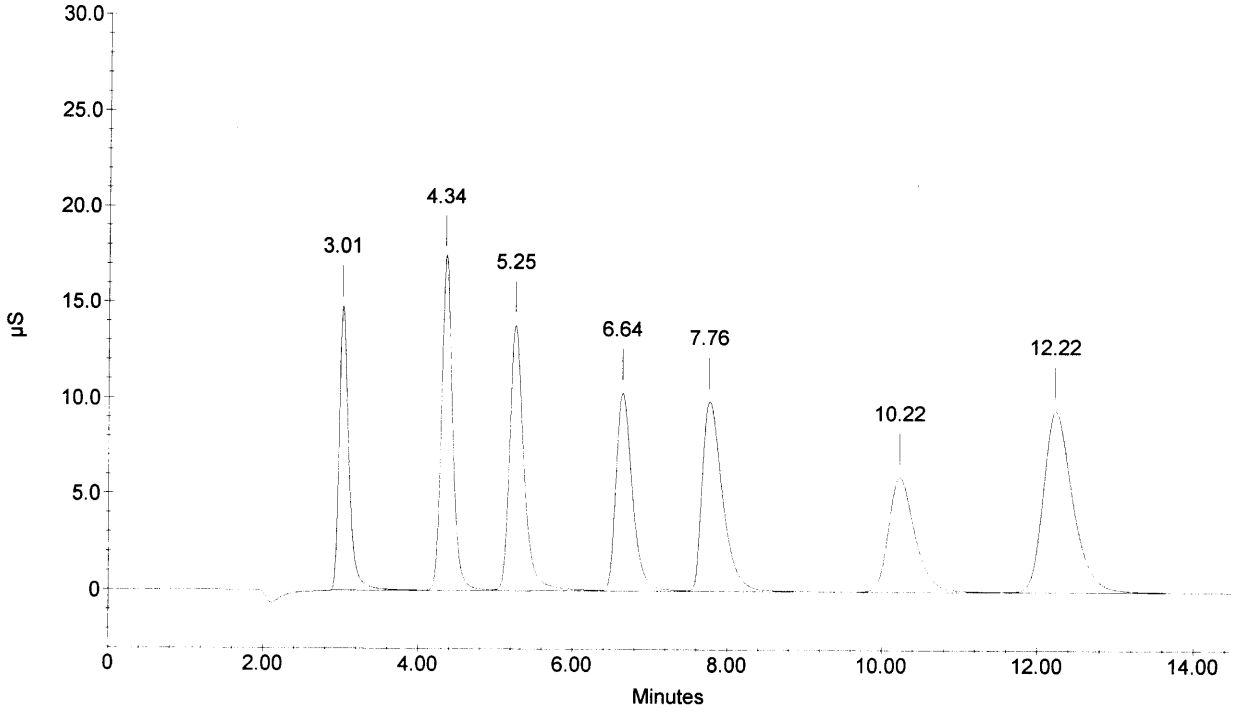
Date Time Collected : 3/2/05 1:15:40 PM
System Name : Dx-500
Detector Name : Conductivity Detector
Column Type : AS14-SN#018097 AG14-#019940
System Operator : rSPIES

010049

Peak Information : All Components

Pk. Num	Ret Time	Component Name	Concentration (ppm)	Height	Area	Bl. Code	%Delta
1	3.01	FLUORIDE	101.457	146043	1287850	1	-1.31
2	4.34	CHLORIDE	207.129	172234	1750609	2	-0.91
3	5.25	NITRITE-N	101.642	138121	1794667	2	-1.01
4	6.64	BROMIDE	420.565	103084	1516359	2	-0.20
5	7.76	NITRATE-N	90.335	98546	1809342	2	1.57
6	10.22	PHOSPHATE-P	198.235	59430	1415534	2	0.26
7	12.22	SULFATE	419.438	94199	2466285	2	0.00
	0.00		---total(s)--- 1538.802		12040645		

ICV



Sample Name : ICB
Dilution Factor : 1.00
Injection Number : 11
Data File Name : ...\050302_011.DXD
Method File Name : ...\ANIONS050302.met
Schedule File Name : c:\peaknet\schedule\050302.sch

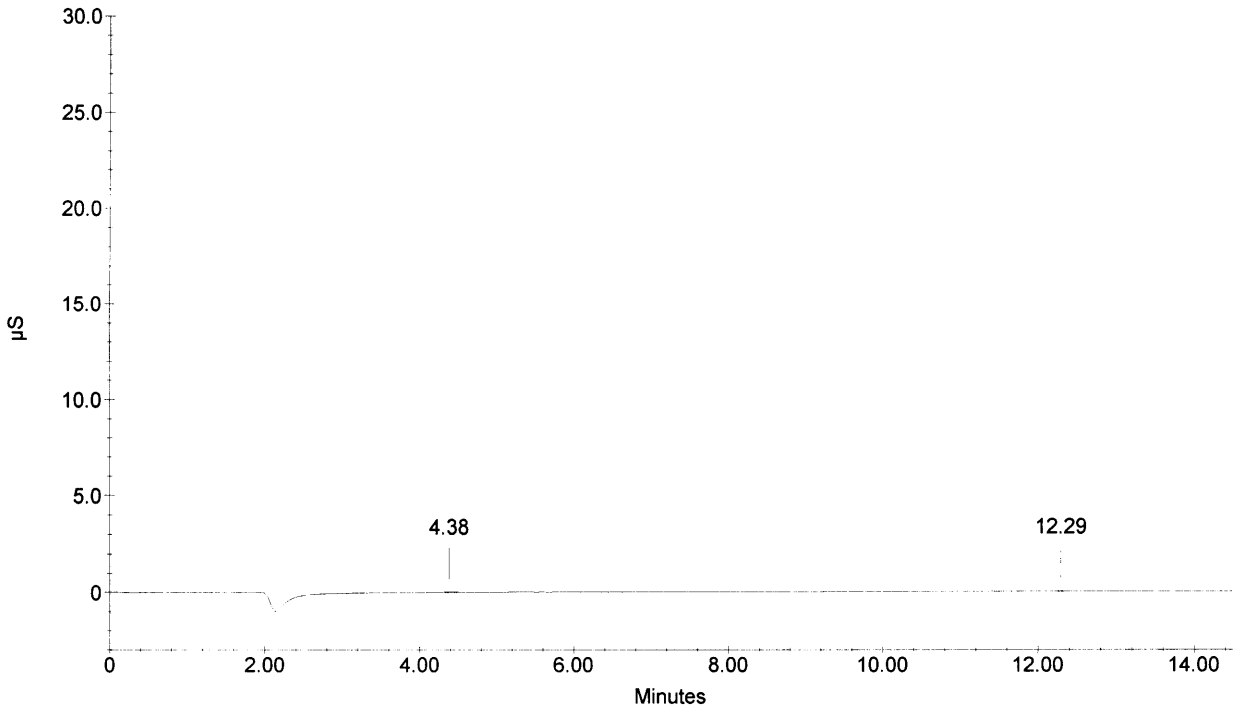
Date Time Collected : 3/2/05 1:33:00 PM
System Name : Dx-500
Detector Name : Conductivity Detector
Column Type : AS14-SN#018097 AG14-#019940
System Operator : rSPIES

010050

Peak Information : All Components

Pk. Num	Ret Time	Component Name	Concentration (ppm)	Height	Area	Bl. Code	%Delta
1	4.38	CHLORIDE	0.058	198	1589	1	0.00
1	4.38	CHLORIDE	0.058	198	1589	1	0.00
		NITRITE-N					
		BROMIDE					
		NITRATE-N					
		PHOSPHATE-P					
2	12.29	SULFATE	0.053	71	1241	1	0.55
			---total(s)---				
	0.00		0.170		4420		

ICB



Sample Name : 259407
Dilution Factor : 1.00
Injection Number : 12
Data File Name : ...\050302_012.DXD
Method File Name : ...\ANIONS050302.met
Schedule File Name : c:\peaknet\schedule\050302.sch

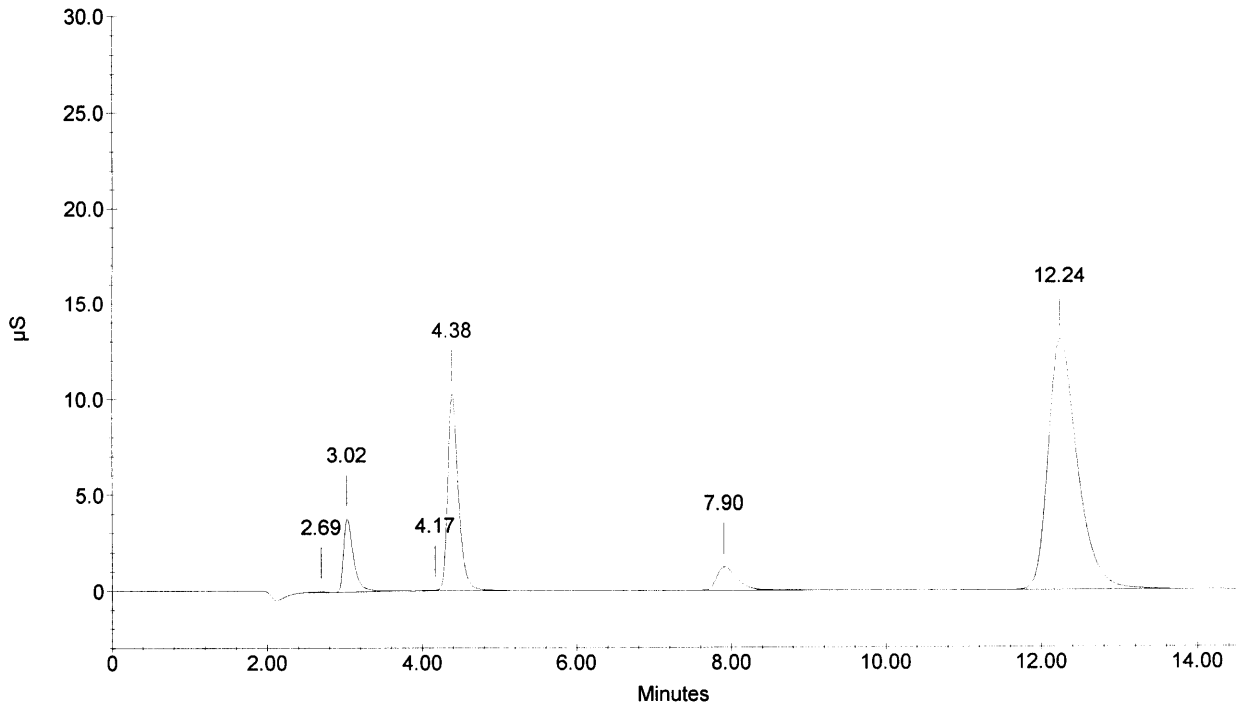
Date Time Collected : 3/2/05 1:50:16 PM
System Name : Dx-500
Detector Name : Conductivity Detector
Column Type : AS14-SN#018097 AG14-#019940
System Operator : rSPIES

010051

Peak Information : All Components

Pk. Num	Ret Time	Component Name	Concentration (ppm)	Height	Area	Bl. Code	%Delta
2	3.02	FLUORIDE	1.472	37782	344382	1	-0.87
4	4.38	CHLORIDE	6.045	102098	985112	2	0.00
		NITRITE-N					
		BROMIDE					
5	7.90	NITRATE-N	0.614	12015	222752	1	3.49
		PHOSPHATE-P					
6	12.24	SULFATE	27.711	130437	3392777	1	0.11
			---total(s)---				
	0.00		35.842		4945022		

259407



Sample Name : 259407D
Dilution Factor : 1.00
Injection Number : 13
Data File Name : ...\050302_013.DXD
Method File Name : ...\ANIONS050302.met
Schedule File Name : c:\peaknet\schedule\050302.sch

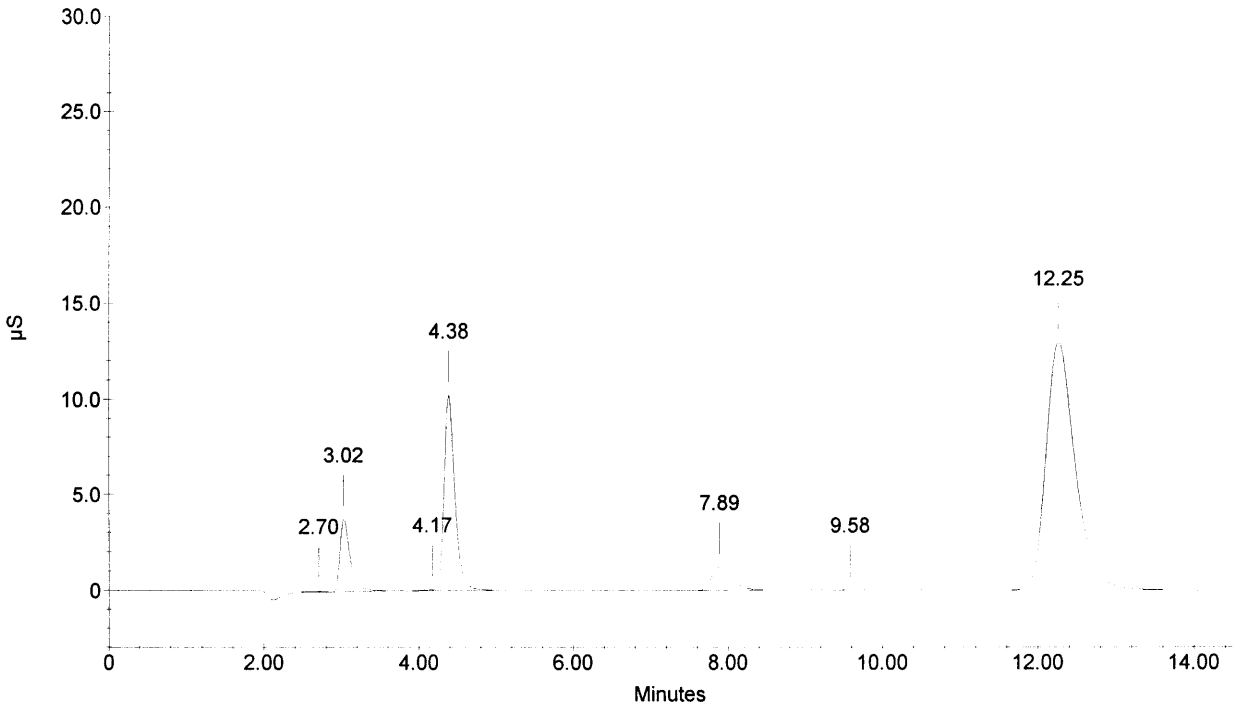
Date Time Collected : 3/2/05 2:07:35 PM
System Name : Dx-500
Detector Name : Conductivity Detector
Column Type : AS14-SN#018097 AG14-#019940
System Operator : rSPIES

010052

Peak Information : All Components

Pk. Num	Ret Time	Component Name	Concentration (ppm)	Height	Area	Bl. Code	%Delta
2	3.02	FLUORIDE	1.470	37679	343769	1	-0.87
4	4.38	CHLORIDE	6.028	102022	982102	2	0.00
		NITRITE-N					
		BROMIDE					
5	7.89	NITRATE-N	0.599	11964	217174	1	3.32
6	9.58	PHOSPHATE-P	0.058	53	462	1	-6.02
7	12.25	SULFATE	27.485	129189	3360255	1	0.22
			---total(s)---				
	0.00		35.640		4903760		

259407D



Sample Name : 259407S
Dilution Factor : 1.00
Injection Number : 14
Data File Name : ...\050302_014.DXD
Method File Name : ...\ANIONS050302.met
Schedule File Name : c:\peaknet\schedule\050302.sch

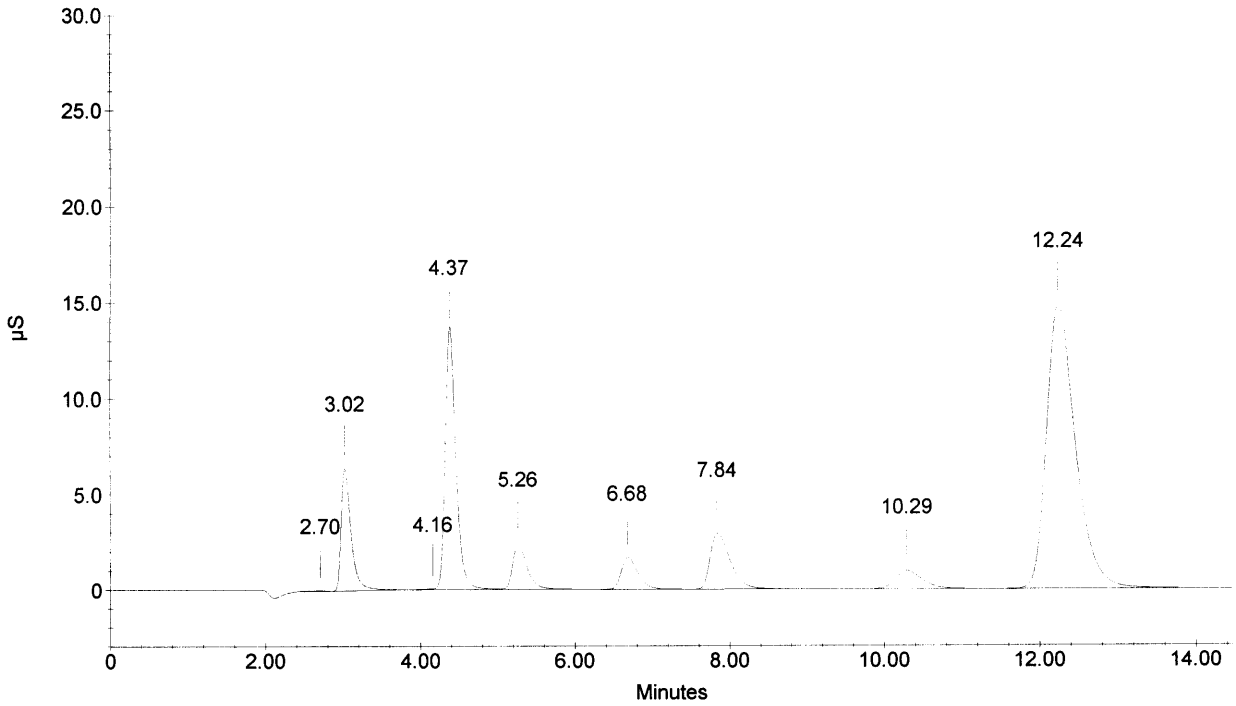
Date Time Collected : 3/2/05 2:25:05 PM
System Name : Dx-500
Detector Name : Conductivity Detector
Column Type : AS14-SN#018097 AG14-#019940
System Operator : rSPIES

010053

Peak Information : All Components

Pk. Num	Ret Time	Component Name	Concentration (ppm)	Height	Area	Bl. Code	%Delta
2	3.02	FLUORIDE	2.371	64075	571647	1	-0.87
4	4.37	CHLORIDE	7.929	134598	1313039	2	-0.30
5	5.26	NITRITE-N	0.970	23934	313404	2	-0.75
6	6.68	BROMIDE	3.848	16718	253604	1	0.40
7	7.84	NITRATE-N	1.405	29001	527001	1	2.62
8	10.29	PHOSPHATE-P	1.797	9666	236762	1	0.92
9	12.24	SULFATE	30.707	148096	3834502	1	0.11
			---total(s)---				
	0.00		49.028		7049958		

259407S



Sample Name : 259408
Dilution Factor : 1.00
Injection Number : 15
Data File Name : ...\050302_015.DXD
Method File Name : ...\ANIONS050302.met
Schedule File Name : c:\peaknet\schedule\050302.sch

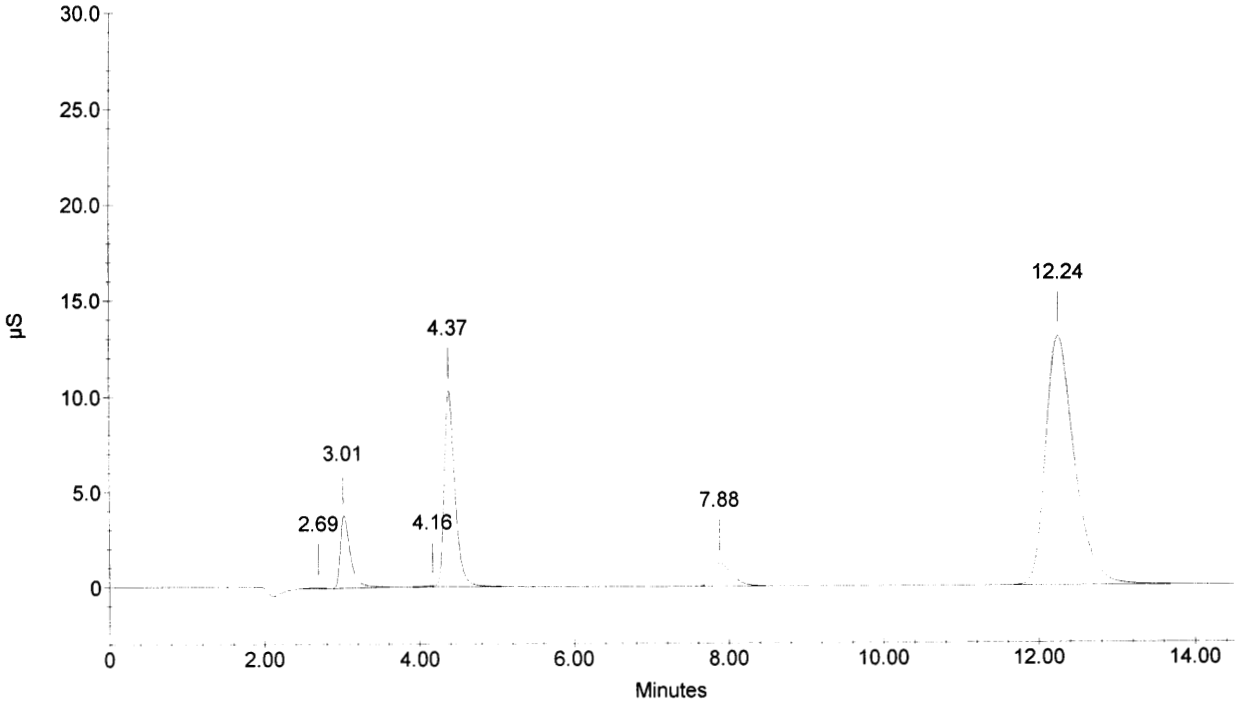
Date Time Collected : 3/2/05 2:42:25 PM
System Name : Dx-500
Detector Name : Conductivity Detector
Column Type : AS14-SN#018097 AG14-#019940
System Operator : rSPIES

010054

Peak Information : All Components

Pk. Num	Ret Time	Component Name	Concentration (ppm)	Height	Area	Bl. Code	%Delta
2	3.01	FLUORIDE	1.472✓	37193	344317	1	-1.31
4	4.37	CHLORIDE	6.065✓	102082	988489	2	-0.30
		NITRITE-N	✓				
		BROMIDE	✓				
5	7.88	NITRATE-N	0.598✓	12015	216831	1	3.14
		PHOSPHATE-P	✓				
6	12.24	SULFATE	27.599	130362	3376702	1	0.11
			---total(s)---				
	0.00		35.734		4926338		

259408



Sample Name : 259409
Dilution Factor : 1.00
Injection Number : 16
Data File Name : ...\050302_016.DXD
Method File Name : ...\ANIONS050302.met
Schedule File Name : c:\peaknet\schedule\050302.sch

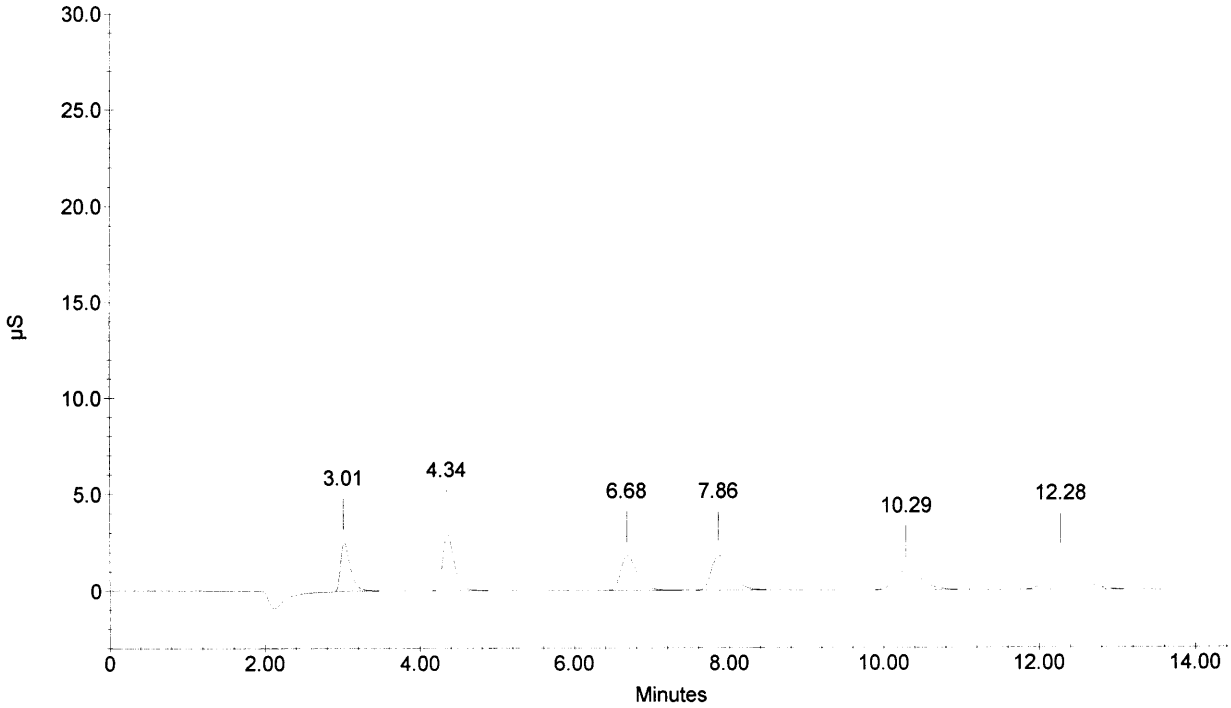
Date Time Collected : 3/2/05 2:59:44 PM
System Name : Dx-500
Detector Name : Conductivity Detector
Column Type : AS14-SN#018097 AG14-#019940
System Operator : rSPIES

010055

Peak Information : All Components

Pk. Num	Ret Time	Component Name	Concentration (ppm)	Height	Area	Bl. Code	%Delta
1	3.01	FLUORIDE	0.979	24830	221846	1	-1.31
2	4.34	CHLORIDE	1.941	29030	302154	1	-0.91
		NITRITE-N					
3	6.68	BROMIDE	4.114	17964	271685	2	0.40
4	7.86	NITRATE-N	0.874	17824	321847	2	2.97
5	10.29	PHOSPHATE-P	1.876	10323	247601	1	0.92
6	12.28	SULFATE	4.094	16564	439953	1	0.44
			---total(s)---				
	0.00		13.877		1805086		

259409



Sample Name : 259577
Dilution Factor : 1.00
Injection Number : 17
Data File Name : ...\050302_017.DXD
Method File Name : ...\ANIONS050302.met
Schedule File Name : c:\peaknet\schedule\050302.sch

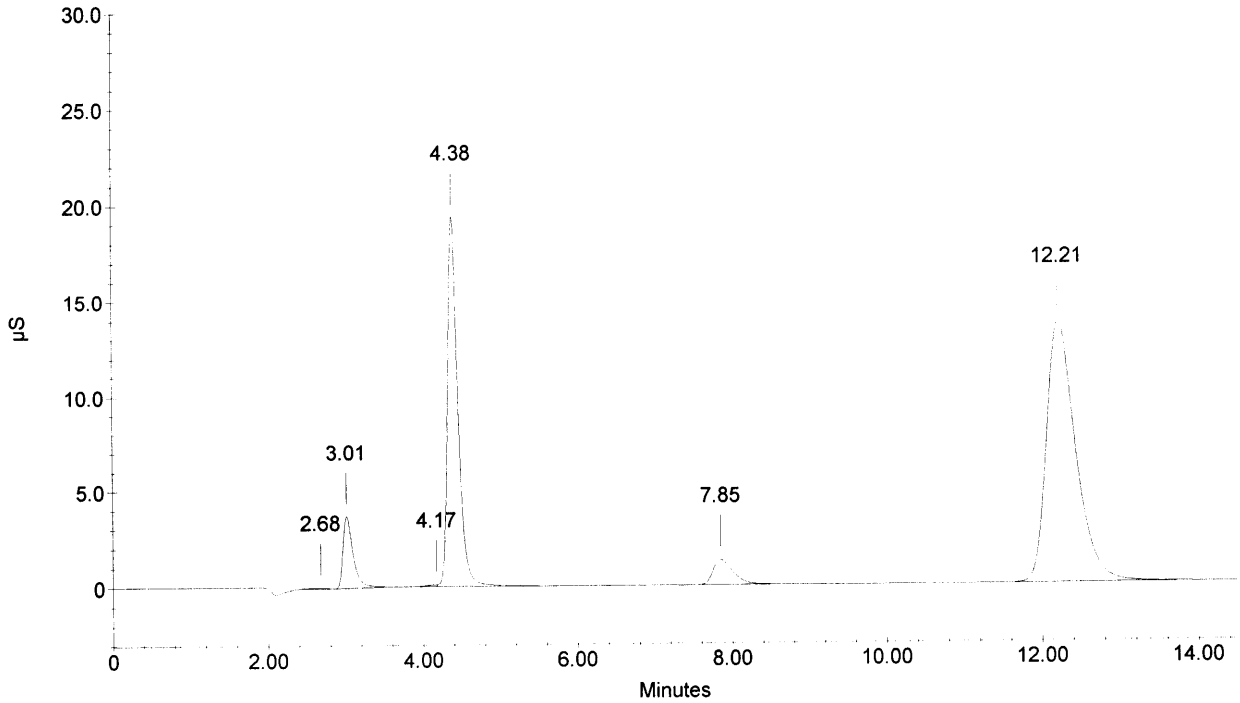
Date Time Collected : 3/2/05 3:16:58 PM
System Name : Dx-500
Detector Name : Conductivity Detector
Column Type : AS14-SN#018097 AG14-#019940
System Operator : rSPIES

010056

Peak Information : All Components

Pk. Num	Ret Time	Component Name	Concentration (ppm)	Height	Area	Bl. Code	%Delta
2	3.01	FLUORIDE	1.454 ✓	37094	339852	1	-1.31
4	4.38	CHLORIDE	10.563 ✓	192971	1788775	2	0.00
		NITRITE-N	✓				
		BROMIDE	✓				
5	7.85	NITRATE-N	0.654 ✓	13122	237969	1	2.79
		PHOSPHATE-P	✓				
6	12.21	SULFATE	28.884	137725	3563285	1	-0.11
			---total(s)---				
	0.00		41.556		5929881		

259577



Sample Name : 259577D
Dilution Factor : 1.00
Injection Number : 18
Data File Name : ...\050302_018.DXD
Method File Name : ...\ANIONS050302.met
Schedule File Name : c:\peaknet\schedule\050302.sch

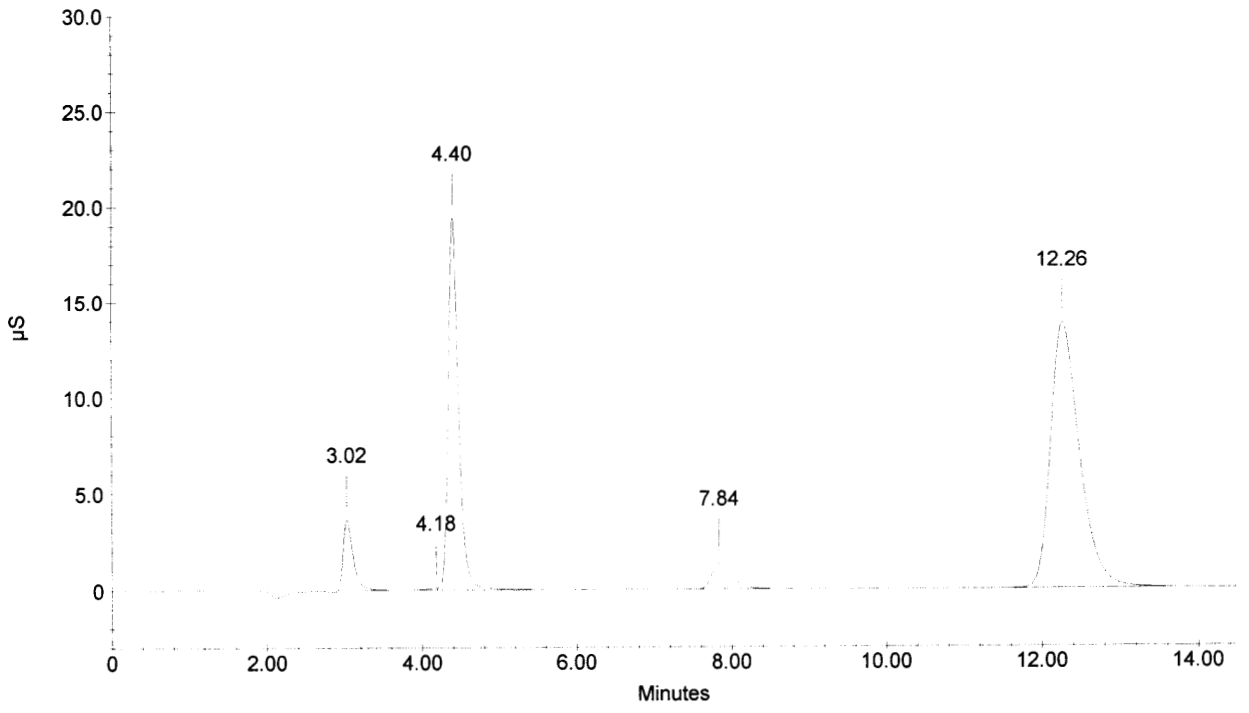
Date Time Collected : 3/2/05 3:34:13 PM
System Name : Dx-500
Detector Name : Conductivity Detector
Column Type : AS14-SN#018097 AG14-#019940
System Operator : rSPIES

010057

Peak Information : All Components

Pk. Num	Ret Time	Component Name	Concentration (ppm)	Height	Area	Bl. Code	%Delta
1	3.02	FLUORIDE	1.396	36332	325187	1	-0.87
3	4.40	CHLORIDE	10.526	193941	1781849	2	0.30
		NITRITE-N					
		BROMIDE					
4	7.84	NITRATE-N	0.648	13144	235880	1	2.62
		PHOSPHATE-P					
5	12.26	SULFATE	28.867	137780	3560737	1	0.33
			---total(s)---				
	0.00		41.436		5903653		

259577D



Sample Name : 259577S
Dilution Factor : 1.00
Injection Number : 19
Data File Name : ...\050302_019.DXD
Method File Name : ...\ANIONS050302.met
Schedule File Name : c:\peaknet\schedule\050302.sch

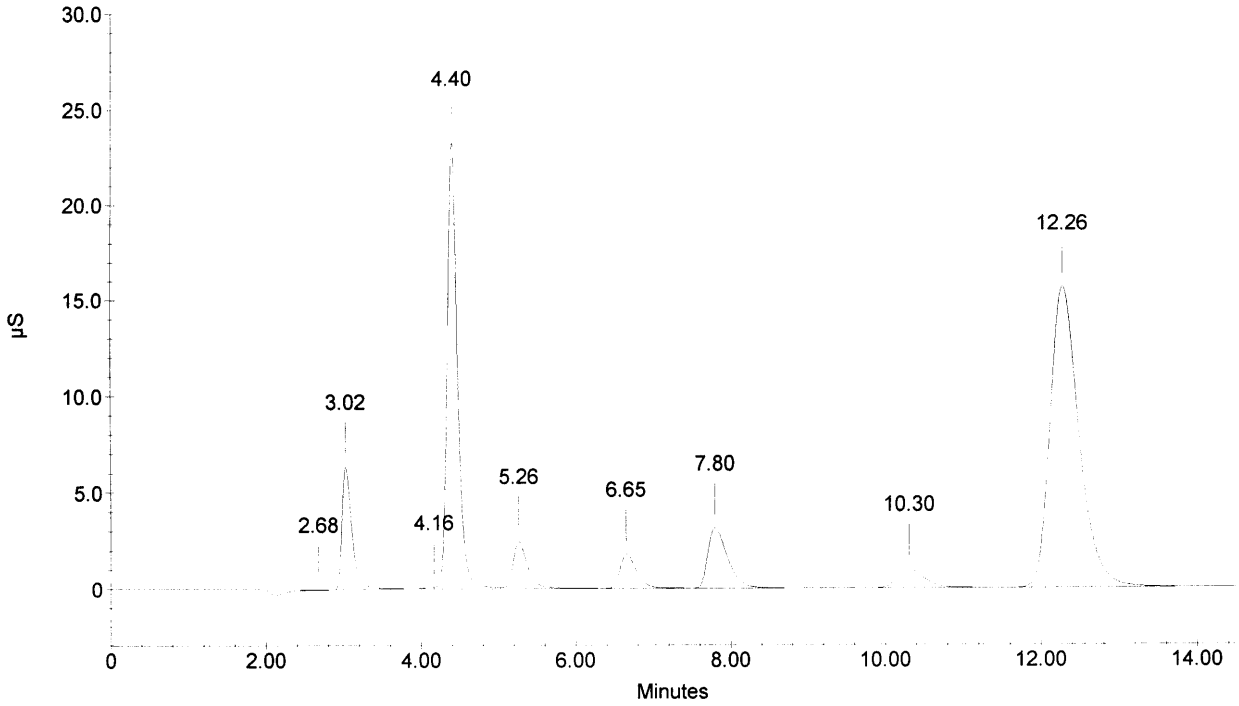
Date Time Collected : 3/2/05 3:51:26 PM
System Name : Dx-500
Detector Name : Conductivity Detector
Column Type : AS14-SN#018097 AG14-#019940
System Operator : rSPIES

010058

Peak Information : All Components

Pk. Num	Ret Time	Component Name	Concentration (ppm)	Height	Area	Bl. Code	%Delta
2	3.02	FLUORIDE	2.376 ✓	63472	572938	1	-0.87
4	4.40	CHLORIDE	12.414 ✓	232475	2136412	2	0.30
5	5.26	NITRITE-N	1.012 ✓	24701	327832	2	-0.75
6	6.65	BROMIDE	4.085 ✓	17930	269738	2	0.00
7	7.80	NITRATE-N	1.501 ✓	31380	564467	2	2.10
8	10.30	PHOSPHATE-P	1.848 ✓	10129	243719	1	1.05
9	12.26	SULFATE	32.026	156397	4035663	1	0.33
			---total(s)---				
	0.00		55.261		8150768		

259577S



Sample Name : 259578
Dilution Factor : 1.00
Injection Number : 20
Data File Name : ...\050302_020.DXD
Method File Name : ...\ANIONS050302.met
Schedule File Name : c:\peaknet\schedule\050302.sch

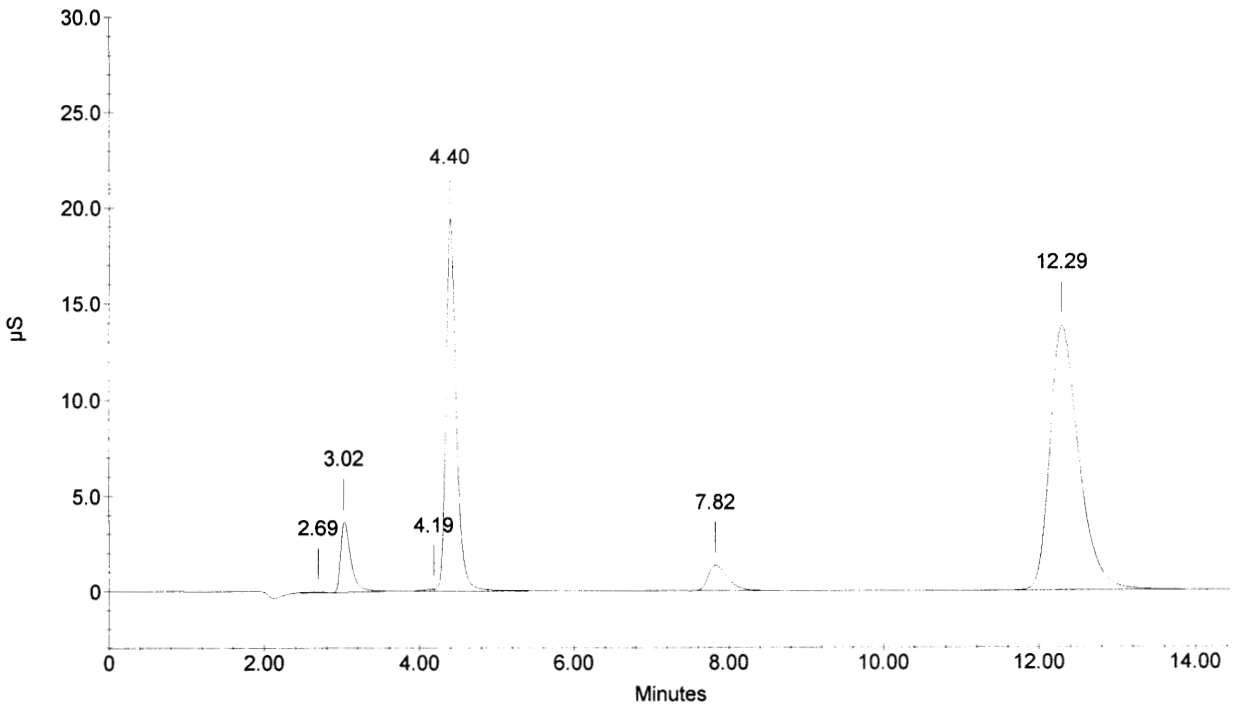
Date Time Collected : 3/2/05 4:08:42 PM
System Name : Dx-500
Detector Name : Conductivity Detector
Column Type : AS14-SN#018097 AG14-#019940
System Operator : rSPIES

010059

Peak Information : All Components

Pk. Num	Ret Time	Component Name	Concentration (ppm)	Height	Area	Bl. Code	%Delta
2	3.02	FLUORIDE	1.453	36515	339618	1	-0.87
4	4.40	CHLORIDE	10.536	193207	1783762	2	0.30
		NITRITE-N					
		BROMIDE					
5	7.82	NITRATE-N	0.643	13134	233923	1	2.44
		PHOSPHATE-P					
6	12.29	SULFATE	28.839	137583	3556662	1	0.55
			---total(s)---				
	0.00		41.472		5913965		

259578



Sample Name : 259579
Dilution Factor : 1.00
Injection Number : 21
Data File Name : ...\050302_021.DXD
Method File Name : ...\ANIONS050302.met
Schedule File Name : c:\peaknet\schedule\050302.sch

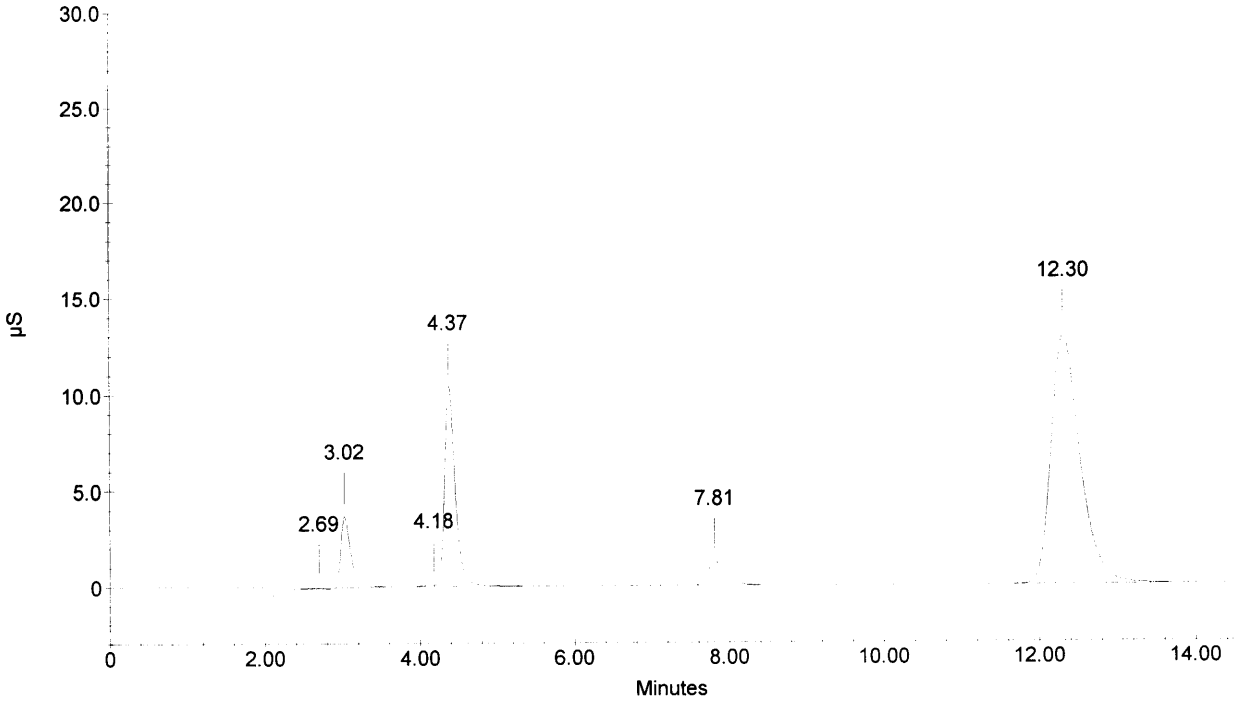
Date Time Collected : 3/2/05 4:25:58 PM
System Name : Dx-500
Detector Name : Conductivity Detector
Column Type : AS14-SN#018097 AG14-#019940
System Operator : rSPIES

010060

Peak Information : All Components

Pk. Num	Ret Time	Component Name	Concentration (ppm)	Height	Area	Bl. Code	%Delta
2	3.02	FLUORIDE	1.427	36948	333078	1	-0.87
4	4.37	CHLORIDE	6.082	103326	991462	2	-0.30
		NITRITE-N					
		BROMIDE					
5	7.81	NITRATE-N	0.595	12127	215678	1	2.27
		PHOSPHATE-P					
6	12.30	SULFATE	27.414	129382	3350068	1	0.65
			---total(s)---				
	0.00		35.518		4890286		

259579



Sample Name : CCV
Dilution Factor : 20.00
Injection Number : 22
Data File Name : ...\050302_022.DXD
Method File Name : ...\ANIONS050302.met
Schedule File Name : c:\peaknet\schedule\050302.sch

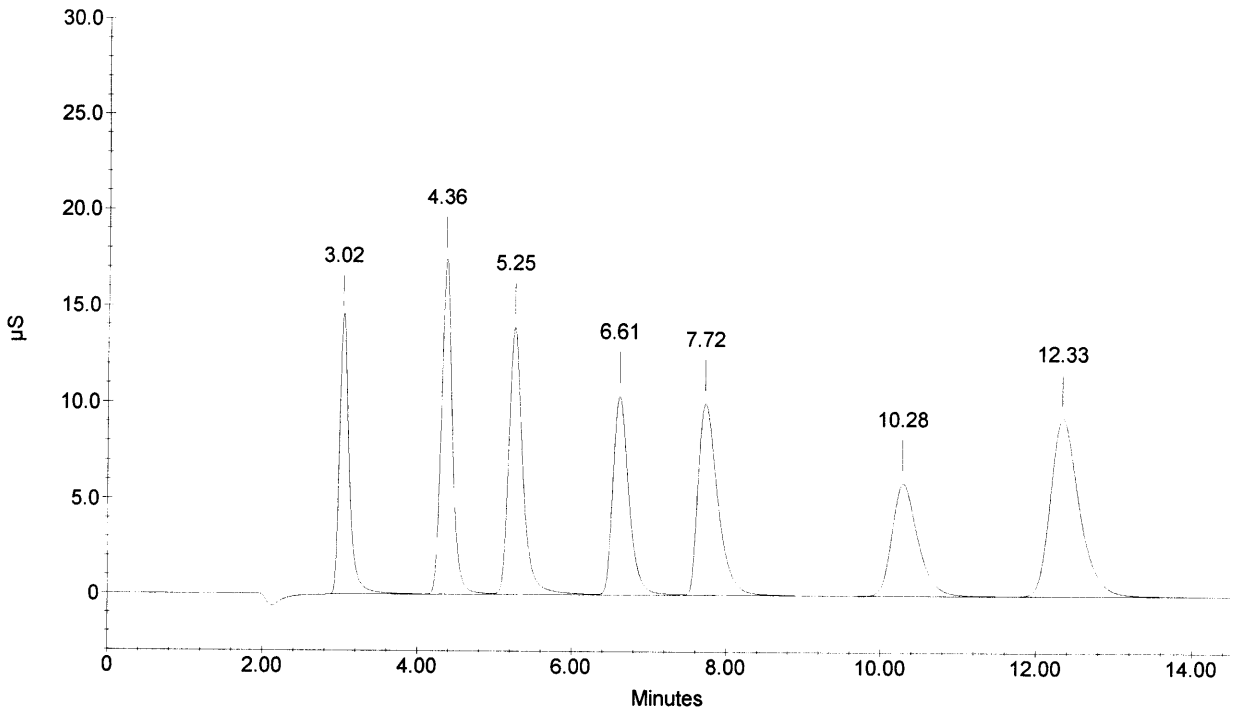
Date Time Collected : 3/2/05 4:43:12 PM
System Name : Dx-500
Detector Name : Conductivity Detector
Column Type : AS14-SN#018097 AG14-#019940
System Operator : rSPIES

010061

Peak Information : All Components

Pk. Num	Ret Time	Component Name	Concentration (ppm)	Height	Area	Bl. Code	%Delta
1	3.02	FLUORIDE	100.584	142797	1275906	1	-0.87
2	4.36	CHLORIDE	205.751	173547	1737931	2	-0.61
3	5.25	NITRITE-N	101.416	139171	1790405	2	-1.01
4	6.61	BROMIDE	417.546	103885	1504300	2	-0.60
5	7.72	NITRATE-N	89.821	100084	1798170	2	1.05
6	10.28	PHOSPHATE-P	195.514	59011	1394583	1	0.78
7	12.33	SULFATE	411.890	93014	2416770	1	0.87
	0.00		---total(s)--- 1522.521		11918065		

CCV



Sample Name : CCB
Dilution Factor : 1.00
Injection Number : 23
Data File Name : ...\050302_023.DXD
Method File Name : ...\ANIONS050302.met
Schedule File Name : c:\peaknet\schedule\050302.sch

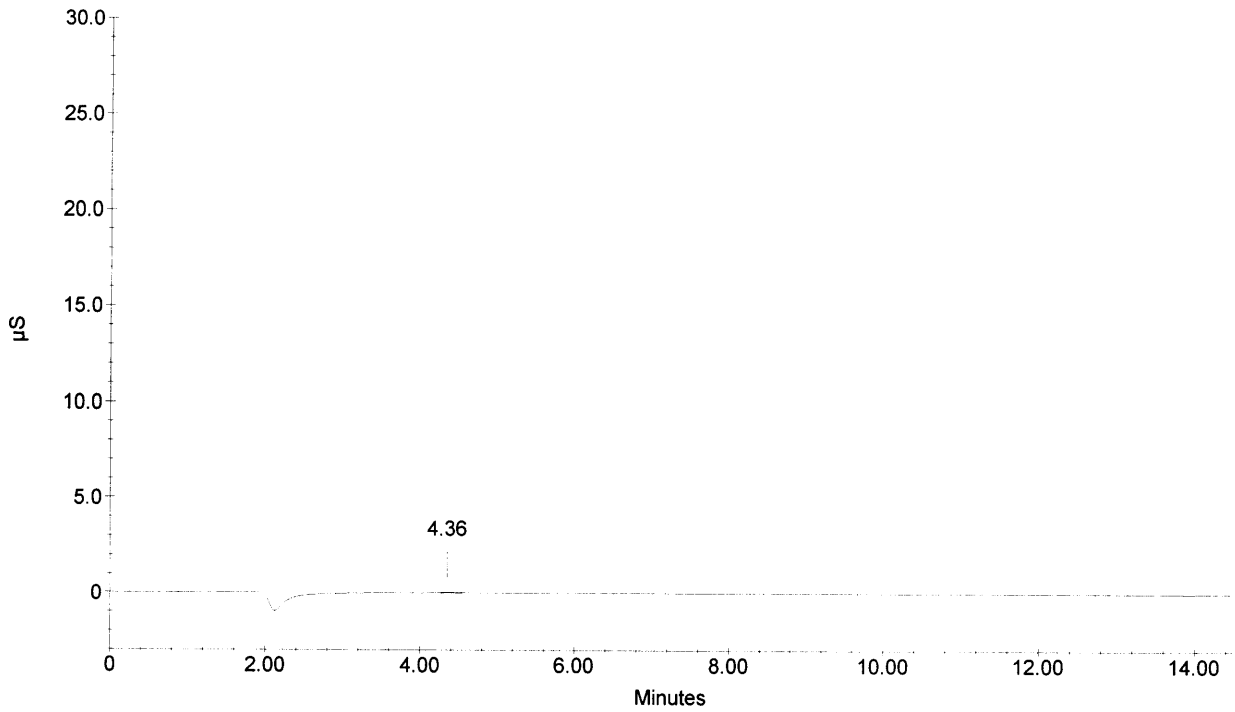
Date Time Collected : 3/2/05 5:00:28 PM
System Name : Dx-500
Detector Name : Conductivity Detector
Column Type : AS14-SN#018097 AG14-#019940
System Operator : rSPIES

010062

Peak Information : All Components

Pk. Num	Ret Time	Component Name	Concentration (ppm)	Height	Area	Bl. Code	%Delta
1	4.36	CHLORIDE	0.069	335	3265	1	-0.61
1	4.36	CHLORIDE	0.069	335	3265	1	-0.61
		NITRITE-N					
		BROMIDE					
		NITRATE-N					
		PHOSPHATE-P					
		SULFATE					
			---total(s)---				
	0.00		0.138		6530		

CCB



Sample Name : 259407 df10
Dilution Factor : 10.00
Injection Number : 24
Data File Name : ...\050302_024.DXD
Method File Name : ...\ANIONS050302.met
Schedule File Name : c:\peaknet\schedule\050302.sch

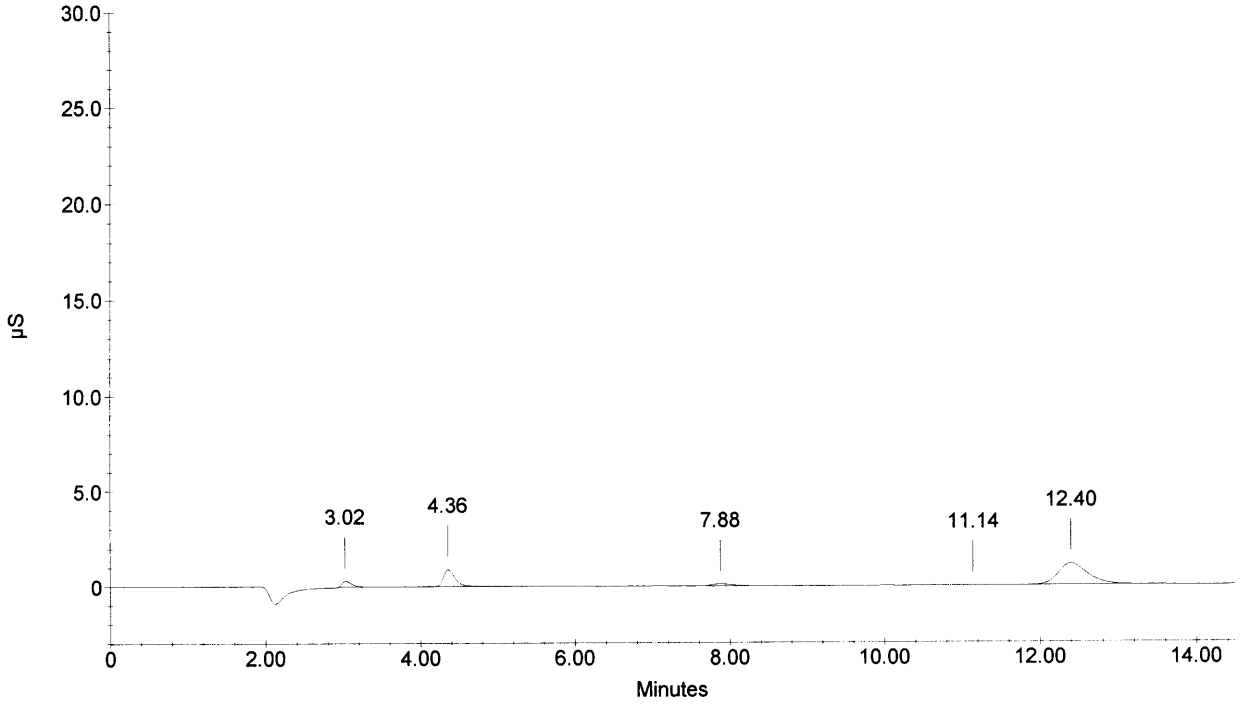
Date Time Collected : 3/2/05 5:17:41 PM
System Name : Dx-500
Detector Name : Conductivity Detector
Column Type : AS14-SN#018097 AG14-#019940
System Operator : rSPIES

010063

Peak Information : All Components

Pk. Num	Ret Time	Component Name	Concentration (ppm)	Height	Area	Bl. Code	%Delta
1	3.02	FLUORIDE	1.707	3066	24840	1	-0.87
2	4.36	CHLORIDE	6.456	9057	94515	1	-0.61
		NITRITE-N					
		BROMIDE					
3	7.88	NITRATE-N	0.710	1086	18703	1	3.14
4	11.14	PHOSPHATE-P	0.580	46	409	1	9.28
5	12.40	SULFATE	28.153	11209	299523	1	1.42
			---total(s)---				
	0.00		37.606		437989		

259407 df10



Sample Name : 259407D df10
Dilution Factor : 10.00
Injection Number : 25
Data File Name : ...\050302_025.DXD
Method File Name : ...\ANIONS050302.met
Schedule File Name : c:\peaknet\schedule\050302.sch

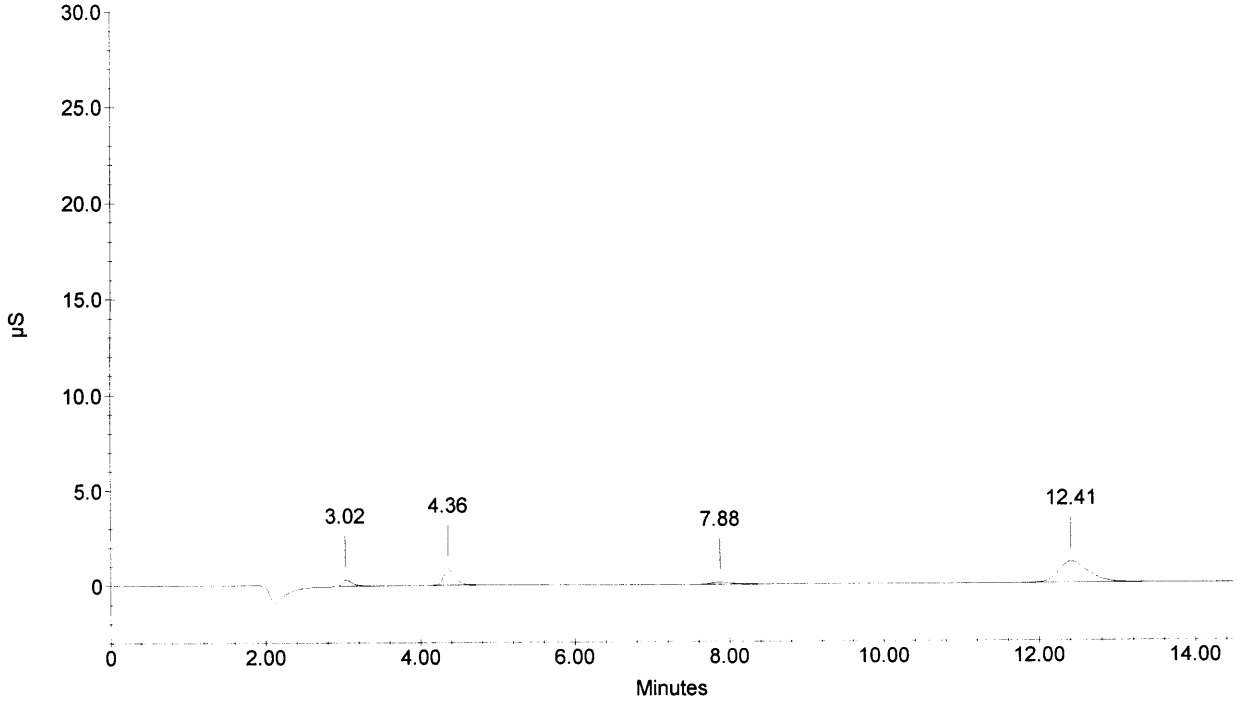
Date Time Collected : 3/2/05 5:34:56 PM
System Name : Dx-500
Detector Name : Conductivity Detector
Column Type : AS14-SN#018097 AG14-#019940
System Operator : rSPIES

010064

Peak Information : All Components

Pk. Num	Ret Time	Component Name	Concentration (ppm)	Height	Area	Bl. Code	%Delta
1	3.02	FLUORIDE	1.808	3188	27288	1	-0.87
2	4.36	CHLORIDE	6.138	8622	89454	1	-0.61
		NITRITE-N					
		BROMIDE					
3	7.88	NITRATE-N	0.751	1134	20231	1	3.14
		PHOSPHATE-P					
4	12.41	SULFATE	28.224 ✓	11201	300303	1	1.53
			---total(s)---				
	0.00		36.921		437276		

259407D df10



Sample Name : 259407S df10
Dilution Factor : 10.00
Injection Number : 26
Data File Name : ...\050302_026.DXD
Method File Name : ...\ANIONS050302.met
Schedule File Name : c:\peaknet\schedule\050302.sch

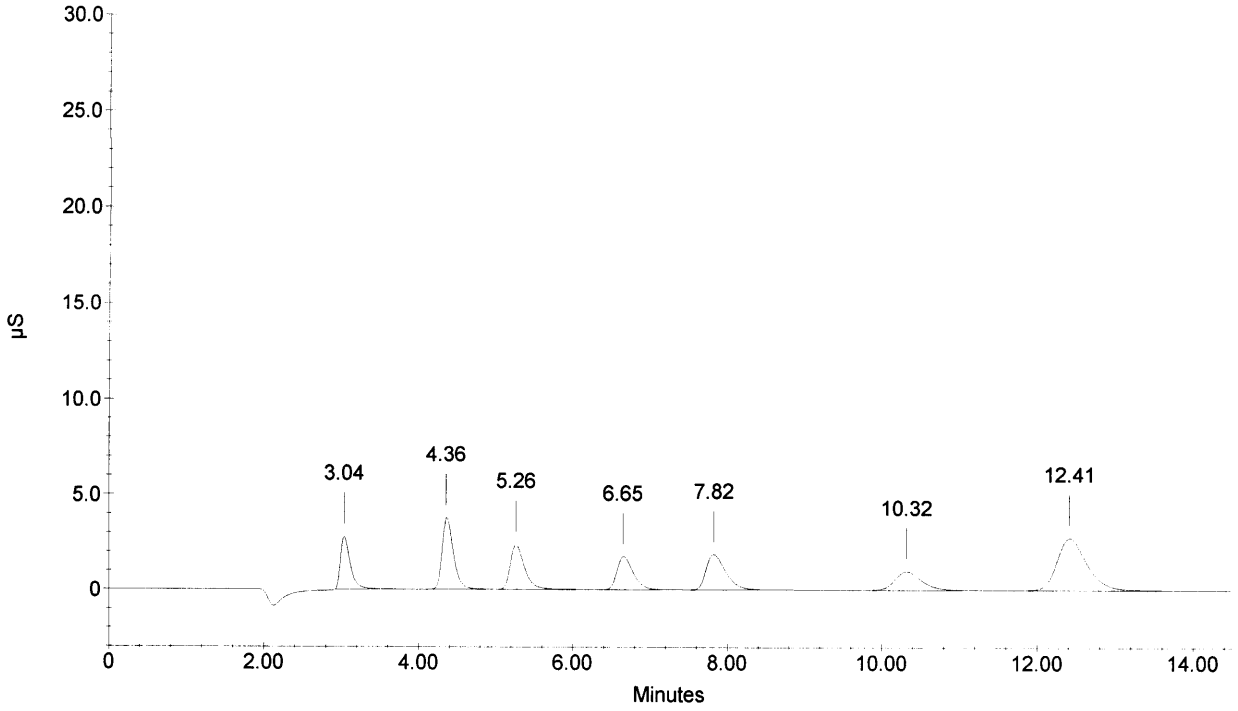
Date Time Collected : 3/2/05 5:52:10 PM
System Name : Dx-500
Detector Name : Conductivity Detector
Column Type : AS14-SN#018097 AG14-#019940
System Operator : rSPIES

010065

Peak Information : All Components

Pk. Num	Ret Time	Component Name	Concentration (ppm)	Height	Area	Bl. Code	%Delta
1	3.04	FLUORIDE	10.751	27769	245612	1	-0.44
2	4.36	CHLORIDE	24.767	37662	389002	2	-0.61
3	5.26	NITRITE-N	9.586	23736	309404	2	-0.75
4	6.65	BROMIDE	39.084	17407	257716	1	0.00
5	7.82	NITRATE-N	8.975	18573	330929	1	2.44
6	10.32	PHOSPHATE-P	18.196	9923	239829	1	1.18
7	12.41	SULFATE	67.820	27695	740430	1	1.53
			---total(s)---				
	0.00		179.179		2512922		

259407S df10



Sample Name : 259408 df10
Dilution Factor : 10.00
Injection Number : 27
Data File Name : ...\050302_027.DXD
Method File Name : ...\ANIONS050302.met
Schedule File Name : c:\peaknet\schedule\050302.sch

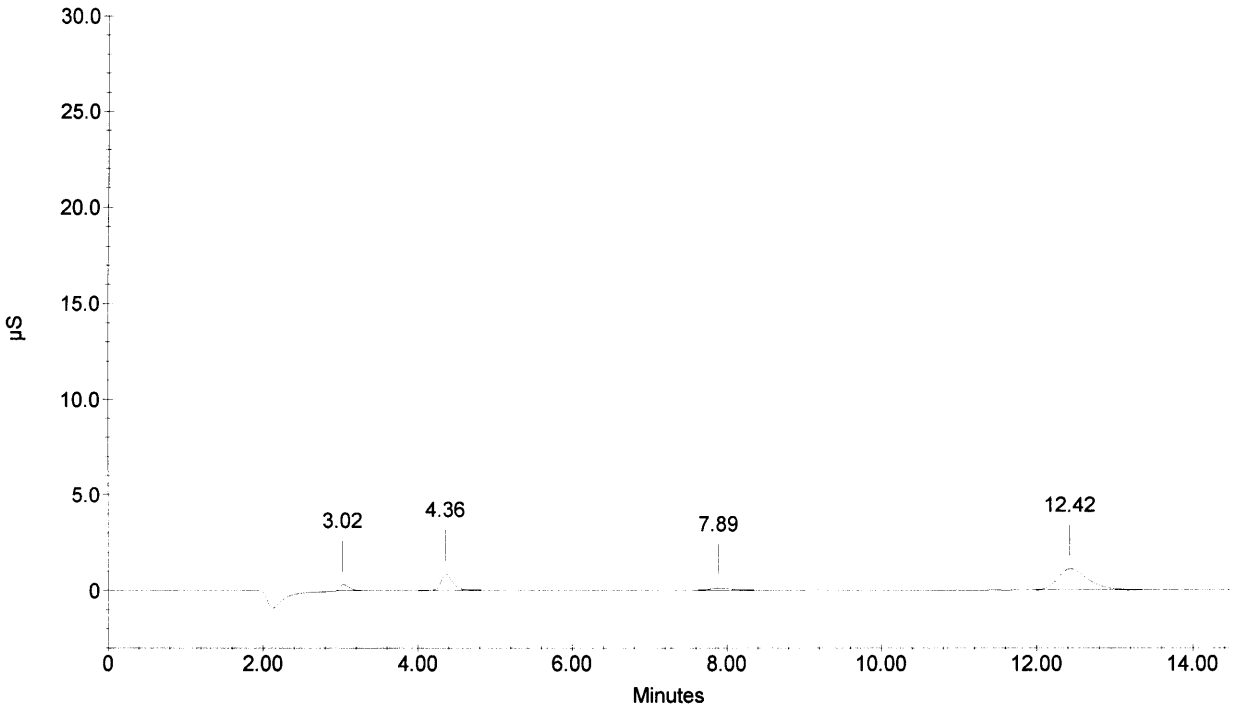
Date Time Collected : 3/2/05 6:09:24 PM
System Name : Dx-500
Detector Name : Conductivity Detector
Column Type : AS14-SN#018097 AG14-#019940
System Operator : rSPIES

010066

Peak Information : All Components

Pk. Num	Ret Time	Component Name	Concentration (ppm)	Height	Area	Bl. Code	%Delta
1	3.02	FLUORIDE	1.728	3102	25353	1	-0.87
2	4.36	CHLORIDE	6.406	8792	93721	1	-0.61
		NITRITE-N					
		BROMIDE					
3	7.89	NITRATE-N	0.732	1155	19500	1	3.32
		PHOSPHATE-P					
4	12.42	SULFATE	28.572	11168	304101	1	1.64
			---total(s)---				
	0.00		37.438		442676		

259408 df10



Sample Name : 259409 df10
Dilution Factor : 10.00
Injection Number : 28
Data File Name : ...\050302_028.DXD
Method File Name : ...\ANIONS050302.met
Schedule File Name : c:\peaknet\schedule\050302.sch

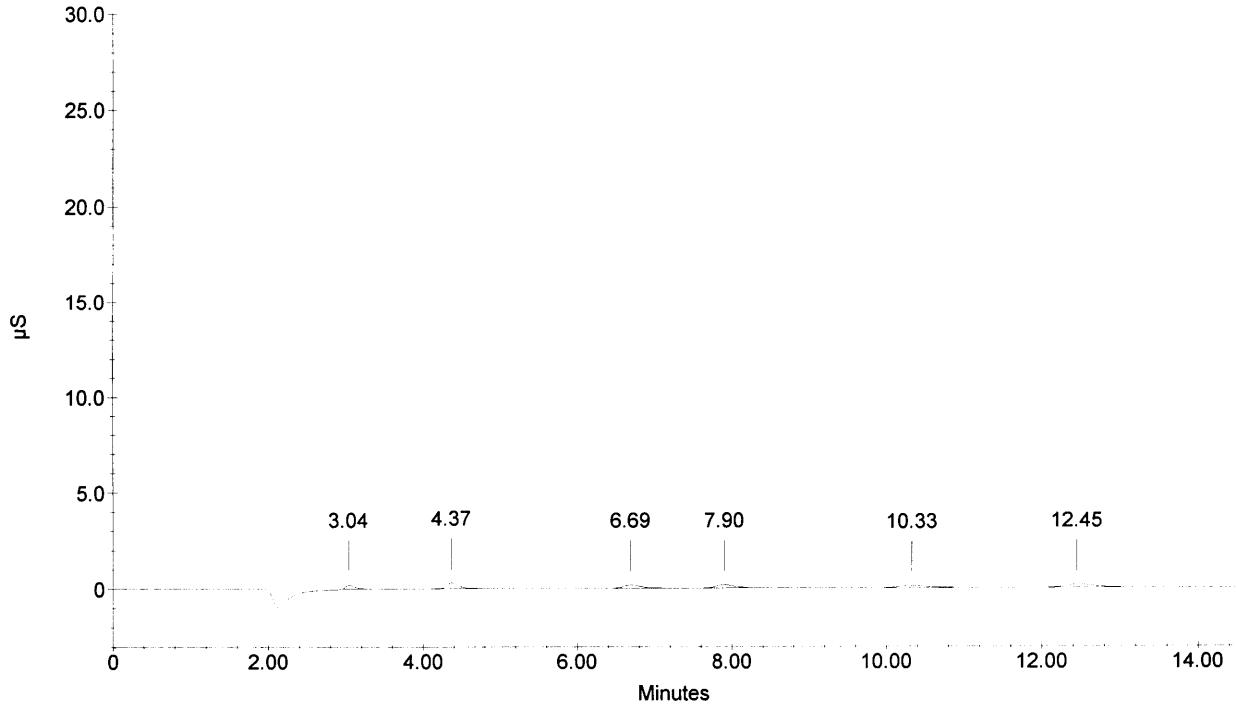
Date Time Collected : 3/2/05 6:26:37 PM
System Name : Dx-500
Detector Name : Conductivity Detector
Column Type : AS14-SN#018097 AG14-#019940
System Operator : rSPIES

010067

Peak Information : All Components

Pk. Num	Ret Time	Component Name	Concentration (ppm)	Height	Area	Bl. Code	%Delta
1	3.04	FLUORIDE	1.361	2089	16516	1	-0.44
2	4.37	CHLORIDE	2.468	2987	31314	1	-0.30
		NITRITE-N					
3	6.69	BROMIDE	4.485	1744	25441	1	0.60
4	7.90	NITRATE-N	0.981	1697	28802	1	3.49
5	10.33	PHOSPHATE-P	2.356	1010	24306	1	1.31
6	12.45	SULFATE	4.537	1669	44108	1	1.85
			---total(s)---				
	0.00		16.189		170487		

259409 df10



Sample Name : 259577 df10
Dilution Factor : 10.00
Injection Number : 29
Data File Name : ...\050302_029.DXD
Method File Name : ...\ANIONS050302.met
Schedule File Name : c:\peaknet\schedule\050302.sch

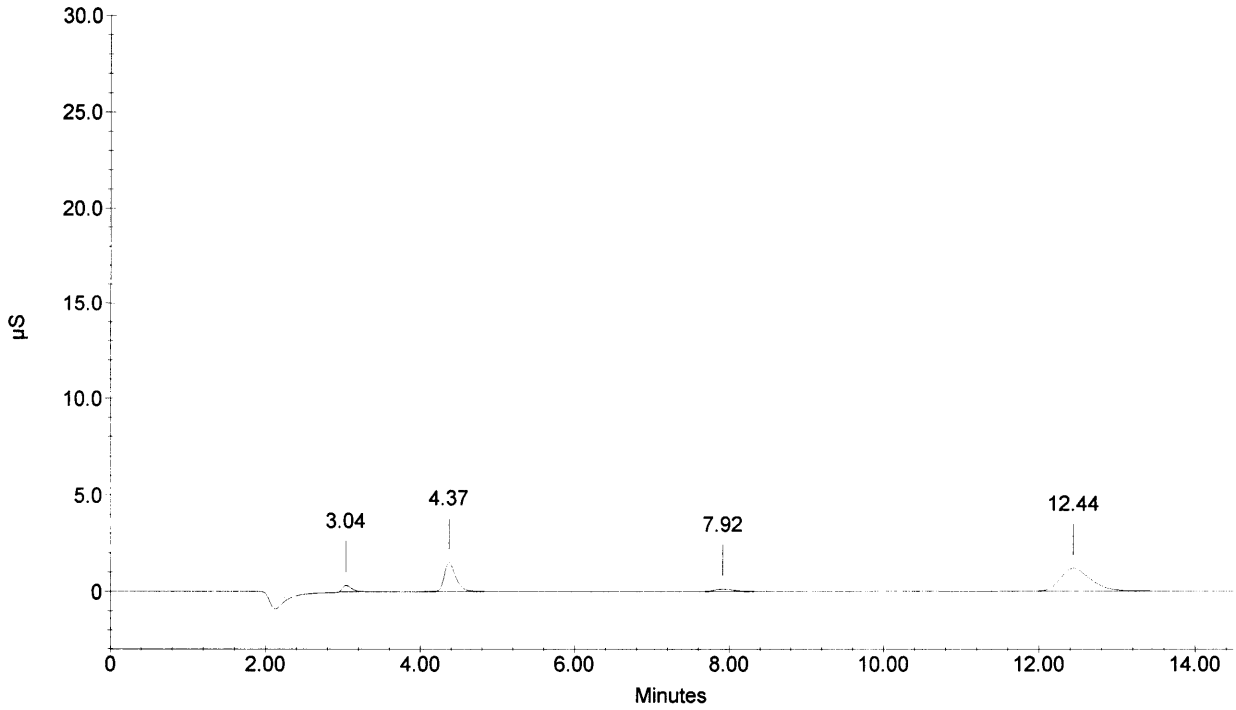
Date Time Collected : 3/2/05 6:43:52 PM
System Name : Dx-500
Detector Name : Conductivity Detector
Column Type : AS14-SN#018097 AG14-#019940
System Operator : rSPIES

010068

Peak Information : All Components

Pk. Num	Ret Time	Component Name	Concentration (ppm)	Height	Area	Bl. Code	%Delta
1	3.04	FLUORIDE	1.722	3144	25208	1	-0.44
2	4.37	CHLORIDE	10.319	14975	156045	1	-0.30
		NITRITE-N					
		BROMIDE					
3	7.92	NITRATE-N	0.802	1260	22128	1	3.67
		PHOSPHATE-P					
4	12.44	SULFATE	30.125	11910	321088	1	1.75
			---total(s)---				
	0.00		42.968		524468		

259577 df10



Sample Name : 259577D df10
Dilution Factor : 10.00
Injection Number : 30
Data File Name : ...\050302_030.DXD
Method File Name : ...\ANIONS050302.met
Schedule File Name : c:\peaknet\schedule\050302.sch

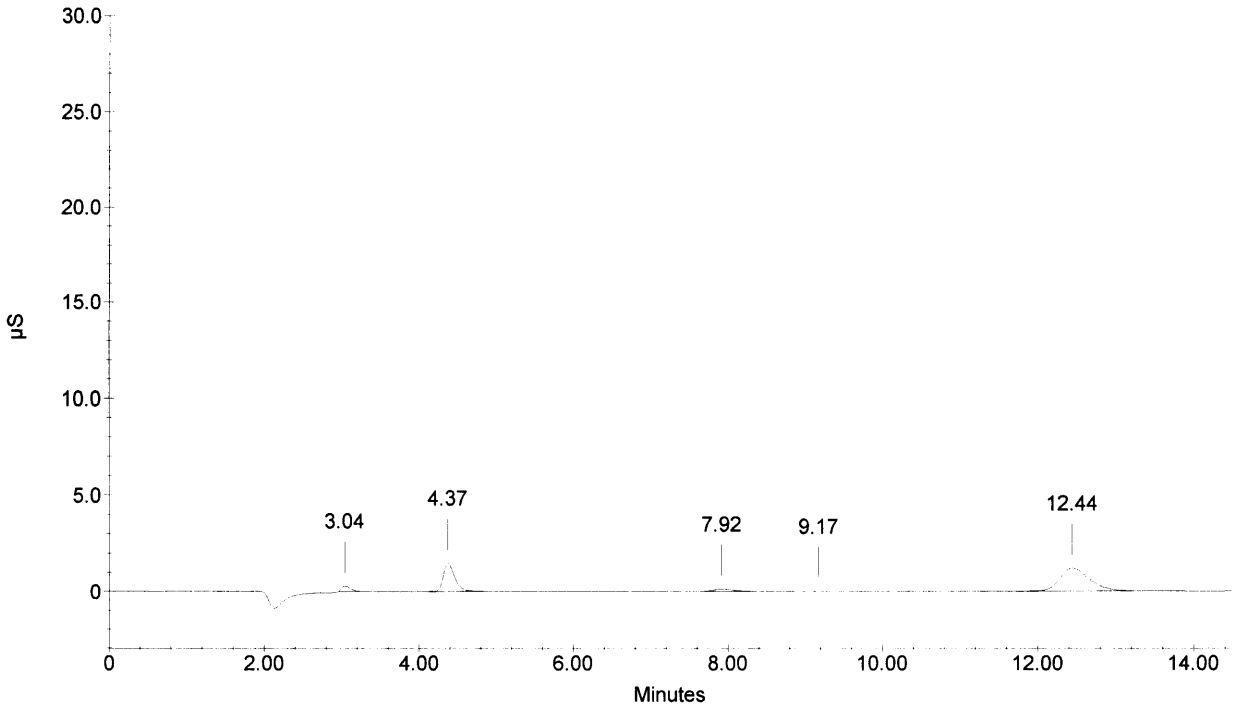
Date Time Collected : 3/2/05 7:01:05 PM
System Name : Dx-500
Detector Name : Conductivity Detector
Column Type : AS14-SN#018097 AG14-#019940
System Operator : rSPIES

010069

Peak Information : All Components

Pk. Num	Ret Time	Component Name	Concentration (ppm)	Height	Area	Bl. Code	%Delta
1	3.04	FLUORIDE	1.729	3126	25374	1	-0.44
2	4.37	CHLORIDE	10.294	14835	155635	1	-0.30
		NITRITE-N					
		BROMIDE					
3	7.92	NITRATE-N	0.775	1204	21105	1	3.67
		PHOSPHATE-P					
5	12.44	SULFATE	29.928	11887	318928	1	1.75
			---total(s)---				
	0.00		42.725		521043		

259577D df10



Sample Name : 259577S df10
Dilution Factor : 10.00
Injection Number : 31
Data File Name : ...\050302_031.DXD
Method File Name : ...\ANIONS050302.met
Schedule File Name : c:\peaknet\schedule\050302.sch

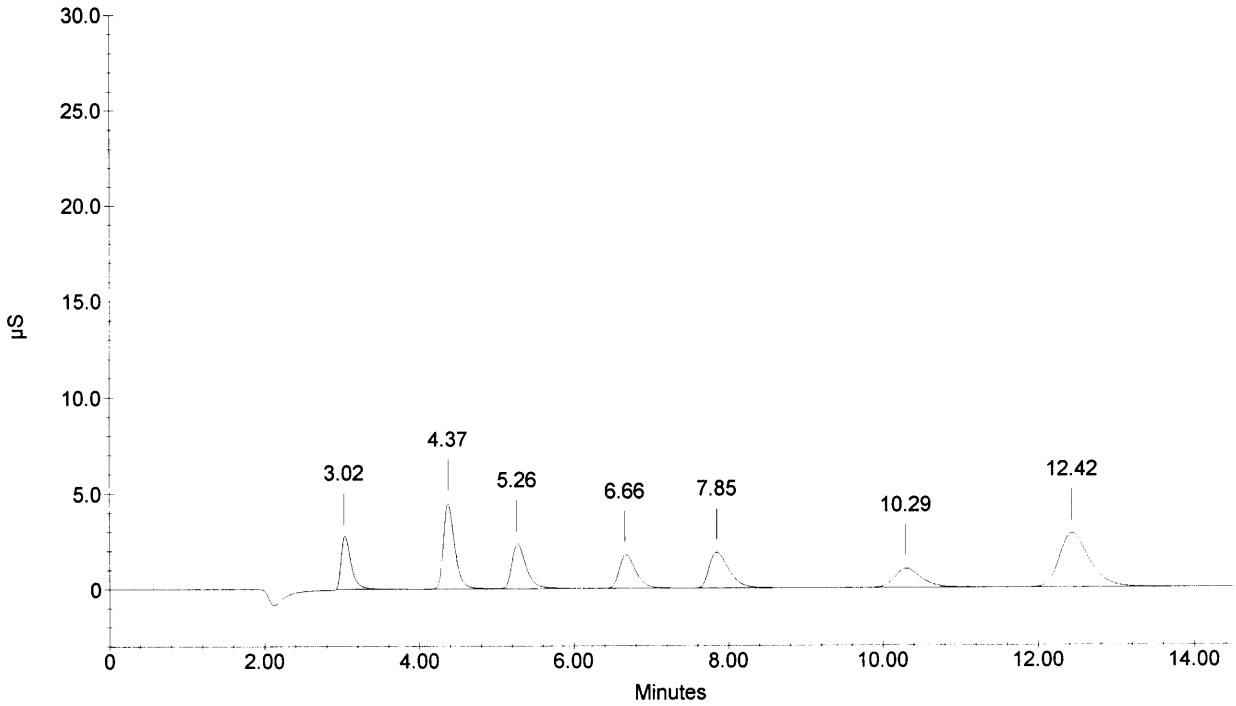
Date Time Collected : 3/2/05 7:18:20 PM
System Name : Dx-500
Detector Name : Conductivity Detector
Column Type : AS14-SN#018097 AG14-#019940
System Operator : rSPIES

010070

Peak Information : All Components

Pk. Num	Ret Time	Component Name	Concentration (ppm)	Height	Area	Bl. Code	%Delta
1	3.02	FLUORIDE	10.793	27085	246654	1	-0.87
2	4.37	CHLORIDE	29.039	44566	458774	2	-0.30
3	5.26	NITRITE-N	9.528	23161	307419	2	-0.75
4	6.66	BROMIDE	39.484	17271	260439	1	0.20
5	7.85	NITRATE-N	9.121	18560	336522	1	2.79
6	10.29	PHOSPHATE-P	18.588	9995	245213	1	0.92
7	12.42	SULFATE	69.769	28256	762499	1	1.64
			---total(s)---				
	0.00		186.322		2617520		

259577S df10



Sample Name : 259578 df10
Dilution Factor : 10.00
Injection Number : 32
Data File Name : ...\050302_032.DXD
Method File Name : ...\ANIONS050302.met
Schedule File Name : c:\peaknet\schedule\050302.sch

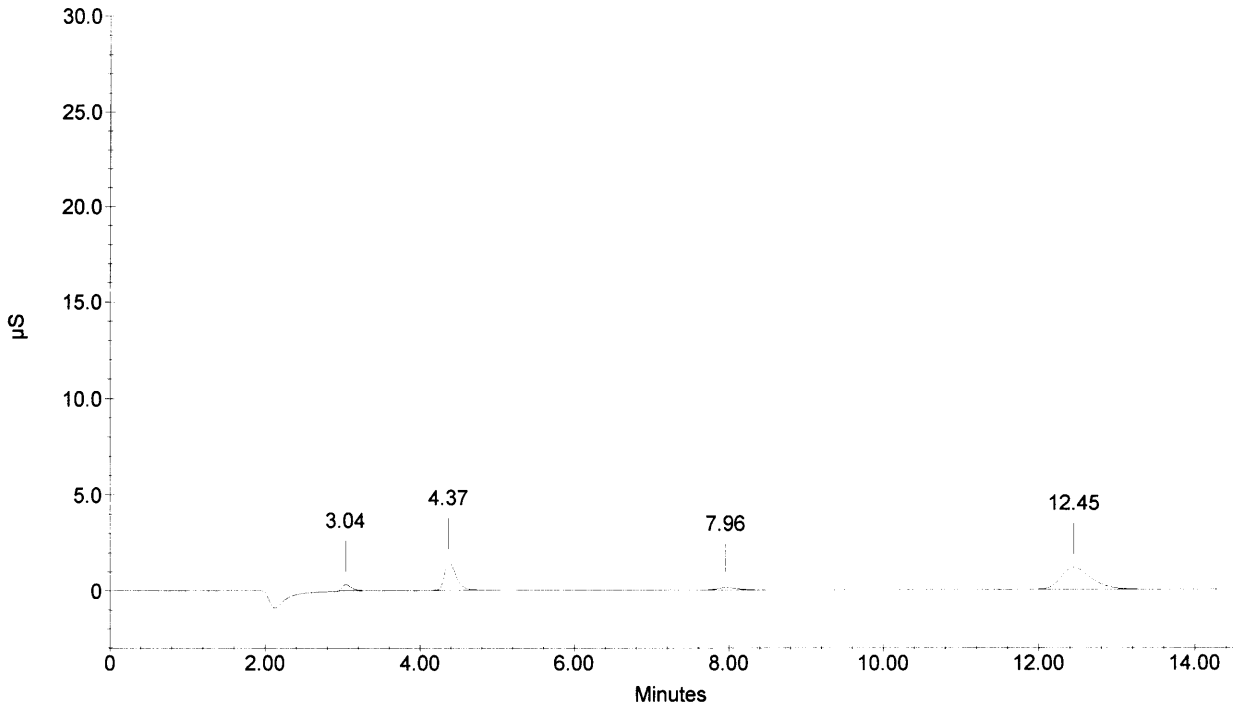
Date Time Collected : 3/2/05 7:35:35 PM
System Name : Dx-500
Detector Name : Conductivity Detector
Column Type : AS14-SN#018097 AG14-#019940
System Operator : rSPIES

010071

Peak Information : All Components

Pk. Num	Ret Time	Component Name	Concentration (ppm)	Height	Area	Bl. Code	%Delta
1	3.04	FLUORIDE	1.737	3136	25583	1	-0.44
2	4.37	CHLORIDE	10.284	14700	155478	1	-0.30
		NITRITE-N					
		BROMIDE					
3	7.96	NITRATE-N	0.789	1232	21641	1	4.19
		PHOSPHATE-P					
4	12.45	SULFATE	29.832	11736	317875	1	1.85
		---total(s)---					
	0.00		42.642		520577		

259578 df10



Sample Name : 259579 df10
Dilution Factor : 10.00
Injection Number : 33
Data File Name : ...\050302_033.DXD
Method File Name : ...\ANIONS050302.met
Schedule File Name : c:\peaknet\schedule\050302.sch

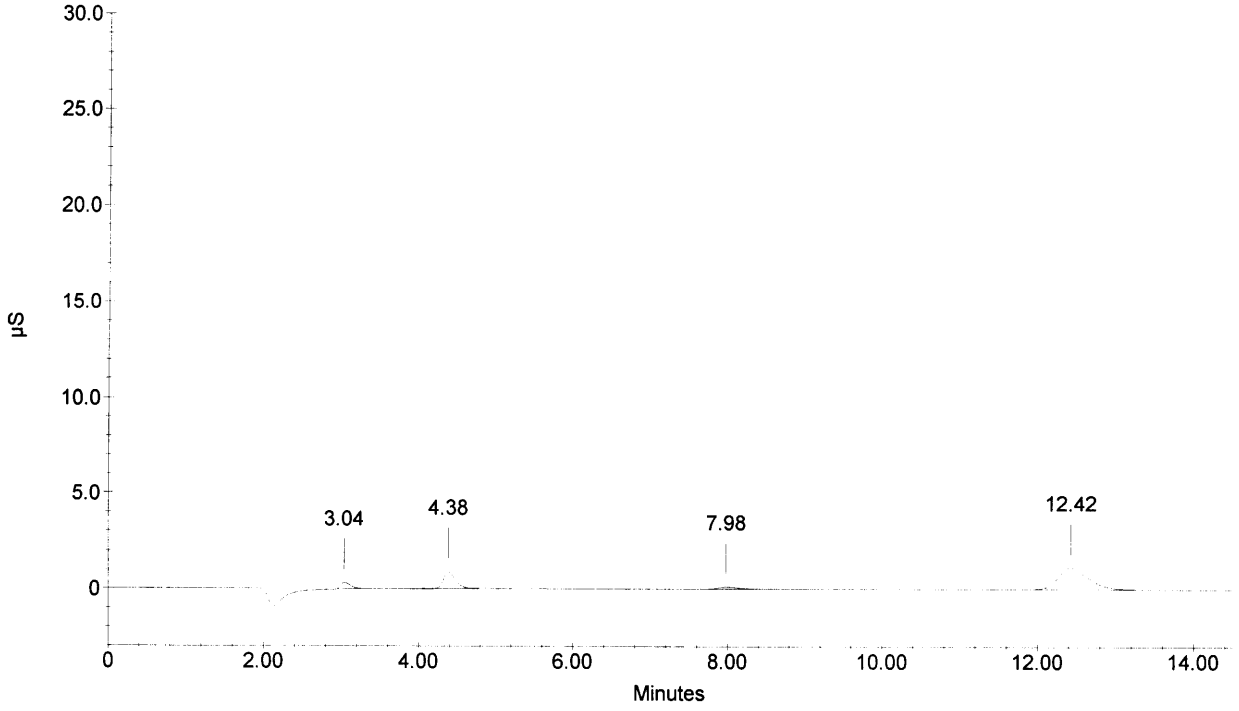
Date Time Collected : 3/2/05 7:52:48 PM
System Name : Dx-500
Detector Name : Conductivity Detector
Column Type : AS14-SN#018097 AG14-#019940
System Operator : rSPIES

010072

Peak Information : All Components

Pk. Num	Ret Time	Component Name	Concentration (ppm)	Height	Area	Bl. Code	%Delta
1	3.04	FLUORIDE	1.779	3189	26578	1	-0.44
2	4.38	CHLORIDE	6.554	8927	96059	1	0.00
		NITRITE-N					
		BROMIDE					
3	7.98	NITRATE-N	0.697	1061	18211	1	4.54
		PHOSPHATE-P					
4	12.42	SULFATE	28.878	11318	307451	1	1.64
		---total(s)---					
	0.00		37.907		448299		

259579 df10



Sample Name : CCV
Dilution Factor : 20.00
Injection Number : 34
Data File Name : ...\050302_034.DXD
Method File Name : ...\ANIONS050302.met
Schedule File Name : c:\peaknet\schedule\050302.sch

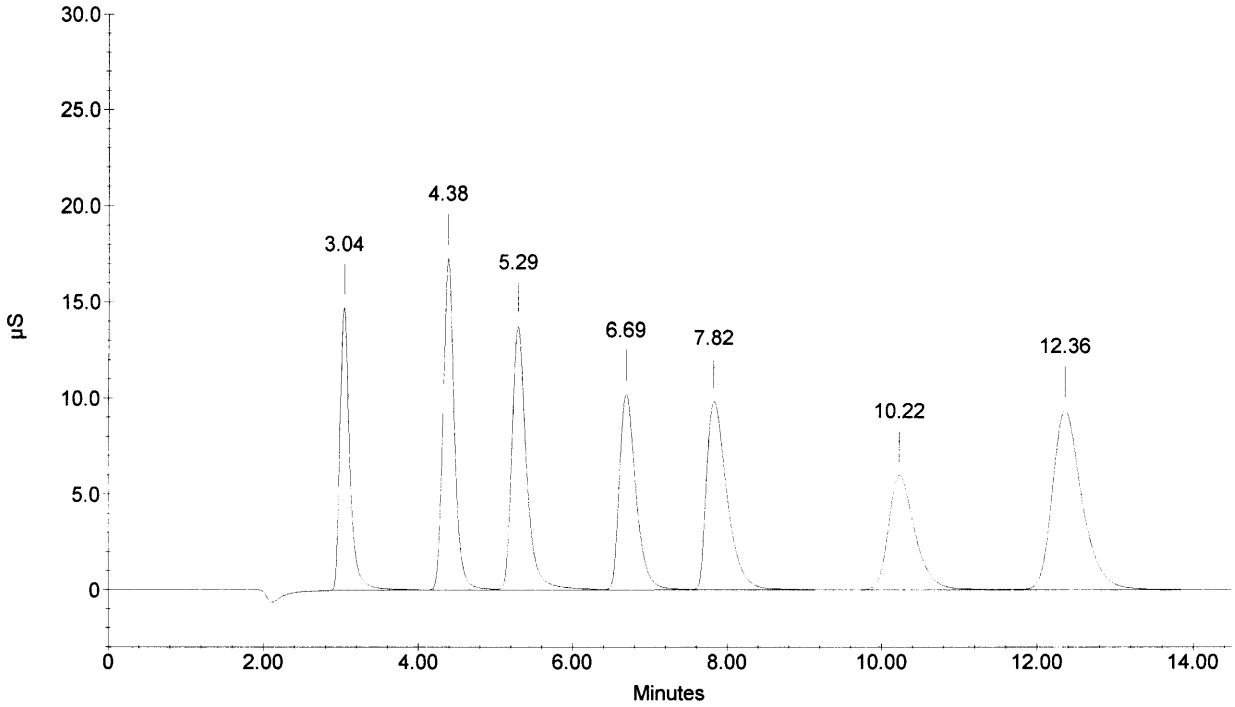
Date Time Collected : 3/2/05 8:10:03 PM
System Name : Dx-500
Detector Name : Conductivity Detector
Column Type : AS14-SN#018097 AG14-#019940
System Operator : rSPIES

010073

Peak Information : All Components

Pk. Num	Ret Time	Component Name	Concentration (ppm)	Height	Area	Bl. Code	%Delta
1	3.04	FLUORIDE	102.712	146798	1305034	1	-0.44
2	4.38	CHLORIDE	208.978	172797	1767641	2	0.00
3	5.29	NITRITE-N	102.794	137351	1816409	2	-0.25
4	6.69	BROMIDE	423.028	102113	1526209	2	0.60
5	7.82	NITRATE-N	91.074	97977	1825414	2	2.44
6	10.22	PHOSPHATE-P	200.487	59733	1432904	2	0.26
7	12.36	SULFATE	422.731	93720	2487958	2	1.09
	0.00		---total(s)--- 1551.804		12161568		

CCV



Sample Name : CCB
Dilution Factor : 1.00
Injection Number : 35
Data File Name : ...\050302_035.DXD
Method File Name : ...\ANIONS050302.met
Schedule File Name : c:\peaknet\schedule\050302.sch

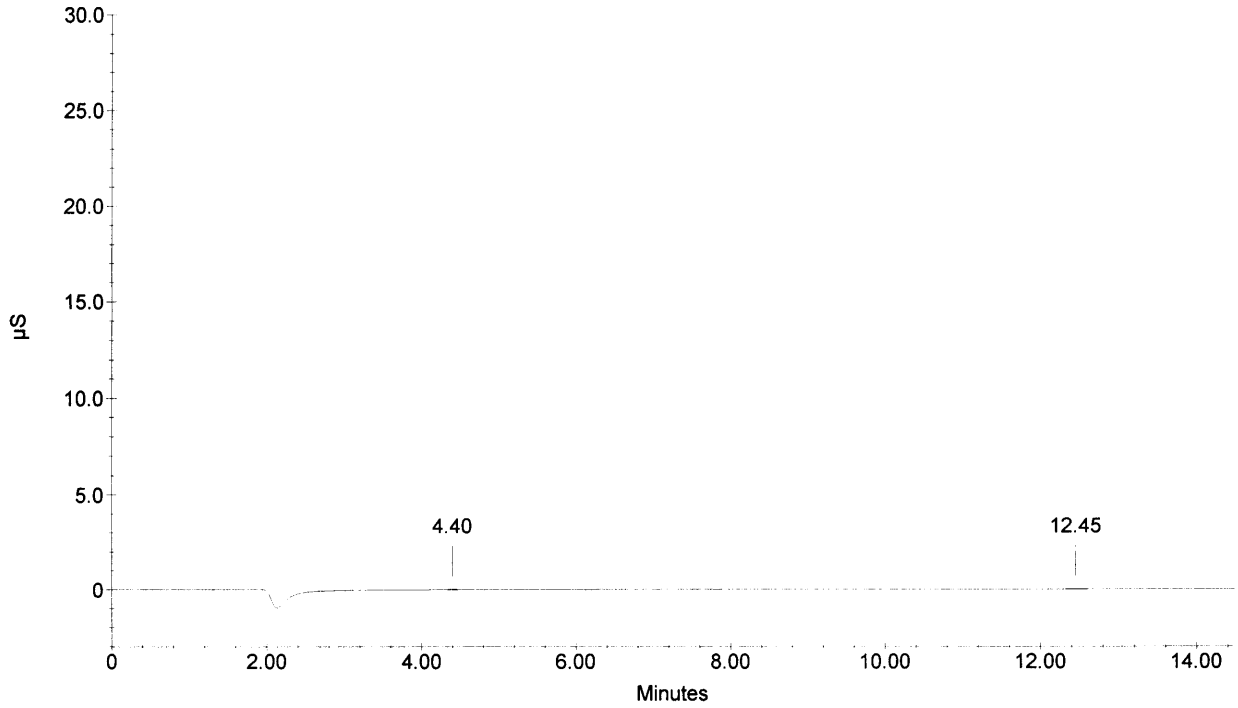
Date Time Collected : 3/2/05 8:27:16 PM
System Name : Dx-500
Detector Name : Conductivity Detector
Column Type : AS14-SN#018097 AG14-#019940
System Operator : rSPIES

010074

Peak Information : All Components

Pk. Num	Ret Time	Component Name	Concentration (ppm)	Height	Area	Bl. Code	%Delta
1	4.40	CHLORIDE	0.053	96	799	1	0.30
1	4.40	CHLORIDE	0.053	96	799	1	0.30
		NITRITE-N					
		BROMIDE					
		NITRATE-N					
		PHOSPHATE-P					
2	12.45	SULFATE	0.062	107	2188	1	1.85
			---total(s)---				
	0.00		0.169		3786		

CCB



Sample Name : 259543
Dilution Factor : 1.00
Injection Number : 36
Data File Name : ...\050302_036.DXD
Method File Name : ...\ANIONS050302.met
Schedule File Name : c:\peaknet\schedule\050302.sch

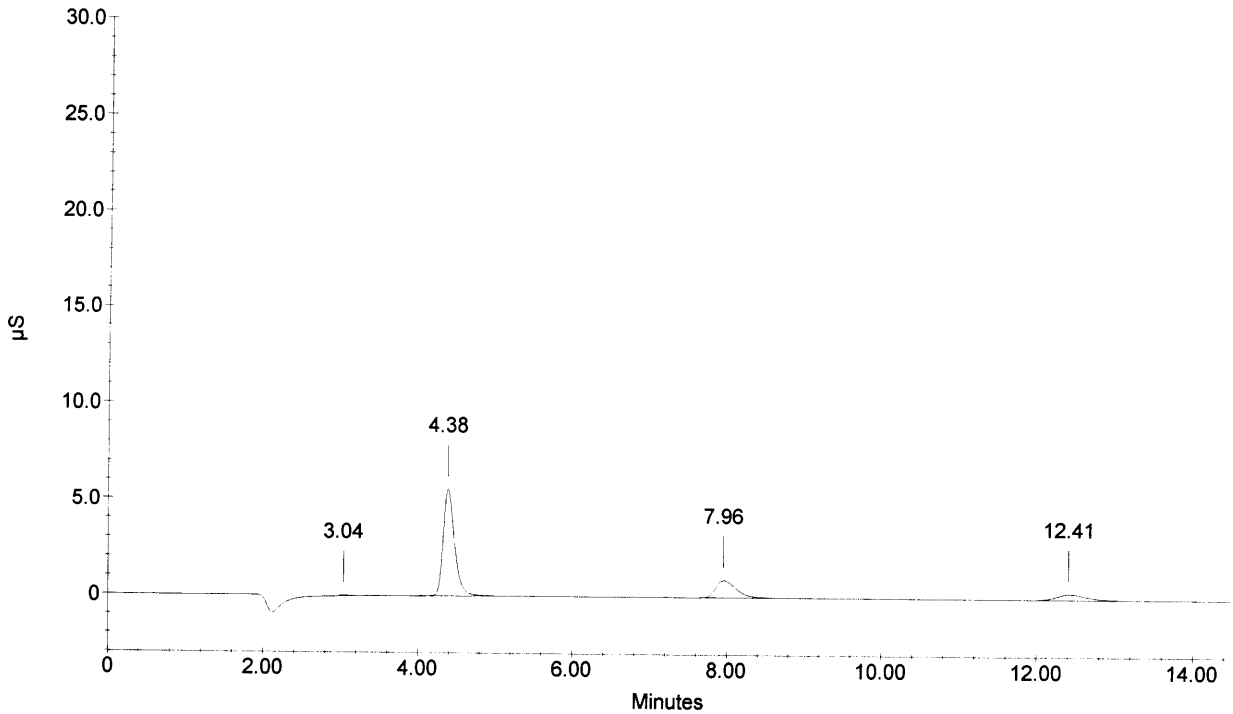
Date Time Collected : 3/2/05 8:44:31 PM
System Name : Dx-500
Detector Name : Conductivity Detector
Column Type : AS14-SN#018097 AG14-#019940
System Operator : rSPIES

010075

Peak Information : All Components

Pk. Num	Ret Time	Component Name	Concentration (ppm)	Height	Area	Bl. Code	%Delta
1	3.04	FLUORIDE	0.076	303	2056	1	-0.44
2	4.38	CHLORIDE	3.597	55718	572876	1	0.00
		NITRITE-N					
		BROMIDE					
3	7.96	NITRATE-N	0.467	9050	167317	1	4.19
		PHOSPHATE-P					
4	12.41	SULFATE	0.833	3128	84808	1	1.53
	0.00		---total(s)--- 4.974		827057		

259543



Sample Name : 259543D
Dilution Factor : 1.00
Injection Number : 37
Data File Name : ...\050302_037.DXD
Method File Name : ...\ANIONS050302.met
Schedule File Name : c:\peaknet\schedule\050302.sch

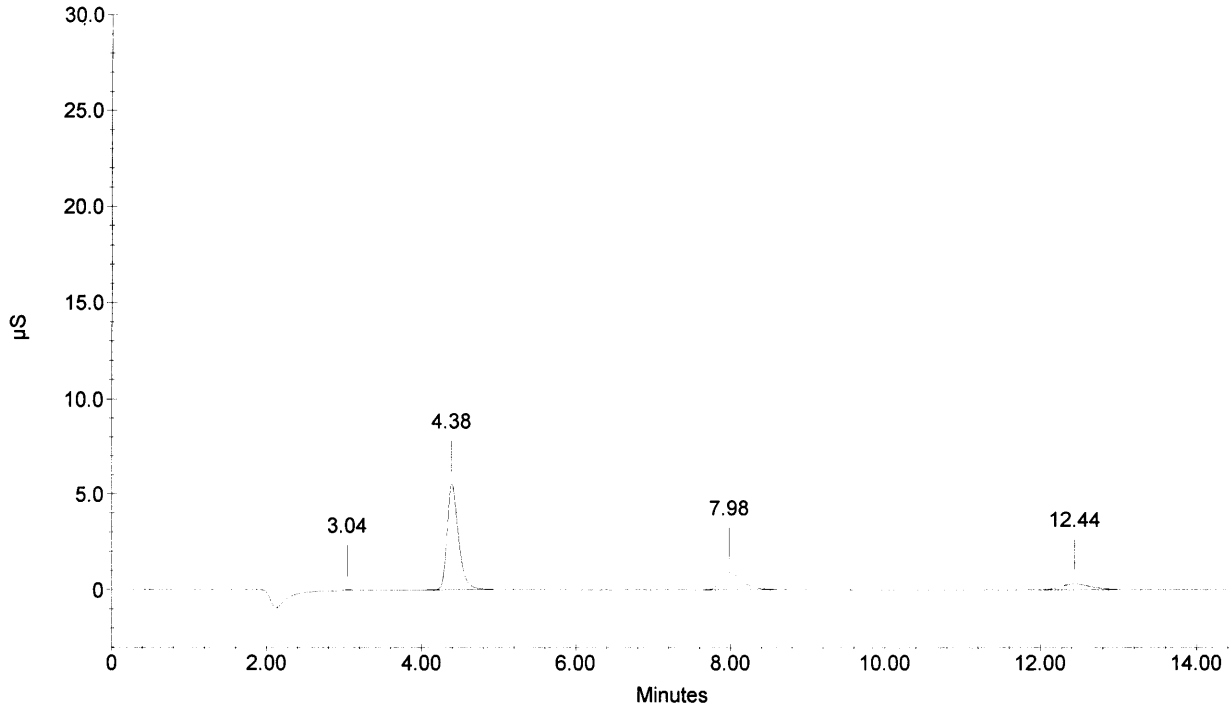
Date Time Collected : 3/2/05 9:01:44 PM
System Name : Dx-500
Detector Name : Conductivity Detector
Column Type : AS14-SN#018097 AG14-#019940
System Operator : rSPIES

010076

Peak Information : All Components

Pk. Num	Ret Time	Component Name	Concentration (ppm)	Height	Area	Bl. Code	%Delta
1	3.04	FLUORIDE	0.074	241	1566	1	-0.44
2	4.38	CHLORIDE	3.591	54953	571826	1	0.00
		NITRITE-N					
		BROMIDE					
3	7.98	NITRATE-N	0.473	9067	169539	1	4.54
		PHOSPHATE-P					
4	12.44	SULFATE	0.808	3074	82073	1	1.75
			---total(s)---				
	0.00		4.946		825004		

259543D



Sample Name : 259543S
Dilution Factor : 1.00
Injection Number : 38
Data File Name : ...\050302_038.DXD
Method File Name : ...\ANIONS050302.met
Schedule File Name : c:\peaknet\schedule\050302.sch

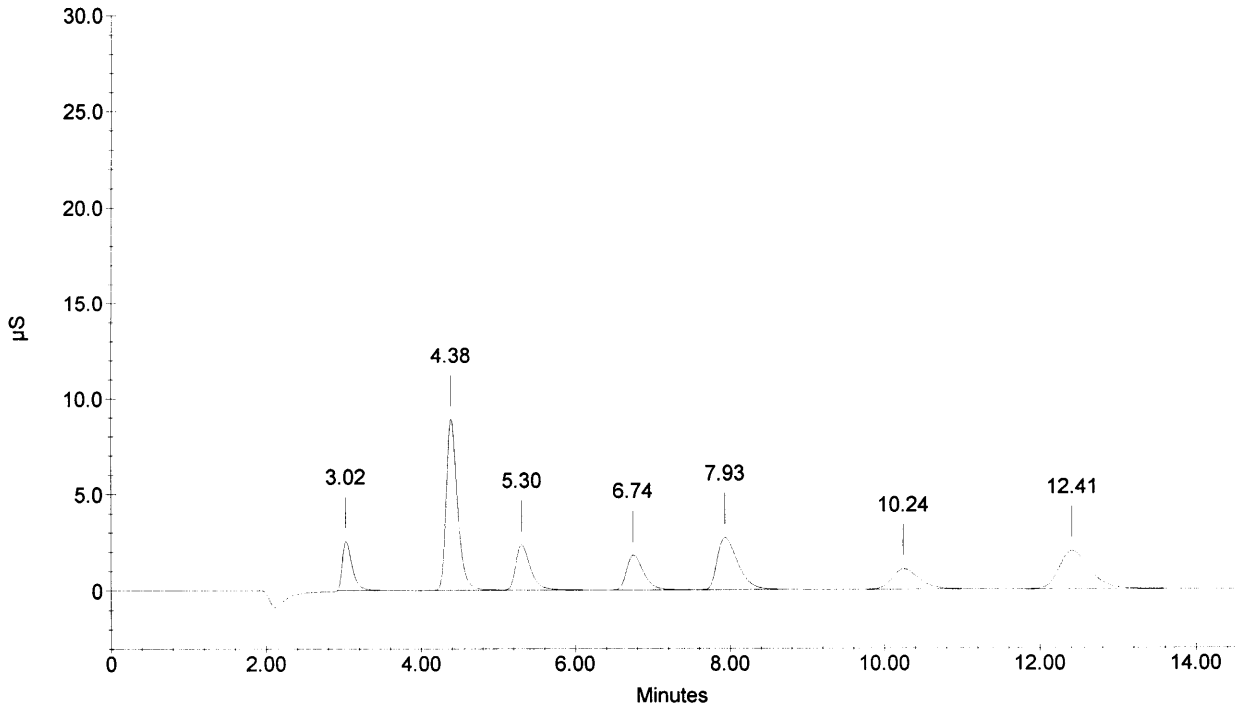
Date Time Collected : 3/2/05 9:18:58 PM
System Name : Dx-500
Detector Name : Conductivity Detector
Column Type : AS14-SN#018097 AG14-#019940
System Operator : rSPIES

010077

Peak Information : All Components

Pk. Num	Ret Time	Component Name	Concentration (ppm)	Height	Area	Bl. Code	%Delta
1	3.02	FLUORIDE	1.000	25360	227057	1	-0.87
2	4.38	CHLORIDE	5.591	88903	907575	2	0.00
3	5.30	NITRITE-N	0.979	23524	316433	2	0.00
4	6.74	BROMIDE	4.207	17963	278031	1	1.40
5	7.93	NITRATE-N	1.341	27036	502162	1	3.84
6	10.24	PHOSPHATE-P	1.983	10558	262364	1	0.39
7	12.41	SULFATE	5.007	19831	541179	1	1.53
			---total(s)---				
	0.00		20.108		3034801		

259543S



Sample Name : 259545
Dilution Factor : 1.00
Injection Number : 39
Data File Name : ...\050302_039.DXD
Method File Name : ...\ANIONS050302.met
Schedule File Name : c:\peaknet\schedule\050302.sch

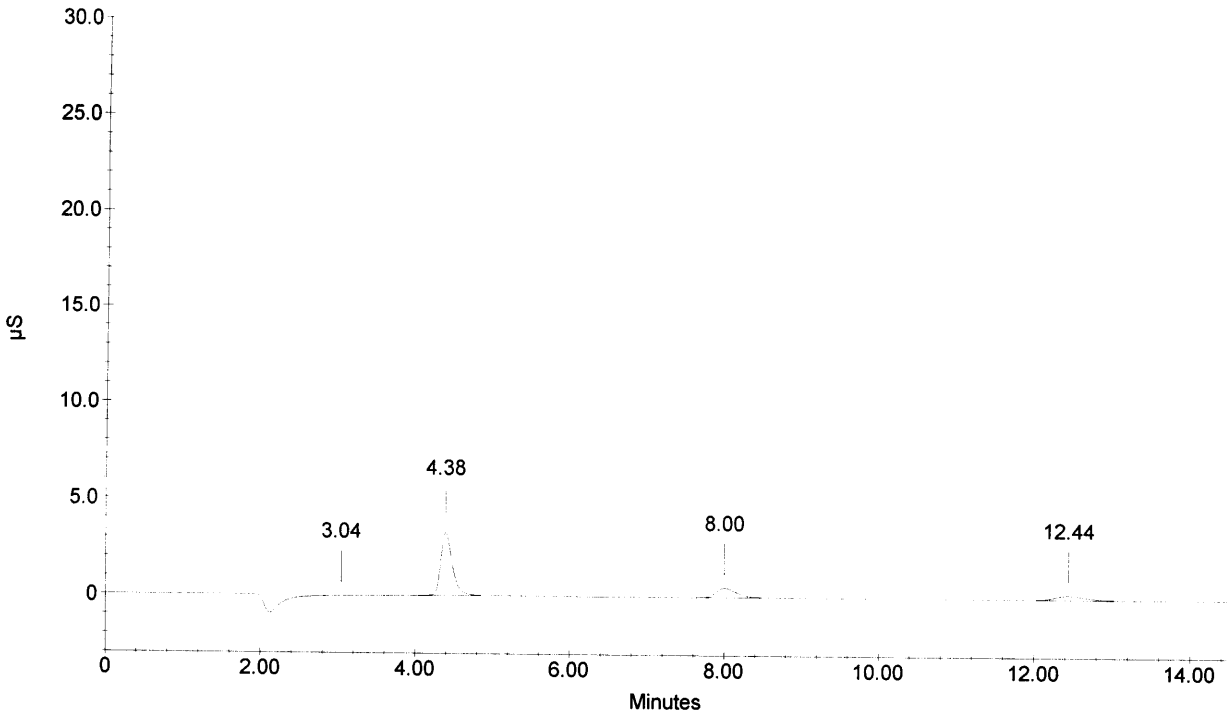
Date Time Collected : 3/2/05 9:36:13 PM
System Name : Dx-500
Detector Name : Conductivity Detector
Column Type : AS14-SN#018097 AG14-#019940
System Operator : rSPIES

010078

Peak Information : All Components

Pk. Num	Ret Time	Component Name	Concentration (ppm)	Height	Area	Bl. Code	%Delta
1	3.04	FLUORIDE	0.069	83	486	1	-0.44
2	4.38	CHLORIDE	2.201	32713	344122	1	0.00
		NITRITE-N					
		BROMIDE					
3	8.00	NITRATE-N	0.272	5056	93763	1	4.71
		PHOSPHATE-P					
4	12.44	SULFATE	0.642	2334	64335	1	1.75
	0.00		---total(s)--- 3.184		502706		

259545



Sample Name : 259547
Dilution Factor : 1.00
Injection Number : 40
Data File Name : ...\050302_040.DXD
Method File Name : ...\ANIONS050302.met
Schedule File Name : c:\peaknet\schedule\050302.sch

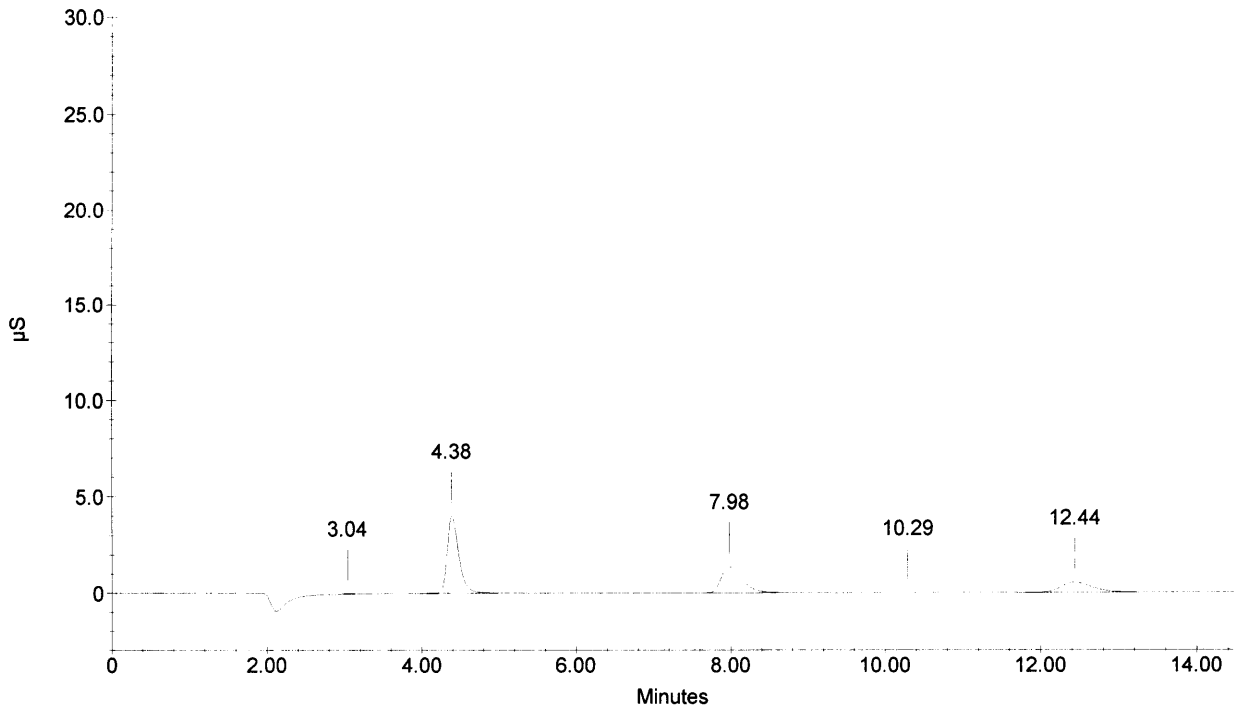
Date Time Collected : 3/2/05 9:53:28 PM
System Name : Dx-500
Detector Name : Conductivity Detector
Column Type : AS14-SN#018097 AG14-#019940
System Operator : rSPIES

010079

Peak Information : All Components

Pk. Num	Ret Time	Component Name	Concentration (ppm)	Height	Area	Bl. Code	%Delta
1	3.04	FLUORIDE	0.072	182	1035	1	-0.44
2	4.38	CHLORIDE	2.670	39916	420548	1	0.00
		NITRITE-N					
		BROMIDE					
3	7.98	NITRATE-N	0.703	13695	256799	1	4.54
4	10.29	PHOSPHATE-P	0.063	71	1091	1	0.92
5	12.44	SULFATE	1.424	5335	148447	1	1.75
			---total(s)---				
	0.00		4.932		827920		

259547



Sample Name : 259549
Dilution Factor : 1.00
Injection Number : 41
Data File Name : ...\050302_041.DXD
Method File Name : ...\ANIONS050302.met
Schedule File Name : c:\peaknet\schedule\050302.sch

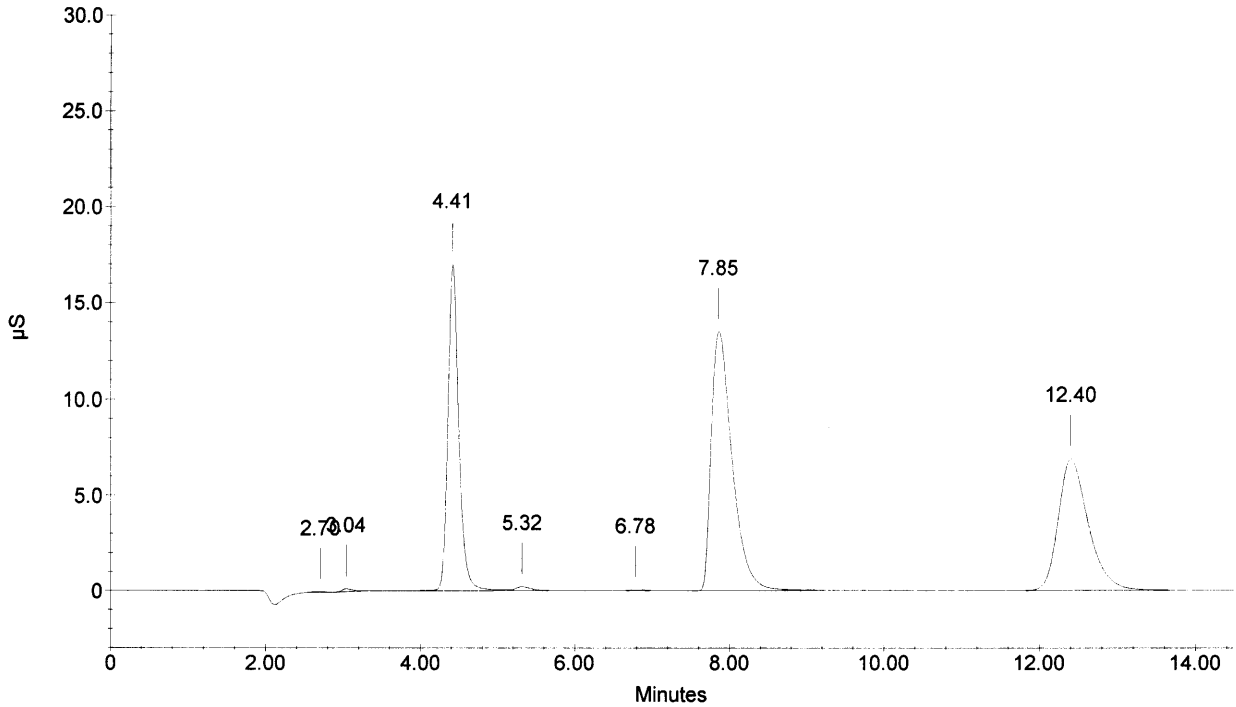
Date Time Collected : 3/2/05 10:10:42 PM
System Name : Dx-500
Detector Name : Conductivity Detector
Column Type : AS14-SN#018097 AG14-#019940
System Operator : rSPIES

010080

Peak Information : All Components

Pk. Num	Ret Time	Component Name	Concentration (ppm)	Height	Area	Bl. Code	%Delta
2	3.04	FLUORIDE	0.124	1537	13638	1	-0.44
3	4.41	CHLORIDE	9.913	169515	1669361	2	0.61
4	5.32	NITRITE-N	0.134	2110	30188	2	0.25
5	6.78	BROMIDE	0.154	426	5980	1	2.01
6	7.85	NITRATE-N	6.145	134629	2537996	1	2.79
		PHOSPHATE-P					
7	12.40	SULFATE	16.098	68778	1843614	1	1.42
			---total(s)---				
	0.00		32.569		6100777		

259549



Sample Name : 259551
Dilution Factor : 1.00
Injection Number : 42
Data File Name : ...\050302_042.DXD
Method File Name : ...\ANIONS050302.met
Schedule File Name : c:\peaknet\schedule\050302.sch

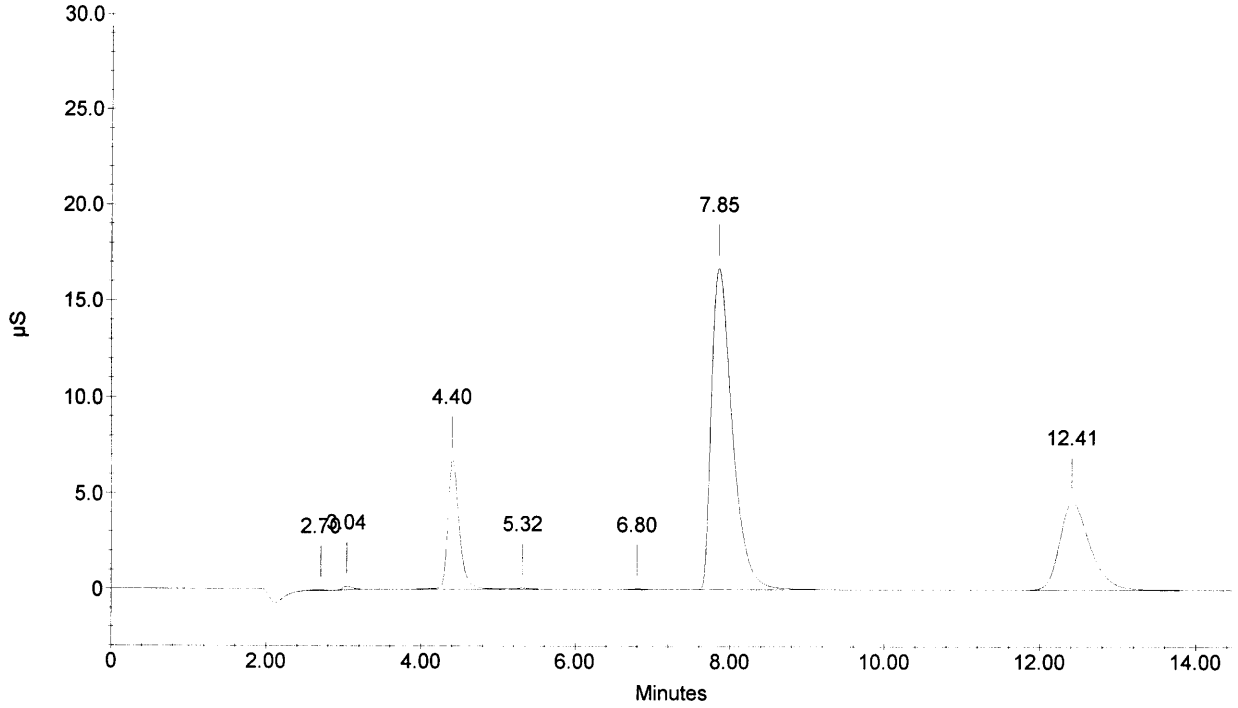
Date Time Collected : 3/2/05 10:27:58 PM
System Name : Dx-500
Detector Name : Conductivity Detector
Column Type : AS14-SN#018097 AG14-#019940
System Operator : rSPIES

010081

Peak Information : All Components

Pk. Num	Ret Time	Component Name	Concentration (ppm)	Height	Area	Bl. Code	%Delta
2	3.04	FLUORIDE	0.135	1832	16346	1	-0.44
3	4.40	CHLORIDE	4.303	66815	690177	2	0.30
4	5.32	NITRITE-N	0.073	698	9693	2	0.25
5	6.80	BROMIDE	0.128	319	4227	1	2.21
6	7.85	NITRATE-N	7.438	166850	3146054	1	2.79
		PHOSPHATE-P					
7	12.41	SULFATE	11.185	45938	1249051	1	1.53
			---total(s)---				
	0.00		23.262		5115547		

259551



Sample Name : CCV
Dilution Factor : 20.00
Injection Number : 43
Data File Name : ...\050302_043.DXD
Method File Name : ...\ANIONS050302.met
Schedule File Name : c:\peaknet\schedule\050302.sch

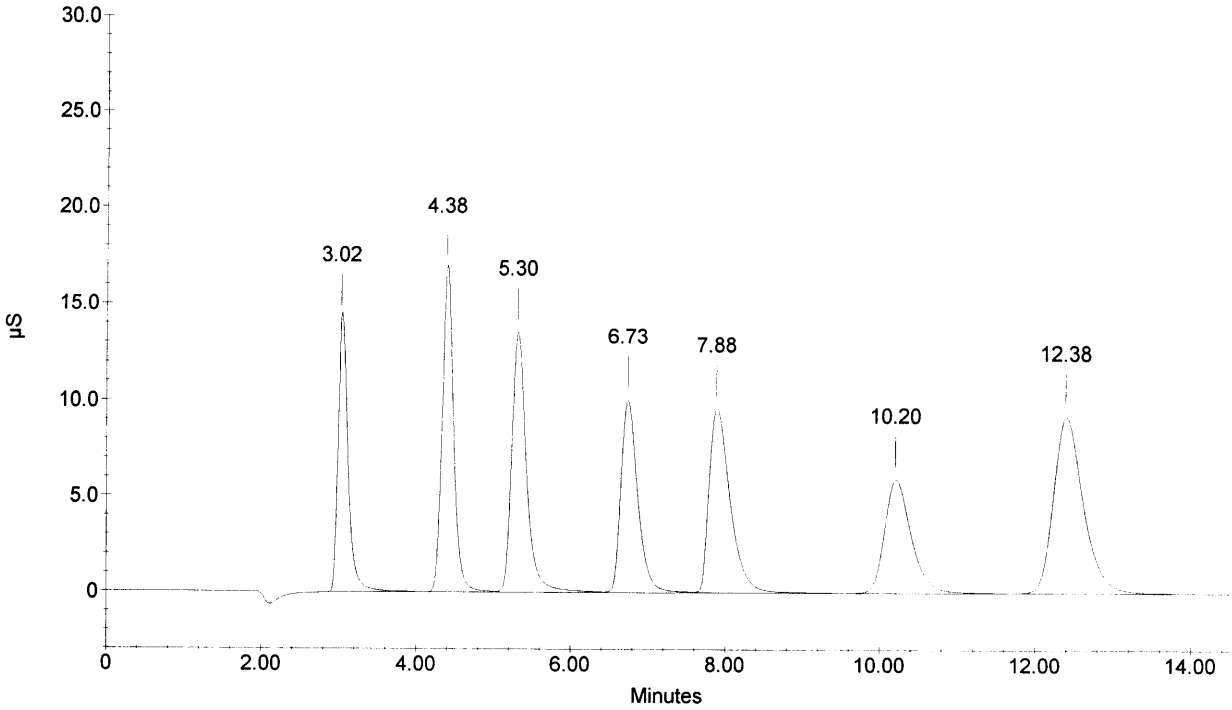
Date Time Collected : 3/2/05 10:45:17 PM
System Name : Dx-500
Detector Name : Conductivity Detector
Column Type : AS14-SN#018097 AG14-#019940
System Operator : rSPIES

010082

Peak Information : All Components

Pk. Num	Ret Time	Component Name	Concentration (ppm)	Height	Area	Bl. Code	%Delta
1	3.02	FLUORIDE	102.528	141856	1302521	1	-0.87
2	4.38	CHLORIDE	207.908	167513	1757780	2	0.00
3	5.30	NITRITE-N	102.671	135099	1814089	2	0.00
4	6.73	BROMIDE	423.084	100089	1526432	2	1.20
5	7.88	NITRATE-N	91.246	95684	1829158	2	3.14
6	10.20	PHOSPHATE-P	199.525	59145	1425474	2	0.00
7	12.38	SULFATE	417.362	91667	2452641	2	1.31
	0.00		---total(s)--- 1544.323		12108094		

CCV



Sample Name : CCB
Dilution Factor : 1.00
Injection Number : 44
Data File Name : ...\050302_044.DXD
Method File Name : ...\ANIONS050302.met
Schedule File Name : c:\peaknet\schedule\050302.sch

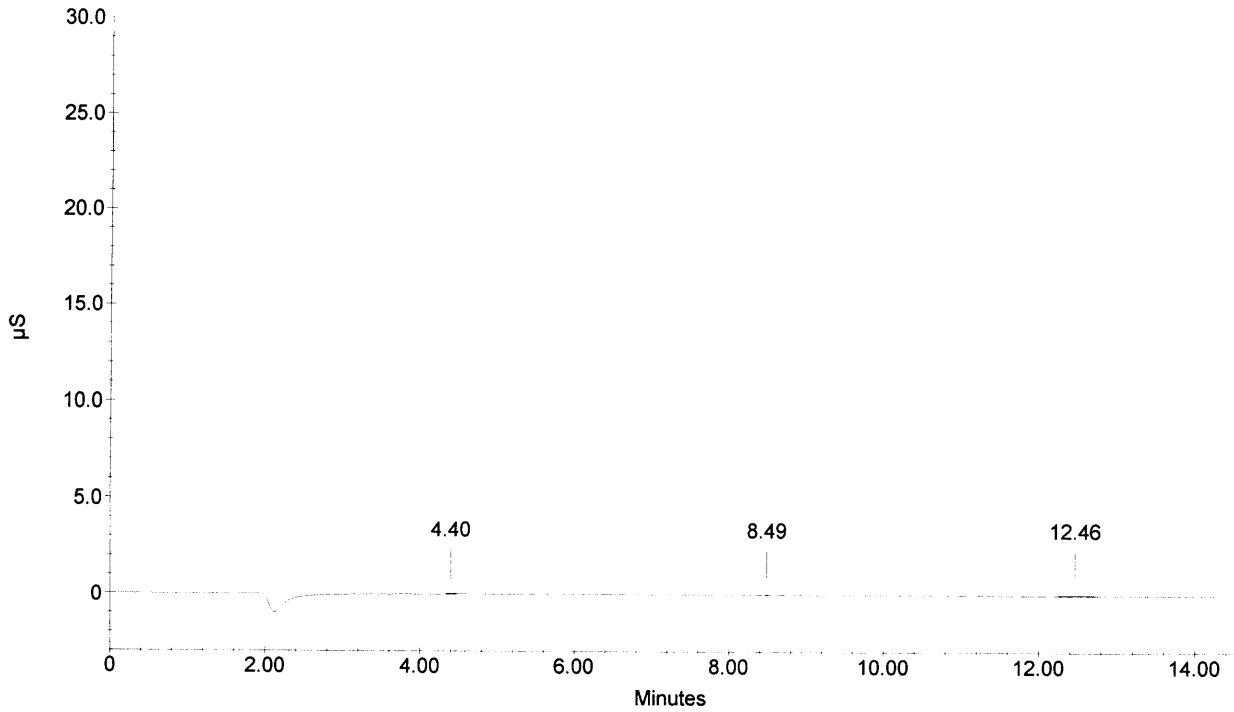
Date Time Collected : 3/2/05 11:02:38 PM
System Name : Dx-500
Detector Name : Conductivity Detector
Column Type : AS14-SN#018097 AG14-#019940
System Operator : rSPIES

010083

Peak Information : All Components

Pk. Num	Ret Time	Component Name	Concentration (ppm)	Height	Area	Bl. Code	%Delta
1	4.40	CHLORIDE	0.063	238	2305	1	0.30
1	4.40	CHLORIDE	0.063	238	2305	1	0.30
		NITRITE-N					
		BROMIDE					
		NITRATE-N					
		PHOSPHATE-P					
3	12.46	SULFATE	0.078	171	3894	1	1.96
		---total(s)---					
	0.00		0.204		8505		

CCB



Sample Name : 259543 df10
Dilution Factor : 10.00
Injection Number : 45
Data File Name : ...\050302_045.DXD
Method File Name : ...\ANIONS050302.met
Schedule File Name : c:\peaknet\schedule\050302.sch

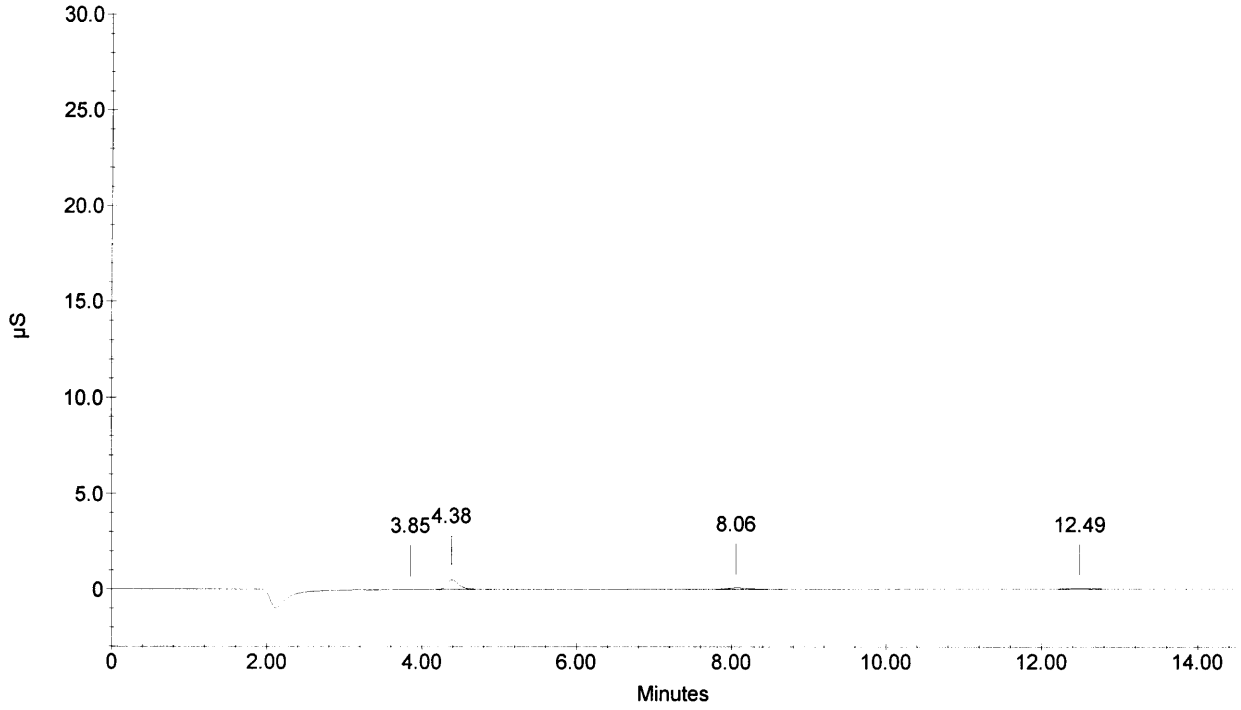
Date Time Collected : 3/2/05 11:19:55 PM
System Name : Dx-500
Detector Name : Conductivity Detector
Column Type : AS14-SN#018097 AG14-#019940
System Operator : rSPIES

010084

Peak Information : All Components

Pk. Num	Ret Time	Component Name	Concentration (ppm)	Height	Area	Bl. Code	%Delta
1	3.85		0.000	52	571	1	
2	4.38	CHLORIDE NITRITE-N BROMIDE	3.822	4984	52727	1	0.00
3	8.06	NITRATE-N PHOSPHATE-P	0.608	812	14882	1	5.59
4	12.49	SULFATE	1.261	337	9065	1	2.18
			---total(s)---				
	0.00		5.690		77244		

259543 df10



Sample Name : 259543D df10
Dilution Factor : 10.00
Injection Number : 46
Data File Name : ...\050302_046.DXD
Method File Name : ...\ANIONS050302.met
Schedule File Name : c:\peaknet\schedule\050302.sch

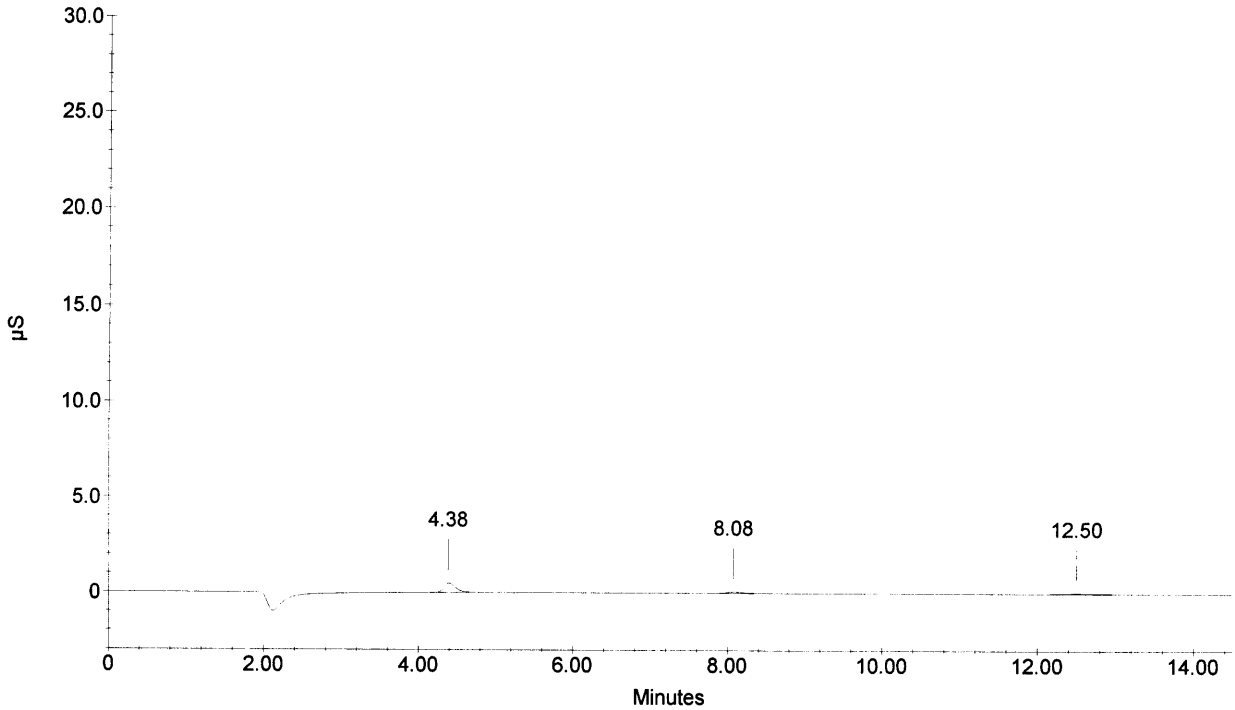
Date Time Collected : 3/2/05 11:37:13 PM
System Name : Dx-500
Detector Name : Conductivity Detector
Column Type : AS14-SN#018097 AG14-#019940
System Operator : rSPIES

010085

Peak Information : All Components

Pk. Num	Ret Time	Component Name	Concentration (ppm)	Height	Area	Bl. Code	%Delta
1	4.38	CHLORIDE	3.786	4909	52158	1	0.00
1	4.38	CHLORIDE	3.786	4909	52158	1	0.00
		NITRITE-N					
		BROMIDE					
2	8.08	NITRATE-N	0.618	837	15276	1	5.76
		PHOSPHATE-P					
3	12.50	SULFATE	1.418	412	10742	1	2.29
			---total(s)---				
	0.00		9.608		130336		

259543D df10



Sample Name : 259543S df10
Dilution Factor : 10.00
Injection Number : 47
Data File Name : ...\050302_047.DXD
Method File Name : ...\ANIONS050302.met
Schedule File Name : c:\peaknet\schedule\050302.sch

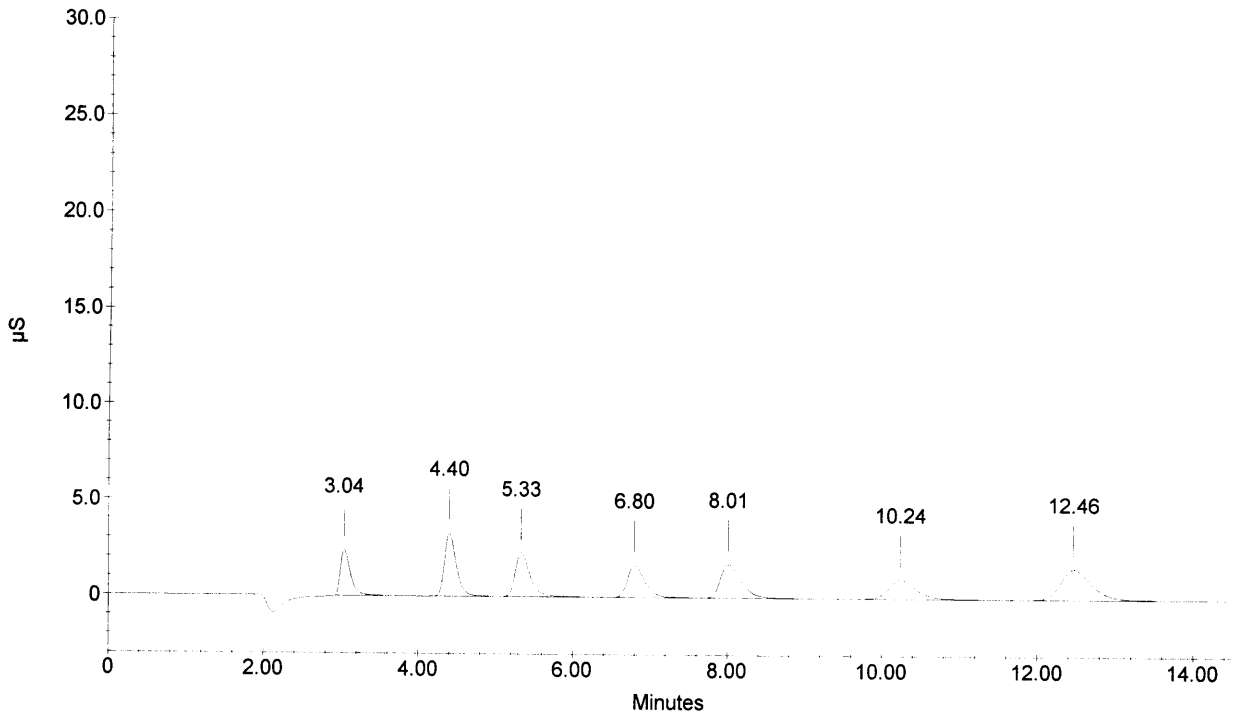
Date Time Collected : 3/2/05 11:54:31 PM
System Name : Dx-500
Detector Name : Conductivity Detector
Column Type : AS14-SN#018097 AG14-#019940
System Operator : rSPIES

010086

Peak Information : All Components

Pk. Num	Ret Time	Component Name	Concentration (ppm)	Height	Area	Bl. Code	%Delta
1	3.04	FLUORIDE	9.476	23563	214165	1	-0.44
2	4.40	CHLORIDE	22.285	32887	348664	1	0.30
3	5.33	NITRITE-N	9.498	22666	306403	1	0.50
4	6.80	BROMIDE	40.153	16786	264996	2	2.21
5	8.01	NITRATE-N	8.911	17359	328477	2	4.89
6	10.24	PHOSPHATE-P	19.005	9991	250945	1	0.39
7	12.46	SULFATE	40.997	15931	440602	1	1.96
	0.00		---total(s)--- 150.326		2154252		

259543S df10



Sample Name : 259545 df10
Dilution Factor : 10.00
Injection Number : 48
Data File Name : ...\050302_048.DXD
Method File Name : ...\ANIONS050302.met
Schedule File Name : c:\peaknet\schedule\050302.sch

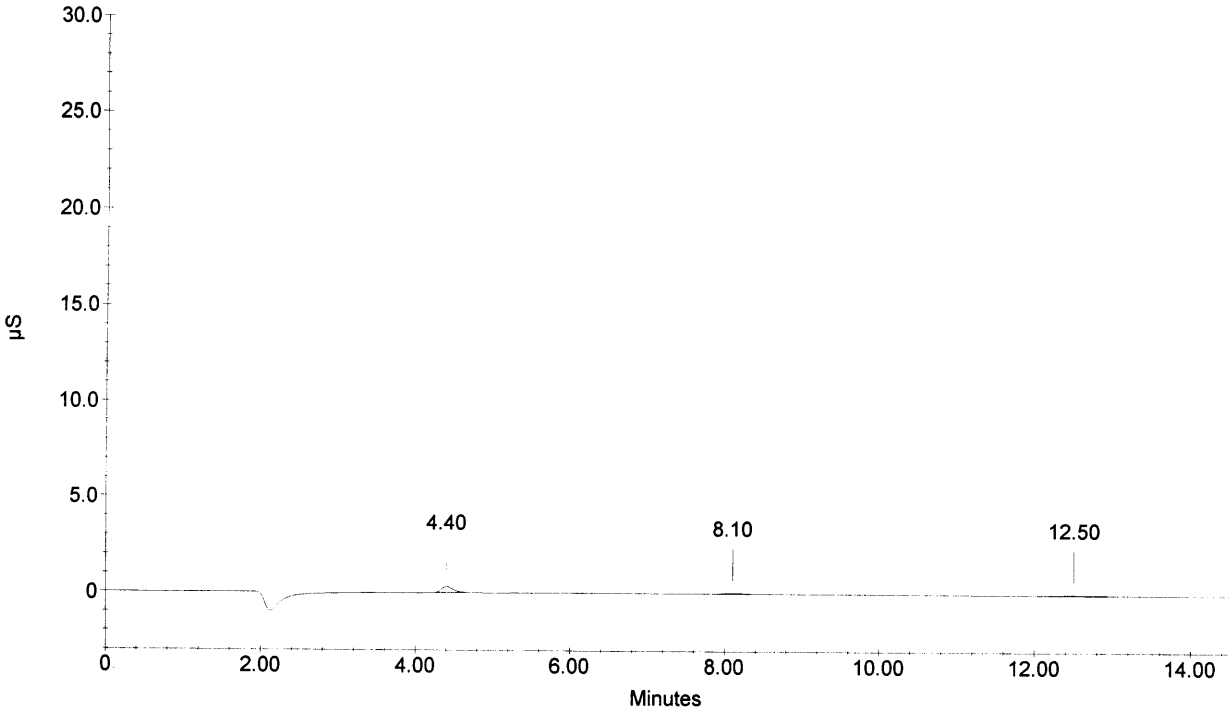
Date Time Collected : 3/3/05 12:11:51 AM
System Name : Dx-500
Detector Name : Conductivity Detector
Column Type : AS14-SN#018097 AG14-#019940
System Operator : rSPIES

010087

Peak Information : All Components

Pk. Num	Ret Time	Component Name	Concentration (ppm)	Height	Area	Bl. Code	%Delta
1	4.40	CHLORIDE	2.620	3242	33715	1	0.30
1	4.40	CHLORIDE	2.620	3242	33715	1	0.30
		NITRITE-N					
		BROMIDE					
2	8.10	NITRATE-N	0.423	460	8011	1	6.11
		PHOSPHATE-P					
3	12.50	SULFATE	0.966	240	5915	1	2.29
			---total(s)---				
	0.00		6.629		81356		

259545 df10



Sample Name : 259547 df10
Dilution Factor : 10.00
Injection Number : 49
Data File Name : ...\050302_049.DXD
Method File Name : ...\ANIONS050302.met
Schedule File Name : c:\peaknet\schedule\050302.sch

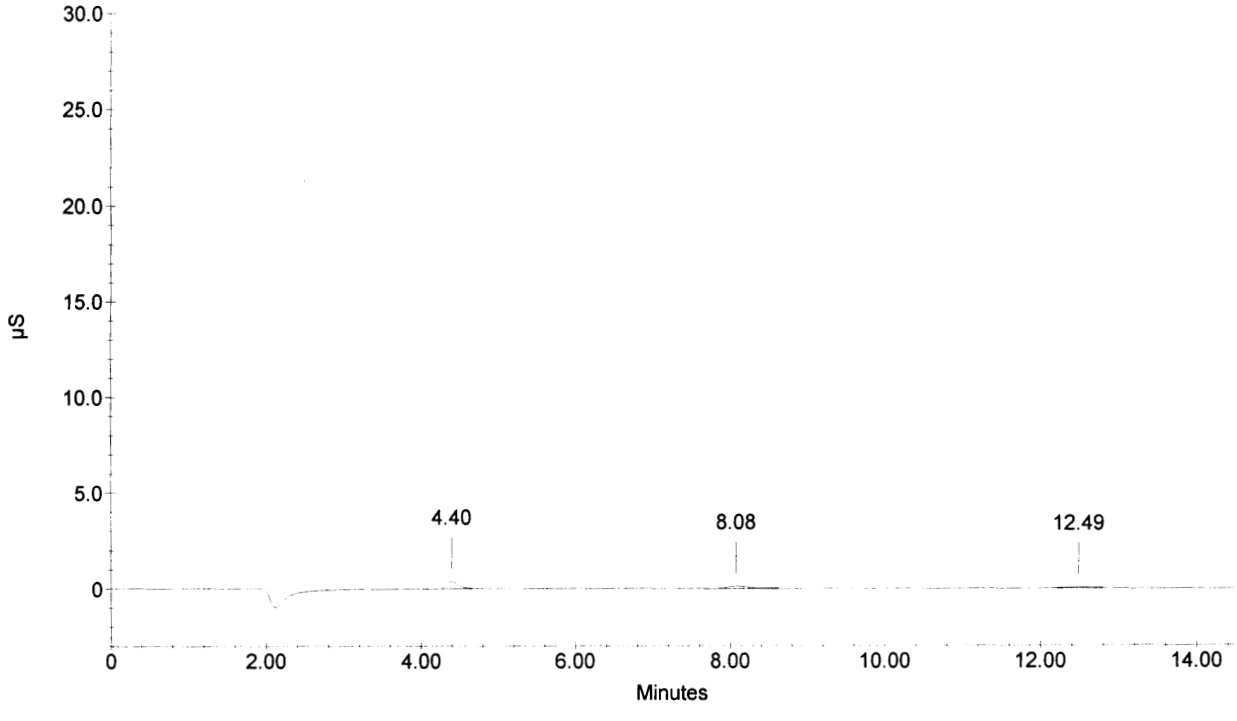
Date Time Collected : 3/3/05 12:29:08 AM
System Name : Dx-500
Detector Name : Conductivity Detector
Column Type : AS14-SN#018097 AG14-#019940
System Operator : rSPIES

010088

Peak Information : All Components

Pk. Num	Ret Time	Component Name	Concentration (ppm)	Height	Area	Bl. Code	%Delta
1	4.40	CHLORIDE	2.924	3663	38518	1	0.30
1	4.40	CHLORIDE	2.924	3663	38518	1	0.30
		NITRITE-N					
		BROMIDE					
2	8.08	NITRATE-N	0.882	1268	25101	1	5.76
		PHOSPHATE-P					
3	12.49	SULFATE	1.736	554	14141	1	2.18
			---total(s)---				
	0.00		8.465		116277		

259547 df10



Sample Name : 259549 df10
Dilution Factor : 10.00
Injection Number : 50
Data File Name : ...\050302_050.DXD
Method File Name : ...\ANIONS050302.met
Schedule File Name : c:\peaknet\schedule\050302.sch

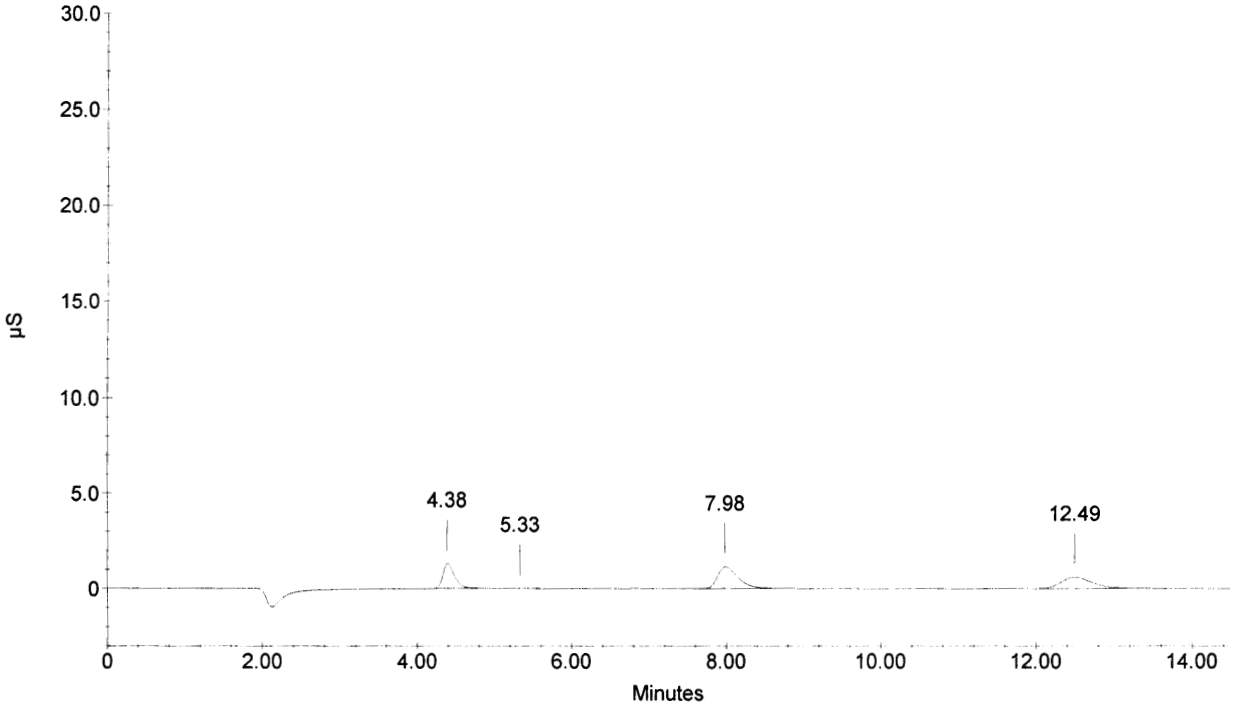
Date Time Collected : 3/3/05 12:46:26 AM
System Name : Dx-500
Detector Name : Conductivity Detector
Column Type : AS14-SN#018097 AG14-#019940
System Operator : rSPIES

010089

Peak Information : All Components

Pk. Num	Ret Time	Component Name	Concentration (ppm)	Height	Area	Bl. Code	%Delta
1	4.38	CHLORIDE	9.212	13009	138375	1	0.00
1	4.38	CHLORIDE	9.212	13009	138375	1	0.00
2	5.33	NITRITE-N BROMIDE	0.490	139	1642	1	0.50
3	7.98	NITRATE-N PHOSPHATE-P	5.843	11449	211556	1	4.54
4	12.49	SULFATE	15.951	6081	166927	1	2.18
	0.00		---total(s)--- 40.708		656876		

259549 df10



Sample Name : 259551 df10
Dilution Factor : 10.00
Injection Number : 51
Data File Name : ...\050302_051.DXD
Method File Name : ...\ANIONS050302.met
Schedule File Name : c:\peaknet\schedule\050302.sch

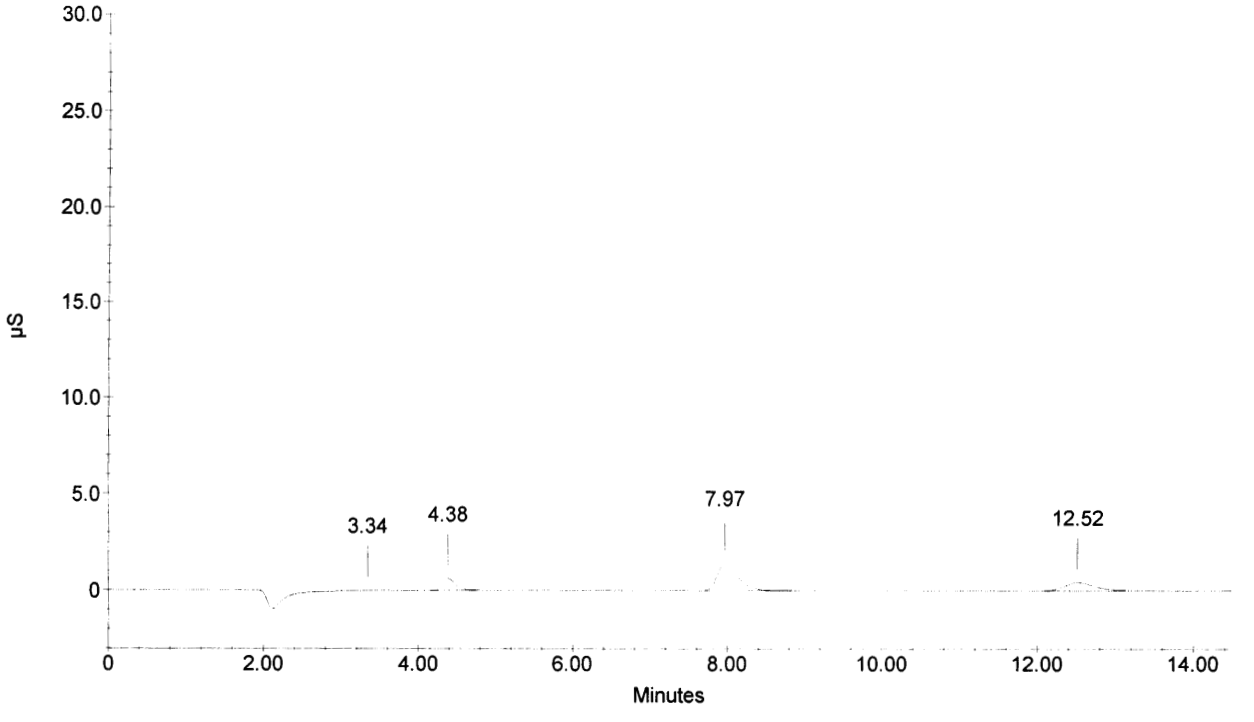
Date Time Collected : 3/3/05 1:03:45 AM
System Name : Dx-500
Detector Name : Conductivity Detector
Column Type : AS14-SN#018097 AG14-#019940
System Operator : rSPIES

010090

Peak Information : All Components

Pk. Num	Ret Time	Component Name	Concentration (ppm)	Height	Area	Bl. Code	%Delta
1	3.34	FLUORIDE	0.709	111	827	1	9.62
2	4.38	CHLORIDE	4.619	6047	65355	1	0.00
		NITRITE-N					
		BROMIDE					
3	7.97	NITRATE-N	7.192	14127	262795	1	4.36
		PHOSPHATE-P					
4	12.52	SULFATE	11.340	4289	117167	1	2.40
			---total(s)---				
	0.00		23.859		446144		

259551 df10



Sample Name : CCV
Dilution Factor : 20.00
Injection Number : 52
Data File Name : ...\050302_052.DXD
Method File Name : ...\ANIONS050302.met
Schedule File Name : c:\peaknet\schedule\050302.sch

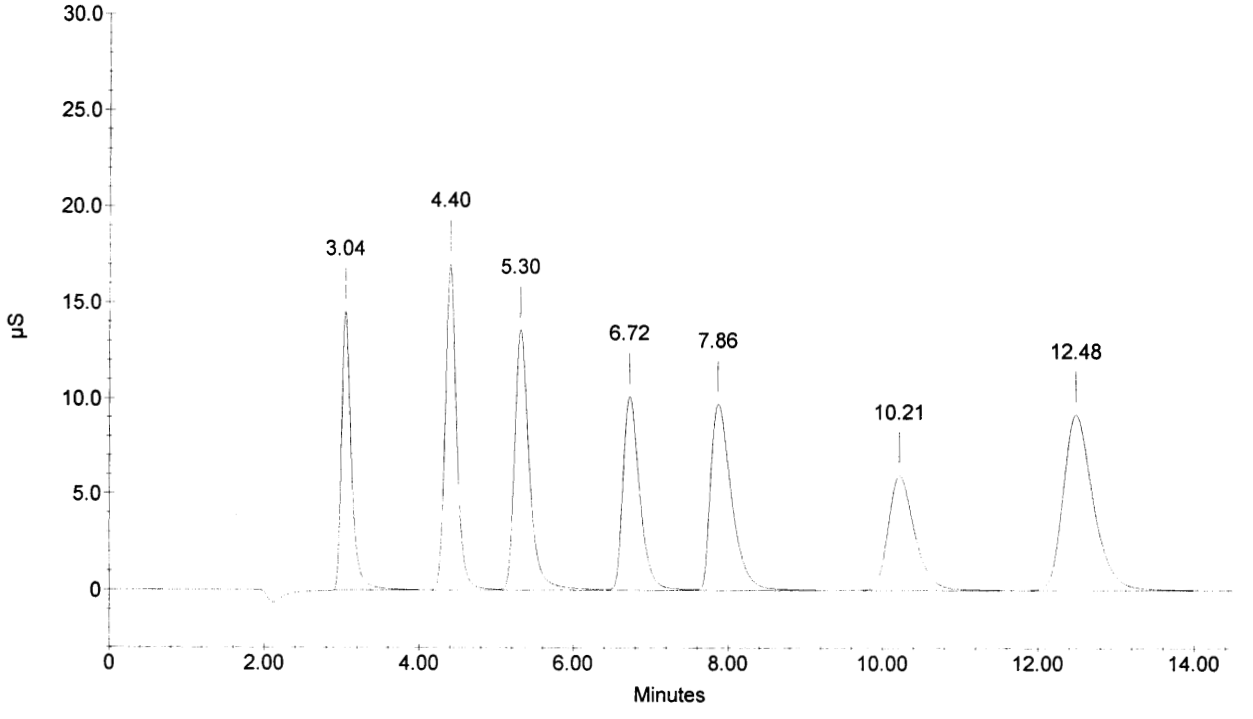
Date Time Collected : 3/3/05 1:21:04 AM
System Name : Dx-500
Detector Name : Conductivity Detector
Column Type : AS14-SN#018097 AG14-#019940
System Operator : rSPIES

010091

Peak Information : All Components

Pk. Num	Ret Time	Component Name	Concentration (ppm)	Height	Area	Bl. Code	%Delta
1	3.04	FLUORIDE	102.123	144863	1296970	1	-0.44
2	4.40	CHLORIDE	207.720	169898	1756044	2	0.30
3	5.30	NITRITE-N	102.373	135429	1808461	2	0.00
4	6.72	BROMIDE	422.319	100979	1523374	2	1.00
5	7.86	NITRATE-N	91.094	97028	1825864	2	2.97
6	10.21	PHOSPHATE-P	198.378	59456	1416635	2	0.13
7	12.48	SULFATE	416.762	91591	2448706	2	2.07
			---total(s)---				
	0.00		1540.770		12076054		

CCV



Sample Name : CCB
Dilution Factor : 1.00
Injection Number : 53
Data File Name : ...\050302_053.DXD
Method File Name : ...\ANIONS050302.met
Schedule File Name : c:\peaknet\schedule\050302.sch

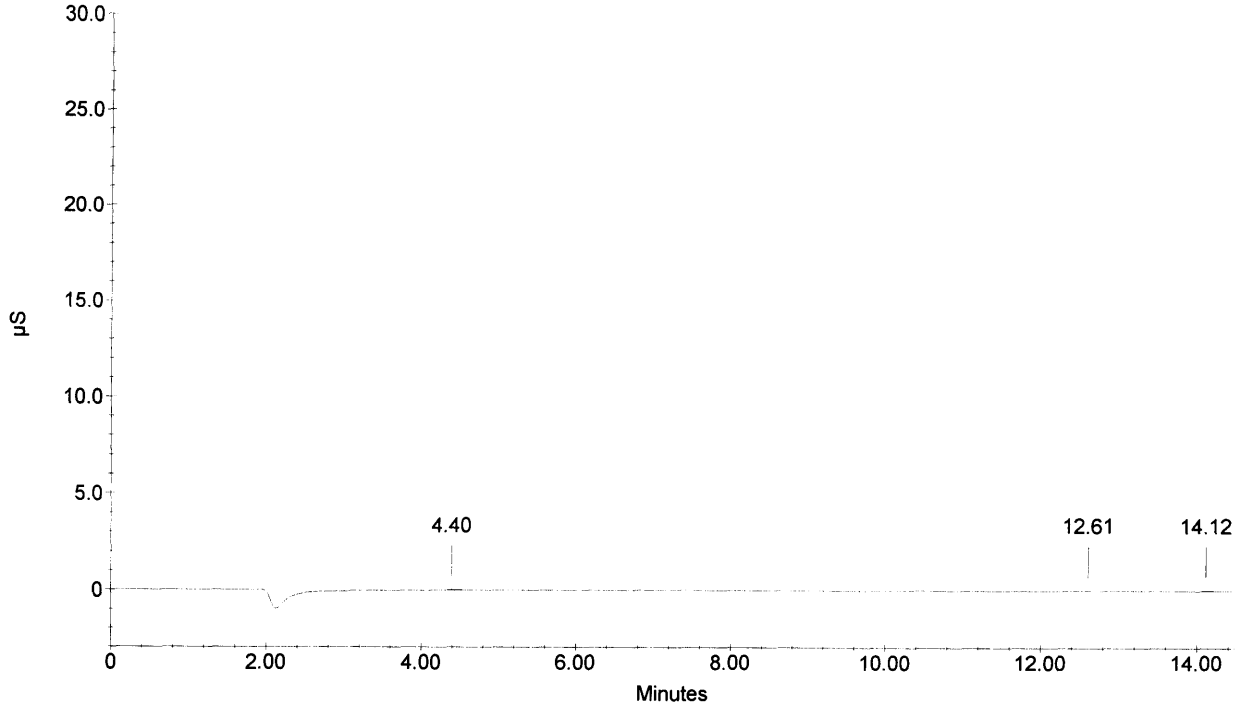
Date Time Collected : 3/3/05 1:38:22 AM
System Name : Dx-500
Detector Name : Conductivity Detector
Column Type : AS14-SN#018097 AG14-#019940
System Operator : rSPIES

010092

Peak Information : All Components

Pk. Num	Ret Time	Component Name	Concentration (ppm)	Height	Area	Bl. Code	%Delta
1	4.40	CHLORIDE	0.056	138	1257	1	0.30
1	4.40	CHLORIDE	0.056	138	1257	1	0.30
		NITRITE-N					
		BROMIDE					
		NITRATE-N					
		PHOSPHATE-P					
2	12.61	SULFATE	0.058	105	1829	1	3.16
			---total(s)---				
	0.00		0.171		4344		

CCB



SOUTHWEST RESEARCH INSTITUTE
NUCLEAR PROJECT
CLIENT: Division 20
TASK ORDER: 050222-4
SRR: 27250
SDG: 259407
CASE: CNWRA
VTSR: February 21, 2005
PROJECT#: 06002.01.232

010093

Certificates of Analysis

010094

SPEXertificate™

Certificate of Reference Material

INORGANIC LABS/RADCHEM LABS
DATE RECEIVED: 01/10/05
DATE EXPIRED: 01/15/2006 VOS
DATE OPENED: 01/11/05
INORG: 4951 PO: F5519

Catalog Number: AS-F9-2X/2Y **Lot No.** 27-122AS
Description: 1000 mg/L Fluoride
Matrix: H2O

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

Certified Value: 998 mg/L
Uncertainty Associated with Measurement: +/- 3.0 mg/L
Certified Value is Traceable to: NIST SRM 3183

The CRM is prepared gravimetrically using high purity Sodium Fluoride Lot# M44142 . The certified value listed is the average of values obtained by classical wet assay and Ion Chromatography analysis.

Refer to side 2 for details of measurement uncertainties.

Classical Wet Assay: 997 mg/L:
Method: Potentiometric using Fluoride combination electrode

Instrumentation Analysis By Ion Chromatography: 999 mg/L:

Uncertified Properties:

Trace Ionic Impurities in the Actual Solution via IC Analysis:

Ion	mg/L	Ion	mg/L
Br	<0.2	NO3	<0.2
Cl	<10	PO4	<1
NO2	<0.2	SO4	<0.5

Balances are calibrated regularly with weight sets traceable to NIST #32856, #32857 and others. This CRM is guaranteed stable to +/-0.5% of the certified concentration inclusive of uncertainty of measurements and other effects, such as transpiration losses, for a period of one year from the date of certification. This guarantee is valid only when the material is kept tightly capped and transported and stored under laboratory conditions.

Date of Certification: JAN. -- 2005 Certifying Officer: N. Kocherlakota

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010095

Report of Certification

This Certified Reference Material has been prepared and certified under an ISO 9001 system consistent with the following guides:
Guide To The Expression Of Uncertainty In Measurement 1995
EURACHEM/CITAC Guide: Quantifying Uncertainty in Analytical Measurement – Second Edition
ASTM Guide D6362-98
ISO Guide 34: Quality system guidelines for the production of reference materials.
ISO Guide 17025: Certification of reference materials, general and statistical principles
ISO Guide 31: Contents of certificates of reference materials
NIST Technical Note 1297
ILAC-G12-2000: Guidelines for the requirements for the competence of reference materials producers
ISO/REMCO N280

Material Source:

All analytes and matrix materials are obtained and verified by SPEX CertiPrep from pre-qualified vendors as per ISO 9000 guidelines. Vendor identifications are proprietary, however sources of all materials used in the preparation and testing of SPEX CertiPrep CRMs are tracked and documented. For further information contact CRM Sales.

Instructions for Use:

Primary usage of this CRM is in neat form or diluted serially with matrix of a purity at or greater than the purity of the original matrix solution. If dilution is required the diluent must be compatible with all certified analytes and contain stabilizers appropriate for the period of intended use. The CRM can also be used as a spike or with a spike, again with appropriate compatibility considerations. All solutions should be thoroughly mixed, by shaking, prior to use and never pipetted directly from the bottle. All surfaces that come in contact with the solution must be thoroughly cleaned and leached prior to use. Dilutions should be performed only with Class A volumetric glassware.

Method of Preparation:

Clean laboratory procedures and techniques have been used throughout the preparation. All materials, equipment, analytical instrumentation and personnel have been qualified prior to use. The highest purity acids applicable, 18 megohm, double deionized water, acid-leached triple-rinsed bottles, and Class A glassware have been used in all preparations.

Homogeneity:

The Homogeneity of the CRM has been confirmed by procedures consistent with ISO guide 17025, ISO/REMCO N280 and ASTM D6362-98 Appendix X2. Random, replicate samples of the final, packaged material have been analyzed for the certified values by procedures consistent with the intended use of the CRM.
The mathematical expression $k_s=s^2m$ is employed to determine the sampling size
s = relative standard deviation in % for one component of the sample. (ie. The sub-sampling uncertainty)
m = the sub-sampling mass
k_s = mass of sub-sample necessary to ensure a relative sub-sampling error of 1% (68% confidence level) in a single determination

Statistical estimator and Confidence limits:

The certified value 'x' listed on the reverse of this document is at the 95% level of confidence and can be expressed as
X = x+/-U where X =True value (Labeled Value), U= Expanded uncertainty
$U=ku_c$ where k=2 is the coverage factor at the 95% confidence level
u_c is obtained by combining the individual element standard uncertainty components u_i and $u_c=\sqrt{\Sigma u_i^2}$

Certification Traveler Report:

All certified values reported were derived from Traveler Report (Spex CertiPrep's traceability documentation) identified by the lot number of this CRM. For further information contact CRM Sales.

Legal Notice:

SPEX CertiPrep reference materials are not for any cosmetic, drug or household application and are to be used only by qualified individuals who are trained in appropriate procedures. No claims against SPEX CertiPrep, Inc. of any kind whatsoever, whether based on breach of warranty, alleged negligence, or otherwise, with respect to this RM shall be greater than the purchase price. In no event shall SPEX CertiPrep, Inc. be liable for any loss of profits or any incidental, special, or consequential damages.

ISO 9001
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203 Norcross Avenue • Metuchen, NJ 08840 USA

010096

SPEXertificate™

Certificate of Reference Material

Catalog Number: AS-NO2N9-2X/2Y **Lot No.** 7-158VY

Description: 1000 mg/L Nitrite-N

Matrix: H2O

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

Certified Value: 1001.5 mg/L

Uncertainty Associated with Measurement: +/- 3.0 mg/L

Certified Value is Traceable to: SPEX CRM 0902

The CRM is prepared gravimetrically using high purity Sodium Nitrite Lot# 0791R . The certified value listed is the average of values obtained by classical wet assay and Ion Chromatography analysis.

Refer to side 2 for details of measurement uncertainties.

Classical Wet Assay: 1000mg/L

Method: Titration with KMNO4 that was standardized against Sodium Oxalate NIST SRM 40h.

Instrumentation Analysis By Ion Chromatography: 1003 mg/L

Uncertified Properties:

Trace Ionic Impurities in the Actual Solution via IC Analysis:

Ion	mg/L	Ion	mg/L
Br	<20	NO3	<40
Cl	<20	PO4	<0.8
F	<0.4	SO4	<0.4

Balances are calibrated regularly with weight sets traceable to NIST #32856, #32857 and others This CRM is guaranteed stable to +/-0.5% of the certified concentration inclusive of uncertainty of measurements and other effects, such as transpiration losses, for a period of one year from the date of certification. This guarantee is valid only when the material is kept tightly capped and transported and stored under laboratory conditions.

Date of Certification: MAR - - 2004 Certifying Officer: N. Kocherlakota

INORGANIC LABS/RADCHEM LABS
DATE RECEIVED: 03/05/04
DATE EXPIRED: 03/15/2005 VOS
DATE OPENED: 03/05/04
INORG: 4480 PO: F52321

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010097

SPEXertificate™

Certificate of Reference Material

Catalog Number: AS-BR9-2X/2Y **Lot No.** 27-128AS

Description: 1000 mg/L Bromide

Matrix: H2O

This ASSURANCE ®certified reference material, CRM, is intended primarily for use as a calibration standard or quality control standard for Ion Chromatography instrumentation. It can be employed in USEPA, ASTM and other methods relevant to the certified properties listed below.

Certified Value: 1003.5 mg/L

Uncertainty Associated with Measurement: +/- 3.0 mg/L

Certified Value is Traceable to: NIST SRM 3184

The CRM is prepared gravimetrically using high purity Sodium Bromide Lot# 017400 . The certified value listed is the average of values obtained by classical wet assay and Ion Chromatography analysis.

Refer to side 2 for details of measurement uncertainties.

Classical Wet Assay: 1003 mg/L:

Method: Precipitation using Silver Nitrate, filter, dry and weigh as AgBr.

Instrumentation Analysis By Ion Chromatography: 1004 mg/L:

Uncertified Properties:

Trace Ionic Impurities in the Actual Solution via IC Analysis:

Ion	mg/L	Ion	mg/L
Cl	<1.50	NO3	<0.05
F	<0.02	PO4	<0.20
NO2	<0.05	SO4	<0.05

Balances are calibrated regularly with weight sets traceable to NIST #32856, #32857 and others. This CRM is guaranteed stable to +/-0.5% of the certified concentration inclusive of uncertainty of measurements and other effects, such as transpiration losses, for a period of one year from the date of certification. This guarantee is valid only when the material is kept tightly capped and transported and stored under laboratory conditions.

Date of Certification: JUN - - 2004 Certifying Officer: N. Kocherlakota

INORGANIC LABS/RAD/MEM LABS
DATE RECEIVED: 06/15/04
DATE EXPIRED: 06/15/2005 WS
DATE OPENED: 06/15/04
INORG: 46603 PO: 53392

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SPEXertificate™ 010098

Certificate of Reference Material

INORGANIC LABS/RADCHEM LABS
DATE RECEIVED: 01/10/05
DATE EXPIRED: 01/15/2006 VOL
DATE OPENED: 01/11/05
INORG: 4952 PO: F55119

Catalog Number: AS-NO_3N9-2X/2Y **Lot No.:** 27-120AS
Description: 1000 mg/L of Nitrate-N
Matrix: H_2O

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

Certified Value: Nitrate-N (NO_3^--N): 1002.5 mg/L ± 3 mg/L
Traceable to: NIST SRM 3185

The CRM is prepared gravimetrically using high purity Sodium Nitrate ($NaNO_3$) Lot#M14156. The certified value listed is the average of values obtained by classical wet assay and Ion Chromatography analysis.

Refer to side 2 for details of measurement uncertainties.

Classical Wet Assay: 1001 mg/L
Method: Gravimetric analysis by precipitation using Nitron Acetate, filtering, drying and weighing as Nitron Nitrate ($C_{20}H_{17}N_4.NO_3$).

Instrumental Analysis by Ion Chromatography: 1004 mg/L

Trace Anion Impurities in the Actual Solution via IC Analysis:

Element	mg/L
F^-	<0.05
Cl^-	<0.2
NO_2^-	<0.2
Br^-	<0.5
SO_4^-	<0.5
PO_4^{3-}	<2.0

Balances are calibrated regularly with weight sets traceable to NIST#s 32856, 32867 and others. This CRM is guaranteed stable to +/- 0.5% of the certified concentration inclusive of uncertainty of measurements and other effects, such as transpiration losses, for a period of one year from the date of certification. This guarantee is valid only when the material is kept tightly capped and transported and stored under laboratory conditions.

Date of Certification: JAN. -- 2005 Certifying Officer: N. Kocherlakota

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SPECertificate™

010099

Certificate of Reference Material

Catalog Number: AS-PO_4P9-2X/2Y **Lot No.:** 27-23AS
Description: 1000 mg/L of Phosphate-Phosphorus
Matrix: H2O

INORGANIC LABS/RADCHEM LABS
DATE RECEIVED: 01/11/05
DATE EXPIRED: 01/15/2006 VOS
DATE OPENED: 01/11/05
INORG: 4953 PO: F55119

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

Certified Value: Phosphate-Phosphorus (P): 1002.5 mg/L ± 3 mg/L
Traceable to: NIST SRM 3186

The CRM is prepared gravimetrically using high purity (99.999%) Potassium Dihydrogen Orthophosphate (KH_2PO_4) Lot#07991C. The certified value listed is the average of values obtained by classical wet assay and Ion Chromatography analysis.

Refer to side 2 for details of measurement uncertainties.

Classical Wet Assay: 1003 mg/L
Method: Gravimetric analysis by precipitation using Magnesia Mixture, filtering, drying and weighing as $Mg_2P_2O_7$.

Instrumental Analysis by Ion Chromatography: 1002 mg/L

Trace Anion Impurities in the Actual Solution via IC Analysis:

Element	mg/L	Element	mg/L
F^-	<0.1	NO_3^-	<0.2
Br^-	<0.1	NO_2^-	<0.2
SO_4^{-2}	<0.1	Cl^-	<2.0

Balances are calibrated regularly with weight sets traceable to NIST#s 32856, 32867 and others. This CRM is guaranteed stable and accurate to +/- 0.5% of the certified concentration value for a period of one year from the date of certification. This guarantee is valid only when the material is kept tightly capped and transported and stored under laboratory conditions.

Date of Certification: JAN. -- 2005 Certifying Officer: N. Kocherlakota

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010100

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Certificate of Reference Material

Catalog Number: AS-SO49-2X/2Y **Lot No.** 27-53AS

Description: 1000 mg/L Sulfate

Matrix: H2O

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

Certified Value: 997 mg/L

Uncertainty Associated with Measurement: +/- 3.0 mg/L

Certified Value is Traceable to: NIST SRM 3181

The CRM is prepared gravimetrically using high purity Potassium Sulfate Lot# X34146 . The certified value listed is the average of values obtained by classical wet assay and Ion Chromatography analysis.

Refer to side 2 for details of measurement uncertainties.

Classical Wet Assay: 998 mg/L

Method: Precipitated using Barium Chloride, filtered, ignited and weighed as BaSO4

Instrumentation Analysis By Ion Chromatography: 996 mg/L

Uncertified Properties:

Trace Ionic Impurities in the Actual Solution via IC Analysis:

Ion	mg/L	Ion	mg/L
Cl	<0.01	Br	<0.01
F	<0.005	NO3	<0.01
NO2	<0.01	PO4	<0.10

Balances are calibrated regularly with weight sets traceable to NIST #32856, #32857 and others. This CRM is guaranteed stable to +/-0.5% of the certified concentration inclusive of uncertainty of measurements and other effects, such as transpiration losses, for a period of one year from the date of certification. This guarantee is valid only when the material is kept tightly capped and transported and stored under laboratory conditions.

Date of Certification: JUN - - 2004 Certifying Officer: N. Kocherlakota

INORGANIC LABS/RADCHEM LABS
DATE RECEIVED: 06/24/04
DATE EXPIRED: 06/30/2005 V03
DATE OPENED: 06/24/04
INORG: 4610 PO: F53392

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010101

INORGANIC LABS/RADCHEM LABS
DATE RECEIVED: 01/11/05
DATE EXPIRED: 06/30/2005 VOS
DATE OPENED: 01/11/05
INORG: 4954 PO: F55120

SOLUTIONS Plus, Inc.
2275 Cassens Dr., Ste. 147 Fenton MO 63026 636-349-4922 Fax: 636-349-8027 email: solnplus@accessus.net

CERTIFICATE OF ANALYSIS

PRODUCT: Nitrite Solution, APHA, Nitrogen (Nitrite)
1 ml = 1.0 mg Nitrogen

CODE: N065050

LOT: 3412201

INGREDIENTS:

Sodium Nitrite, ACS	(CAS # 7632-00-0)
Reagent Grade I Water	(CAS # 7732-18-5)
with a trace of Chloroform as preservative	(CAS # 67-66-3)

THEORETICAL VALUE: 1000 ppm NO_2^- (990 - 1010 ppm NO_2^-)

Analysis: 1006 ppm NO_2^- (Nitrite)

METHOD OF ANALYSIS: Potassium Permanganate Titration

Potassium Permanganate standardized against Sodium Oxalate, NIST SRM 40h

APPEARANCE: Clear, colorless solution

EXPIRATION DATE: 06/05
(6 months)

NOTE: APHA recommends use of Chloroform to retard bacterial growth, which would convert Nitrite to Nitrate.

Balances are calibrated using NIST-traceable weights whose verification of maintenance and recalibration is documented per in-house Standard Operating Procedures. Class A glassware also is calibrated and routinely rechecked per in-house Standard Operating Procedures.

Date: 12-20-04

Certified By: Neal T. Parmentier

Neal T. Parmentier
Quality Control Supervisor

010102

INORGANIC LABS/RADCHEM LABS
DATE RECEIVED: 11/19/04
DATE EXPIRED: 11/15/2005 WS
DATE OPENED: 11/19/04
INORG: 4870 PO: F54778

SPEXertificate™

Certificate of Reference Material

Catalog Number: ICMIX2-100 **Lot No.:** 28-138AS
Description: **IC Instrument Check Standard 2**
Matrix: H_2O

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

The CRM is prepared from high purity single ion concentrates of individual elements using Class A laboratory ware to give precise concentration.
Refer to side 2 for details of measurement uncertainties.

Instrumental Analysis by ION Chromatography:

Analyte	Labeled (mg/L)	Measured (mg/L)	NIST SRM
F^-	100	100	3183
Cl^-	200	200	3182
Br^-	400	399	3184
NO_3^-	400	402	3185
HPO_4^{-2}	600	600	3186
SO_4^{-2}	400	399	3181

Spex Reference Multi: Lot #IC6-77VY

Balances are calibrated regularly with weight sets traceable to NIST#s 32856, 32867 and others. This CRM is guaranteed stable and accurate to +/- 0.5% on the average of all the certified concentrations with no single component exceeding +/- 2%. This guarantee is valid for a period of one year from the date of certification only when the material is kept tightly capped and transported and stored under laboratory conditions.

Date of Certification: NOV - - 2004 Certifying Officer: N. Kocherlakota

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010103

1001 West Saint Paul Avenue
Milwaukee, WI 53233 USA
Tel.: 800-558-9160 • (414) 273-3850
Fax: 800-962-9591 • (414) 273-4979
e-mail: aldrich@sial.com

ALDRICH®

Certificate of Analysis

SOUTHWEST RESEARCH INST
DANNY RAMIREZ
6220 CULEBRA RD
SAN ANTONIO TX 78238

PO NBR: 130686E

INORGANICS LAB 27/28/29/30/34
DATE RECEIVED: 1/9/2001
DATE EXPIRED: 1/9/2012 DR
DATE OPENED: 1/9/2001
INORG: 2626 PO: 130686E

PRODUCT NUMBER: 236527-500G

LOT NUMBER: 15308EI

PRODUCT NAME: SODIUM HYDROGENCARBONATE, 99.7+%, A.C.S. REAGENT

FORMULA: NAHCO3

FORMULA WEIGHT: 84.01

APPEARANCE	WHITE POWDER
TITRATION	100.3 % (WITH HCL)
ICP ASSAY	CONFIRMS SODIUM COMPONENT
INSOLUBLE MATTER	0.001% *
CALCIUM	0.0050%
CHLORIDE	0.0014% *
IRON	< 0.0001% *
HEAVY METALS	<5PPM (AS PB) *
POTASSIUM	<0.0020 % *
MAGNESIUM	0.00025%
AMMONIUM	<5PPM *
PHOSPHATE	<0.001% *
CALCIUM, MAGNESIUM & R2O3 PRECIPITATE	0.016% *

CONTINUED ON NEXT PAGE

ALDRICH CHEMICAL COMPANY
DAVID SWESSEL
JANUARY 5, 2001

Sigma-Aldrich, Inc. warrants that its products conform to the information contained in this and other Sigma-Aldrich publications. Purchaser must determine the suitability of the product(s) for their particular use. Additional terms and conditions may apply. Please see reverse side of the invoice or packing slip.

Aldrich brand products are sold exclusively through Sigma-Aldrich, Inc.

Organics and Inorganics for Chemical Synthesis.

We are Committed to the Success of our Customers through Science, Technology and Service.

010104

SIGMA-ALDRICH

Certificate of Analysis

Product Name	Sodium carbonate, ACS reagent (primary standard), anhydrous 99.95-100.05% as dry basis
Product Number	22,348-4
Product Brand	ALDRICH
CAS Number	497-19-8
Molecular Formula	CNa_2O_3
Molecular Weight	105.99

TEST	**LOT 04922MO RESULTS**
APPEARANCE	WHITE GRANULAR POWDER
TITRATION	99.97% (WITH HCL)
LOSS ON DRYING	<0.1% (285 DEG C) *
ICP ASSAY	CONFIRMS SODIUM COMPONENT
INSOLUBLE MATTER	<0.002 (10%, H2O) *
AMMONIUM HYDROXIDE PRECIPITATE	0.002% *
CALCIUM	0.004% *
CHLORIDE	0.0006% *
IRON	<3 PPM *
HEAVY METALS	<3 PPM (AS PB) *
POTASSIUM	0.0005% *
MAGNESIUM	0.002% *
NITROGEN COMPOUNDS	<0.001% *
PHOSPHATE	0.0005% *
SULFUR COMPOUNDS	<0.003% *
SILICA	<0.005% *
	* SUPPLIER DATA
	MEETS REQUIREMENTS OF ACS 9TH ED
QUALITY CONTROL	DECEMBER, 2001
ACCEPTANCE DATE	

Ronnie J. Martin, Supervisor
Quality Control
Milwaukee, Wisconsin USA

INORGANIC LABS/RADCHEM LABS
DATE RECEIVED: 11/11/02
DATE EXPIRED: 11/11/2012
DATE OPENED: 11/11/02
INORG: 3757 PO: 334588E

Fisher Scientific

Fisher Chemical

010105

1 Reagent Lane
Fairlawn, NJ 07410
201.796.7100 tel
201.796.1329 fax

Certificate of Analysis

Fisher Scientific's Quality System is Certified to ISO9002 (1994) standard by DNV Cert. # 96-HOU-AQ-8052

This is to certify that units of the lot number mentioned below were tested and found to comply with the specifications of the grade listed. Certain data has been supplied by third parties. Fisher Scientific expressly disclaims all warranties, express or implied, including the implied warranties of merchantability and fitness for a particular purpose. Unless otherwise stated, these products are not intended for dialysis, parenteral or injectable use without further processing. The following are the actual analytical results obtained:

Catalog Number A61	**Mfg. Date** 12/08/2003
Lot Number 033269	**Sample ID** A61...033269.B1.
Description L-ASCORBIC ACID, A.C.S.	

Result Name	Units	Specifications	Test Value
APPEARANCE	REPORT	White crystalline powder	WHITE CRYSTALLINE POWDER
ASSAY	%	99.0 Minimum	99.2000
HEAVY METALS(AS Pb)	%	0.002 Maximum	0.0002
IDENTIFICATION	PASS/FAIL	Pass test	PASS
IGNITION RESIDUE	%	0.1 Maximum	0.01000
IRON	%	0.001 Maximum	0.00010
SPECIFIC ROTATION	DEGREES (+ OR -)	+20.5 - +21.5	21.000

CERTIFIED BY

Robert Dowd
Lab Manager Fair Lawn

Edgar E. Hess
Lab Manager BPF

Note: The data listed is valid for all package sizes of this lot of product, expressed as an extension of the catalog number listed above. If there are any questions with this certificate, please call Chemical Services at 1.800.227.6701.

Fisher Scientific

Fisher Chemical

1 Reagent Lane
Fairlawn, NJ 07410
201.796.7100 tel
201.796.1329 fax

Certificate of Analysis

010106

Fisher Scientific's Quality System is Certified to ISO9002 (1994) standard by DNV Cert. # 96-HOU-AQ-8052

This is to certify that units of the lot number mentioned below were tested and found to comply with the specifications of the grade listed. Certain data has been supplied by third parties. Fisher Scientific expressly disclaims all warranties, express or implied, including the implied warranties of merchantability and fitness for a particular purpose. Unless otherwise stated, these products are not intended for dialysis, parenteral or injectable use without further processing. The following are the actual analytical results obtained:

Catalog Number A929	**Mfg. Date** 04/29/2004
Lot Number 041648	**Sample ID** A929..041648.B1.
Description ACETONE-OPTIMA	

Result Name	Units	Specifications	Test Value
ALDEHYDE	%	0.002 Maximum	0.00050
APPEARANCE	REPORT	Clear colorless liquid	CLEAR, COLORLESS LIQUID
ASSAY	%	99.5 Minimum	99.5000
COLOR	APHA	5 Maximum	5
DENSITY @ 25 DEG C	GM/ML	0.7857 Maximum	0.7854
EVAPORATION RESIDUE	PPM	1 Maximum	0.60
FLUORESCENCE BKG-PPB	PPB	1 Maximum	<1.00
IDENTIFICATION	PASS/FAIL	Pass test	PASS
ISOPROPYL ALCOHOL	%	0.05 Maximum	0.010
METHANOL	%	0.05 Maximum	0.030
OPT ABS 400 - 350 NM	ABSORBANCE UNITS	0.01 Maximum	0.002
OPT.ABSORBANCE @ 330	ABSORBANCE UNITS	1.00 Maximum	0.6500
OPT.ABSORBANCE @ 340	ABSORBANCE UNITS	0.06 Maximum	0.0500
OPT.ABSORBANCE @ 350	ABSORBANCE UNITS	0.010 Maximum	0.0030
PESTICIDE RESIDUE AN	NG/L	10 Maximum	<10.0000
REFRACTIVE INDEX @25		1.3555 - 1.3580	1.3556
SOLUBILITY IN WATER	PASS/FAIL	Pass test	PASS
SUBS. REDUCING KMNO4	PASS/FAIL	Pass test	PASS
TITRATABLE ACID	mEq/g	0.0003 Maximum	0.00020
TITRATABLE BASE	mEq/g	0.0006 Maximum	<0.00010
WATER (H2O)	%	0.5 Maximum	0.500

010107

CERTIFIED BY

Lab Manager Fair Lawn

Lab Manager BPF

Note: The data listed is valid for all package sizes of this lot of product, expressed as an extension of the catalog number listed above. If there are any questions with this certificate, please call Chemical Services at 1.800.227.6701.

FISHER SCIENTIFIC
TRACEMETAL GRADE SULFURIC ACID

010108

CERTIFICATE OF ANALYSIS

Catalog No. A510

Lot No: 3103091
Release Date: January, 2004
Expiry Date: January, 2007

Tests	Units	Value
Assay	%	97%
Color	APHA	<10
Aluminum	ppb	<0.5
Antimony	ppb	<0.1
Arsenic	ppb	<1
Barium	ppb	<0.1
Beryllium	ppb	<0.1
Bismuth	ppb	<0.1
Cadmium	ppb	<0.1
Calcium	ppb	<0.5
Chromium	ppb	<0.1
Cobalt	ppb	<0.1
Copper	ppb	<0.1
Gallium	ppb	<0.1
Germanium	ppb	<0.1
Iron	ppb	<0.5
Lead	ppb	<0.1
Lithium	ppb	<0.1
Magnesium	ppb	<0.5
Manganese	ppb	<0.1
Mercury	ppb	<1
Molybdenum	ppb	<0.1
Nickel	ppb	<0.1
Potassium	ppb	<0.5
Selenium	ppb	<5
Silver	ppb	<0.1
Sodium	ppb	<0.5
Strontium	ppb	<0.1
Thorium	ppb	<0.1
Tin	ppb	<0.1
Titanium	ppb	<0.5
Uranium	ppb	<0.1
Vanadium	ppb	<0.1
Zinc	ppb	<0.2
Zirconium	ppb	<0.1

Element concentrations are at the point of bottling. Concentrations of some elements in particular, Ca, Si, K, Na, B, Al, Mg & Mn will increase due to storage in glass bottles.

INORGANIC LABS/RADCHEM LABS
DATE RECEIVED: 1/25/05
DATE EXPIRED: 1/25/05
DATE OPENED: 1/25/05 DR
INORG: 4974/4975 PO: ES2134

B McKelvey
Dr. B. McKelvey
QA/QC Manager

Fisher Chemical
A Fisher Scientific Company

Fisher Scientific Chemical Division
Pittsburgh, PA., 15275 Phone (412) 490-8300

SOUTHWEST RESEARCH INSTITUTE
NUCLEAR PROJECT
CLIENT: Division 20
TASK ORDER: 050222-4
SRR: 27250
SDG: 259407
CASE: CNWRA
VTSR: February 21, 2005
PROJECT#: 06002.01.232

010109

Pipette Calibrations

Book/page: 07 059

SwRI – Div. 01, Inorganic Labs' Adjustable Volume Pipette Verification Log

(Space provided for Inorganic Laboratories' Adjustable Volume Pipette Verification Spreadsheet)

010110

SwRI – Div. 01, Inorganic Laboratory Adjustable Pipette Verification Spreadsheet

Eppendorf #	True Value (µL)	1st Reading (g)	2nd Reading (g)	3rd Reading (g)	Avg Wt (g)	% of True Value
	20					
ADJ200-A	100					
	200					
	20					
ADJ200-C	100					
	200					
	20					
ADJ200-D	100					
	200					
	20	0.0201	0.0201	0.0200	0.020	100.33
ADJ200-G	100	0.0989	0.0985	0.0983	0.099	98.57
	200	0.1976	0.1979	0.1982	0.198	98.95
	20	0.0203	0.0201	0.0202	0.020	101.00
ADJ200-H	100	0.0993	0.0990	0.0989	0.099	99.07
	200	0.1991	0.1994	0.1979	0.199	99.40
	20	0.0205	0.0201	0.0203	0.020	101.50
ADJ200-J	100	0.0991	0.0989	0.0990	0.099	99.00
	200	0.1979	0.1974	0.1978	0.198	98.85
	20					
ADJ200	100					
	200					
	20					
ADJ200	100					
	200					
	20					
ADJ200-K	100					
	200					

JV 03/01/05

FRM-247a (Rev 3/Oct 03)

JV 03/01/05

Book/page: 07 060

SwRI Div. 01 – Inorganic Laboratory Adjustable Pipette Verification Log 010111

Balance #: 16 Thermometer #: G011 diH20 Temperature (° C) 22

	Eppendorf #	True Value (µL)	1st Reading (g)	2nd Reading (g)	3rd Reading (g)
20 µL – 200 µL		20			
	ADJ200-A	100			
		200			
		20		J.V. 03/01/05	
	ADJ200-C	100			
		200			
		20			
	ADJ200-D	100			
		200			
		20	0.0201	0.0201	0.0200
	ADJ200-G	100	0.0989	0.0985	0.0983
		200	.1976	.1979	.1982
		20	0.0203	0.0201	0.0202
	ADJ200-H	100	JV 03/01/05 0.0999993	0.0990	0.0989 JV 03/01/05
		200	.1991	.1994	.1979
		20	.0205	.0201	.0203
	ADJ200-J	100	.0991	.0989	.0990
		200	.1979	.1974	.1978
		20			
	ADJ200-K	100			
		200		J.V. 03/01/05	
		20			
	ADJ200	100			
		200			

Analyst: [signature] Date: 03/01/05

Reviewed by: [signature] Date: 04/06/05

Book/page: 07 123

SwRI – Div. 01, Inorganic Labs' Adjustable Volume Pipette Verification Log

(Space provided for Inorganic Laboratories' Adjustable Volume Pipette Verification Spreadsheet)

010112

SwRI – Div. 01, Inorganic Laboratory Adjustable Pipette Verification Spreadsheet

Eppendorf #	True Value (µL)	1st Reading (g)	2nd Reading (g)	3rd Reading (g)	Avg Wt (g)	% of True Value
	100				0.000	0.00
ADJ1000-C	500				0.000	0.00
	1000				0.000	0.00
	100				0.000	0.00
ADJ1000-D	500				0.000	0.00
	1000				0.000	0.00
	100				0.000	0.00
ADJ1000-E	500				0.000	0.00
	1000				0.000	0.00
	100				0.000	0.00
ADJ1000-F	500				0.000	0.00
	1000				0.000	0.00
	100	0.1001	0.0989	0.0991	0.099	99.37
ADJ1000-G	500	0.4913	0.4922	0.4916	0.492	98.34
	1000	0.9924	0.9953	0.9915	0.993	99.31
	100	0.1014	0.1022	0.1013	0.102	101.63
ADJ1000-H	500	0.4975	0.4958	0.4971	0.497	99.36
	1000	0.9985	0.9986	0.9992	0.999	99.88
	100	0.0995	0.0983	0.0981	0.099	98.63
ADJ1000-J	500	0.5001	0.5004	0.5009	0.500	100.09
	1000	0.9976	0.9971	0.9968	0.997	99.72
	100				0.000	0.00
ADJ1000	500				0.000	0.00
	1000				0.000	0.00
	100				0.000	0.00
ADJ1000	500				0.000	0.00
	1000				0.000	0.00

JV 03/01/05

FRM-247b (Rev 2/Oct 03)

JV 03/01/05

Book/page: 07 124

SwRI Div. 01 – Inorganic Laboratory Adjustable Pipette Verification Log

Balance #: 16 Thermometer #: G011 diH20 Temperature (° C) 22

	Eppendorf #	True Value (µL)	1st Reading (g)	2nd Reading (g)	3rd Reading (g)
100 µL – 1000 µL		100			
	ADJ1000-C	500			010113
		1000			
		100			
	ADJ1000-D	500			
		1000			
		100			
	ADJ1000-E	500			
		1000			
		100			
	ADJ1000-F	500			
		1000			
		100	.1001	.0989	0.0991
	ADJ1000-G	500	.4913	.4922	.4916
		1000	.9924	.9953	.9915
		100	~~.1034~~ .1014	.1022	.1013
	ADJ1000-H	500	.4975	.4958	.4971
		1000	.9985	.9986	.9992
		100	.0995	.0983	.0981
	ADJ1000-J	500	.5001	.5004	.5009
		1000	.9976	.9971	.9968
		100			
	ADJ1000-K	500			
		1000			
		100			
	ADJ1000	500			
		1000			

Analyst: [signature] Date: 03/01/05

Reviewed by: [signature] Date: 04/06/05

Book/page: 07 183

SwRI – Div. 01, Inorganic Labs' Adjustable Volume Pipette Verification Log

(Space provided for Inorganic Laboratories' Adjustable Volume Pipette Verification Spreadsheet)

010114

SwRI – Div. 01, Inorganic Laboratory Adjustable Pipette Verification Spreadsheet

Eppendorf #	True Value (µL)	1st Reading (g)	2nd Reading (g)	3rd Reading (g)	Avg Wt (g)	% of True Value
	500				0.000	0.00
ADJ5000-C	2500				0.000	0.00
	5000				0.000	0.00
	500				0.000	0.00
ADJ5000-G	2500				0.000	0.00
	5000				0.000	0.00
	500				0.000	0.00
ADJ5000-H	2500				0.000	0.00
	5000				0.000	0.00
	500				0.000	0.00
ADJ5000-I	2500				0.000	0.00
	5000				0.000	0.00
	500	0.4935	0.4879	0.4945	0.492	98.39
ADJ5000-J	2500	2.4603	2.4791	2.4893	2.476	99.05
	5000	5.0293	4.9750	4.9793	4.995	99.89
	500	0.5081	0.5063	0.5091	0.508	101.57
ADJ5000-K	2500	2.5214	2.5187	2.5101	2.517	100.67
	5000	5.0511	5.0111	5.0093	5.024	100.48
	500	0.5052	0.5031	0.5028	0.504	100.74
ADJ5000-L	2500	2.4913	2.4943	2.4911	2.492	99.69
	5000	5.0187	5.0219	5.0224	5.021	100.42
	500				0.000	0.00
ADJ5000	2500				0.000	0.00
	5000				0.000	0.00
	500				0.000	0.00
ADJ5000	2500				0.000	0.00
	5000				0.000	0.00
	500				0.000	0.00
ADJ5000	2500				0.000	0.00
	5000				0.000	0.00
	500				0.000	0.00
ADJ5000	2500				0.000	0.00
	5000				0.000	0.00

JV 03/01/05

JV 03/01/05

FRM-247c (Rev 2/Mar 03)

JV 03/01/05

010115

Book/page: 07 184

SwRI Div. 01 – Inorganic Laboratory Adjustable Pipette Verification Log

Balance #: 16 Thermometer #: G 011 diH20 Temperature (° C) 22

500 µL – 5000 µL

Eppendorf #	True Value (µL)	1st Reading (g)	2nd Reading (g)	3rd Reading (g)
	500			
ADJ5000-C	2500			
	5000			
	500			
ADJ5000-G	2500			
	5000			
	500			
ADJ5000-H	2500			
	5000			
	500			
ADJ5000-I	2500			
	5000			
	500	.4935	.4879	.4945
ADJ5000-J	2500	2.4603	2.4791	2.4893
	5000	5.0293	4.9750	4.9793
	500	.5081	.5063	.5091
ADJ5000-K	2500	2.5214	2.5187	2.5101
	5000	5.0511	5.0111	5.0093
	500	.5052	.5031	.5028
ADJ5000-L	2500	2.4913	2.4993	2.4911
	5000	5.0187	5.0219	5.0224
	500			
ADJ5000-M	2500			
	5000			
	500			
ADJ5000-N	2500			
	5000			
	500			
ADJ5000	2500			
	5000			
	500			
ADJ5000	2500			
	5000			

J.V. 03/01/05

Analyst: [signature] Date: 03/01/05

Reviewed by: [signature] Date: 04/06/05

FRM-244 (c) (Rev 3/Apr 04)

010116

SOUTHWEST RESEARCH INSTITUTE
NUCLEAR PROJECT
CLIENT: Division 20
TASK ORDER: 050222-4
SRR: 27250
SDG: 259407
CASE: CNWRA
VTSR: February 21, 2005
PROJECT#: 06002.01.232

Balance Calibrations

Southwest Research Institute
Division 01

BALANCE VERIFICATION LOG

BALANCE #:	LOCATION:	SERIAL #:	TOLERANCE:	COMMENTS:
16	Bldg. 70 Lab 27	P37987	±0.0005	
Date	**Std Wt (g)**	**Recorded Wt (g)**	**Operator**	
3-4-05	2.0000	1.9999	KE	SN:99-J505 26-15
3-7-05	2.0000	1.9999	KE	"
03/08/05	2.0000	1.9999	JGV	"
3-9-05	2.0000	2.0000	KE	"
3-10-05	2.0000	2.0000	JGV	"
3-11-05	2.0000	1.9999	KE	"
3-14-05	2.0000	1.9999	JGV	"
3-15-05	2.0000	1.9999	KE	"
3-16-05	2.0000	2.0000	JGV	"
3-17-05	2.0000	1.9999	KE	"

If balance is out of limits, clean the balance and re-calibrate using Class "S" weights.
If balance is still out of limits, place a "DO NOT USE" sign on it and call (DQA) for service.

Southwest Research Institute
Division 01

BALANCE VERIFICATION LOG

BALANCE #:	LOCATION:	SERIAL #:	TOLERANCE:	COMMENTS:
12	Bldg. 70 Lab 27	1122510787	±0.0005	
Date	**Std Wt (g)**	**Recorded Wt (g)**	**Operator**	KE 2/21/05.
2-21-05	2.0000	2.0001	KE	99:J-50526-15
2-22-05	2.0000	2.0000	KE	~~SN: F~~ SN: 99-J50526-15
2-23-05	2.0000	2.0000	KE	~
2-24-05	2.0000	2.0000	KE	~
2-25-05	2.0000	2.0000	KE	~
02-28-05	2.0000	2.0000	JGW	"
3-1-05	2.0000	2.0000	JGW	"
3-2-05	2.0000	2.0001	RBS	"
3-3-05	2.0000	2.0000	KE	~
3-4-05	2.0000	2.0000	KE	~

If balance is out of limits, clean the balance and re-calibrate using Class "S" weights.
If balance is still out of limits, place a "DO NOT USE" sign on it and call (DQA) for service.

SOUTHWEST RESEARCH INSTITUTE
NUCLEAR PROJECT
CLIENT: Division 20
TASK ORDER: 050222-4
SRR: 27250
SDG: 259407
CASE: CNWRA
VTSR: February 21, 2005
PROJECT#: 06002.01.232

010119

DI Water Verification

D.I. WATER SYSTEM NOTEBOOK
SOUTHWEST RESEARCH INSTITUTE
BUILDING 70

C40017

Contact U.S. Filter (1-800-466-7873) for repairs/exchanges. (Make sure to have a P.O.)

HIGH PURITY SYSTEM (HP)

010120

DATE / TIME	INITIALS	RESISTIVITY MONITOR (M OHMS)	RESISTIVITY MONITOR QC LT.	QC LIGHTS QC 1	QC LIGHTS QC 2	USAGE (GALS)	COMMENTS
2/25/05 10pm	DR	18.01	✓	✓	✓	7862.2	✓
2/28/05 5pm	DR	18.02	✓	✓	✓	7883.2	✓
3/1/05 9:50pm	DR	18.02	✓	✓	✓	7918.0	✓
3/2/05 2:45pm	DR	18.02	✓	✓	✓	7952.3	✓
3/3/05 8:30pm	DR	18.01	✓	✓	✓	7968.6	✓
3/4/05 8:39pm	DR	18.02	✓	✓	✓	7990.2	✓
3/7/05 4pm	DR	18.04	✓	X	✓	8027.0	✓ Need to offer filtered water.
3/8/05 7:20pm	DR	18.02	✓	X	✓	8058.3	waiting for P.O. #
3/9/05 7:55pm	DR	18.01	✓	X	✓	8112.2	waiting for PO#
3/10/05 8pm	DR	18.02	✓	X	✓	8142.6	U.S. Filter called
3/11/05 7pm	DR	18.07	✓	X	✓	8179.6	U.S. Filter came, had wrong tank, will be back on 3/14
3/14/05 7:01pm	DR	18.02	✓	✓	✓	8194.9	tank exchange. ALL OK
3/15/05 8:10pm	DR	18.02	✓	✓	✓	8254.3	✓
3/16/05 7pm	DR	18.03	✓	✓	✓	8289.0	✓
3/17/05 9:11pm	DR	18.01	✓	✓	✓	8312.6	✓
3/21/05 6:15pm	DR	18.02	✓	✓	✓	8342.7	✓

Legend: Check = Green (OK); X = Red (call for service)

LOW PURITY SYSTEM (LP)

DATE / TIME	INITIALS	QC LIGHTS QC 1	QC LIGHTS QC 2	USAGE (GALS)	COMMENTS
2/25/05 10pm	DR	✓	(9) ✓	30084.2	✓
2/28/05 5:01pm	DR	X	(8.5) ✓	30088.1	Light red, need to do back check to see if it is OK
3/1/05 9:51pm	DR	✓	(8) ✓	30089.2	Light green, ALL APPEARS OK
3/2/05 2:49pm	DR	✓	(8.5) ✓	30089.2	ALL OK ✓
3/3/05 8:31pm	DR	✓	(8.5) ✓	30089.9	✓
3/4/05 8:39pm	DR	✓	(8.5) ✓	30089.9	✓
3/7/05 4pm	DR	✓	(8) ✓	30093.7	✓
3/8/05 7:20pm	DR	✓	(8.5) ✓	30097.5	✓
3/9/05 7:52pm	DR	✓	(10) ✓	30115.4	✓
3/10/05 8:01pm	DR	✓	(10) ✓	30118.5	✓
3/11/05 7:01pm	DR	✓	(10) ✓	30120.1	✓
3/14/05 7:01pm	DR	✓	(9.5) ✓	30128.9	✓
3/15/05 8:11pm	DR	✓	(9.5) ✓	30129.1	✓
3/16/05 7:01pm	DR	✓	(9.8) ✓	30129.8	✓
3/17/05 9:12pm	DR	✓	(9) ✓	30130.1	✓
3/21/05 6:16pm	DR	X	(9) ✓	30130.1	✓

Legend: Check = Green (OK); X = Red (call for service)