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# ANALYTICAL REPORT

PROJECT NO. 142541

Focus/US Filter Westates 26A

Lot #: H6D040103

William Anderson

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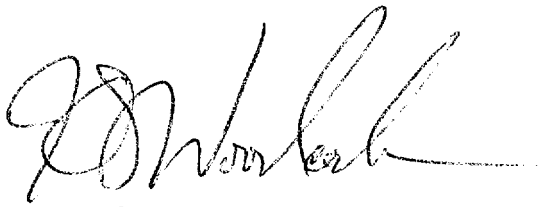
SEVERN TRENT LABORATORIES, INC.



Kevin S. Woodcock
Project Manager

April 28, 2006

# ANALYTICAL METHODS SUMMARY

**H6D040103**

| PARAMETER | ANALYTICAL METHOD |
|---|---|
| Chlorine Emissions | KNOX 0050/26A Mod |
| Hydrogen Chloride Emissions | KNOX 0050/26A Mod |

**References:**

KNOX Severn Trent Laboratories Knoxville, Facility Standard Operating Procedure.

# SAMPLE SUMMARY

**H6D040103**

| WO # | SAMPLE# | CLIENT SAMPLE ID | SAMPLED DATE | SAMP TIME |
|---|---|---|---|---|
| H2H69 | 001 | G-2978-R1-M5 0.1N H2SO4 IMPINGER SOLUTION | 03/28/06 | |
| H2H7E | 002 | G-2979-R1-M5 0.1N NAOH IMPINGER SOLUTION | 03/28/06 | |
| H2H7F | 003 | G-2982-R1-M5 0.1N H2SO4 IMPINGER SOLUTION RB | 03/28/06 | |
| H2H7G | 004 | G-2983-R1-M5 0.1N NAOH IMPINGER SOLUTION RB | 03/28/06 | |
| H2H7J | 005 | G-3065-R2-M5 0.1N H2SO4 IMPINGER SOLUTION | 03/29/06 | |
| H2H7K | 006 | G-3066-R2-M5 0.1N NAOH IMPINGER SOLUTION | 03/29/06 | |
| H2H7P | 007 | G-3149-R3-M5 0.1N H2SO4 IMPINGER SOLUTION | 03/30/06 | |
| H2H7V | 008 | G-3150-R3-M5 0.1N NAOH IMPINGER SOLUTION | 03/30/06 | |

**NOTE(S):**

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

# PROJECT NARRATIVE
## H6D040103

The results reported herein are applicable to the samples submitted for analysis only.

This report shall not be reproduced except in full, without the written approval of the laboratory.

**The original chain of custody documentation is included with this report.**

### Sample Receipt

Custody seals were not present upon sample receipt at STL Knoxville; however, samples were hand delivered.

The "Relinquished by" field on the chain of custody documentation did not contain a signature.

### Quality Control

Unless otherwise noted, all holding times and QC criteria were met and the test results shown in this report meet all applicable NELAC requirements.

Samples were analyzed for chloride by ion chromatography using SOP number KNOX-WC-005 (based on EPA methods 9056, 9057 and 26A). All sample results were reported as total µg hydrogen chloride (HCl) and total µg chlorine ($Cl_2$). Results were calculated using the following equations:

$$\text{HCl, ug} = (\text{Chloride, ug/mL}) * (\text{Sample Volume, mL}) * \left(\frac{\text{Molecular Weight HCl}}{\text{Molecular Weight Cl}}\right) * \text{Bench Dilution}$$

$$\text{Cl}_2\text{, ug} = (\text{Chloride, ug/mL}) * (\text{Sample Volume, mL}) * \text{Bench Dilution}$$

NaOH impinger samples were treated with sodium thiosulfate ($Na_2S_2O_3$) prior to the final analysis in order to convert residual hypochlorite ($OCl^-$) to chloride ion.

STL Knoxville maintains the following certifications, approvals and accreditations: Arkansas DEQ Cert. #05-043-0, California DHS ELAP Cert. #2423, Colorado DPHE, Connecticut DPH Cert. #PH-0223, Florida DOH Cert. #E87177, Georgia DNR Cert. #906 (SDWA, expires 6/24/05), Hawaii DOH, Illinois EPA Cert. #000687, Indiana DOH Cert. #C-TN-02, Iowa DNR Cert. #375, Kansas DHE Cert. #E-10349, Kentucky DEP Lab ID #90101, Louisiana DEQ Cert. #03079, Louisiana DOHH Cert. #LA030024, Maryland DHMH Cert. #277, Massachusetts DEP Cert. #M-TN009, Michigan DEQ Lab ID #9933, New Jersey DEP Cert. #TN001, New York DOH Lab #10781, North Carolina DPH Lab ID #21705, North Carolina DEHNR Cert. #64, Ohio EPA VAP Cert. #CL0059, Oklahoma DEQ ID #9415, Pennsylvania DEP Cert. #68-00576, South Carolina DHEC Lab ID #84001001, Tennessee DOH Lab ID #02014, Utah DOH Cert. # QUAN3, Virginia DGS Lab ID #00165, Washington DOE Lab #C120, West Virginia DEP Cert. #345, Wisconsin DNR Lab ID #998044300, US Army Corps of Engineers, Naval Facilities Engineering Service Center and USDA Soil Permit #S-46424. This list of approvals is subject to change and does not imply that laboratory certification is available for all parameters reported in this environmental sample data report.

# PROJECT NARRATIVE
## H6D040103

Note: A sample volume of 100 mL was used to convert the results to total µg for the method blanks, laboratory control samples, and client reagent blanks in order to standardize the analyte sample total.

For demonstration of analytical method performance on these samples, STL Knoxville analyzed matrix spikes (MS) and matrix spike duplicates (MSD). Acceptable recoveries of these spikes demonstrate that quantitation from this particular stack gas matrix is accurate and acceptable. Impinger samples containing 0.1N $H_2SO4$ and 0.1N NaOH display matrix interference effects causing poor method performance and possibly giving unreliable data unless the interference is removed. Therefore, the samples were diluted in the lab to remove the interference for a more accurate chloride response. The samples may be analyzed at increasing dilutions along with matrix spikes until matrix spikes recover from the sample within laboratory control limits. The ion chromatograph calibration range used to quantitate the sample results permits a standard ten-fold sample dilution while supporting the reporting limit with the low calibration standard.

The dilution factor reported on the sample result form does not represent the bench dilution factor. It is actually the combination of factors required by the method to convert the anion reporting limit and method detection limit from µg/mL to total µg. It may appear to be elevated because it includes the total sample volume in mL.

Samples G-2979-R1-M5 0.1N NAOH Impinger Solution and G-3150-R3-M5 0.1 N NAOH Impinger Solution were analyzed at several dilutions along with matrix spikes. The matrix spike recoveries for $Cl_2$ improved with each successive dilution, but the matrix spike recoveries for the twenty-fold dilution were still outside laboratory control limits. Analyzing the samples at a fifty-fold dilution resulted in the samples being over-diluted; therefore, the results from the twenty-fold dilution were reported. The laboratory control samples showed acceptable results indicating that the analysis was in control.

# Sample Data Summary

STL Knoxville - ACS

Client Sample ID: G-2978-R1-M5 0.1N H2SO4 IMPINGER SOLUTION

General Chemistry

Lot-Sample #...: H6D040103-001 Work Order #...: H2H69 Matrix.....: AIR
Date Sampled...: 03/28/06 Date Received..: 04/02/06

| PARAMETER | RESULT | RL | UNITS | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|
| Hydrogen chloride | 11800 | 1860 | ug | KNOX 0050/26A Mod | 04/21/06 | 6114264 |

Dilution Factor: 1856.3 MDL.....: 557

STL Knoxville - ACS

Client Sample ID: G-2979-R1-M5 0.1N NAOH IMPINGER SOLUTION

General Chemistry

Lot-Sample #...: H6D040103-002 Work Order #...: H2H7E Matrix.....: AIR
Date Sampled...: 03/28/06 Date Received..: 04/02/06

| PARAMETER | RESULT | RL | UNITS | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|
| Chlorine | 1950 | 610 | ug | KNOX 0050/26A Mod | 04/17/06 | 6116184 |

Dilution Factor: 610 MDL.....: 183

STL Knoxville - ACS

Client Sample ID: G-2982-R1-M5 0.1N H2SO4 IMPINGER SOLUTION RB

General Chemistry

**Lot-Sample #...:** H6D040103-003 **Work Order #...:** H2H7F **Matrix.....:** AIR
**Date Sampled...:** 03/28/06 **Date Received..:** 04/02/06

| PARAMETER | RESULT | RL | UNITS | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|
| Hydrogen chloride | ND | 514 | ug | KNOX 0050/26A Mod | 04/25/06 | 6115303 |

Dilution Factor: 514.2 MDL.....: 154

STL Knoxville - ACS

Client Sample ID: G-2983-R1-M5 0.1N NAOH IMPINGER SOLUTION RB

General Chemistry

**Lot-Sample #...:** H6D040103-004 **Work Order #...:** H2H7G **Matrix.....:** AIR
**Date Sampled...:** 03/28/06 **Date Received..:** 04/02/06

| PARAMETER | RESULT | RL | UNITS | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|
| Chlorine | ND | 100 | ug | KNOX 0050/26A Mod | 04/17/06 | 6116184 |

Dilution Factor: 100 MDL.....: 30.0

STL Knoxville - ACS

Client Sample ID: G-3065-R2-M5 0.1N H2SO4 IMPINGER SOLUTION

General Chemistry

Lot-Sample #...: H6D040103-005 Work Order #...: H2H7J Matrix.....: AIR
Date Sampled...: 03/29/06 Date Received..: 04/02/06

| PARAMETER | RESULT | RL | UNITS | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|
| Hydrogen chloride | 6950 | 1940 | ug | KNOX 0050/26A Mod | 04/21/06 | 6114264 |

Dilution Factor: 1938.6 MDL.....: 582

STL Knoxville - ACS

Client Sample ID: G-3066-R2-M5 0.1N NAOH IMPINGER SOLUTION

General Chemistry

Lot-Sample #...: H6D040103-006 Work Order #...: H2H7K Matrix.....: AIR
Date Sampled...: 03/29/06 Date Received..: 04/02/06

| PARAMETER | RESULT | RL | UNITS | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|
| Chlorine | 2010 | 720 | ug | KNOX 0050/26A Mod | 04/17/06 | 6116184 |

Dilution Factor: 720 MDL.....: 216

STL Knoxville - ACS

Client Sample ID: G-3149-R3-M5 0.1N H2SO4 IMPINGER SOLUTION

General Chemistry

Lot-Sample #...: H6D040103-007 Work Order #...: H2H7P Matrix.....: AIR
Date Sampled...: 03/30/06 Date Received..: 04/02/06

| PARAMETER | RESULT | RL | UNITS | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|
| Hydrogen chloride | 6490 | 1940 | ug | KNOX 0050/26A Mod | 04/21/06 | 6114264 |

Dilution Factor: 1938.6 MDL.....: 582

STL Knoxville - ACS

Client Sample ID: G-3150-R3-M5 0.1N NAOH IMPINGER SOLUTION

General Chemistry

Lot-Sample #...: H6D040103-008 Work Order #...: H2H7V Matrix.....: AIR
Date Sampled...: 03/30/06 Date Received..: 04/02/06

| PARAMETER | RESULT | RL | UNITS | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|
| Chlorine | 1940 | 610 | ug | KNOX 0050/26A Mod | 04/25/06 | 6116088 |
| | Dilution Factor: 610 | | | MDL.....: 183 | | |

## METHOD BLANK REPORT

### General Chemistry

**Client Lot #...:** H6D040103 **Matrix.....:** AIR

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|
| Chlorine | | Work Order #: H33P51AA | | MB Lot-Sample #: H6D260000-184 | | |
| | ND | 10.0 | ug | KNOX 0050/26A Mod | 04/17/06 | 6116184 |
| | | Dilution Factor: 10 | | | | |
| Chlorine | | Work Order #: H33H91AA | | MB Lot-Sample #: H6D260000-088 | | |
| | ND | 10.0 | ug | KNOX 0050/26A Mod | 04/25/06 | 6116088 |
| | | Dilution Factor: 10 | | | | |
| Hydrogen chloride | | Work Order #: H3XTL1AA | | MB Lot-Sample #: H6D240000-264 | | |
| | ND | 10.3 | ug | KNOX 0050/26A Mod | 04/21/06 | 6114264 |
| | | Dilution Factor: 10.3 | | | | |
| Hydrogen chloride | | Work Order #: H31Q81AA | | MB Lot-Sample #: H6D250000-303 | | |
| | ND | 10.3 | ug | KNOX 0050/26A Mod | 04/25/06 | 6115303 |
| | | Dilution Factor: 10.3 | | | | |

**NOTE(S):**

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

## LABORATORY CONTROL SAMPLE EVALUATION REPORT

### General Chemistry

**Lot-Sample #...:** H6D040103 **Matrix.....:** AIR

| PARAMETER | PERCENT RECOVERY | RECOVERY LIMITS | RPD | RPD LIMITS | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|---|
| Chlorine | | WO#:H33H91AC-LCS/H33H91AD-LCSD LCS Lot-Sample#: H6D260000-088 | | | | | |
| | 102 | (90 - 110) | | | KNOX 0050/26A Mod | 04/25/06 | 6116088 |
| | 101 | (90 - 110) | 1.2 | (0-20) | KNOX 0050/26A Mod | 04/25/06 | 6116088 |
| | | Dilution Factor: 1 | | | | | |
| Chlorine | | WO#:H33P51AC-LCS/H33P51AD-LCSD LCS Lot-Sample#: H6D260000-184 | | | | | |
| | 100 | (90 - 110) | | | KNOX 0050/26A Mod | 04/17/06 | 6116184 |
| | 101 | (90 - 110) | 0.59 | (0-20) | KNOX 0050/26A Mod | 04/17/06 | 6116184 |
| | | Dilution Factor: 1 | | | | | |
| Hydrogen chloride | | WO#:H3XTL1AC-LCS/H3XTL1AD-LCSD LCS Lot-Sample#: H6D240000-264 | | | | | |
| | 99 | (90 - 110) | | | KNOX 0050/26A Mod | 04/21/06 | 6114264 |
| | 101 | (90 - 110) | 2.3 | (0-20) | KNOX 0050/26A Mod | 04/21/06 | 6114264 |
| | | Dilution Factor: 1 | | | | | |
| Hydrogen chloride | | WO#:H31Q81AC-LCS/H31Q81AD-LCSD LCS Lot-Sample#: H6D250000-303 | | | | | |
| | 102 | (90 - 110) | | | KNOX 0050/26A Mod | 04/25/06 | 6115303 |
| | 101 | (90 - 110) | 1.3 | (0-20) | KNOX 0050/26A Mod | 04/25/06 | 6115303 |
| | | Dilution Factor: 1 | | | | | |

**NOTE(S):**

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

## LABORATORY CONTROL SAMPLE DATA REPORT

### General Chemistry

**Lot-Sample #...:** H6D040103 **Matrix.....:** AIR

| PARAMETER | SPIKE AMOUNT | MEASURED AMOUNT | UNITS | PERCNT RECVRY | RPD | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|---|---|
| Chlorine | | WO#:H33H91AC-LCS/H33H91AD-LCSD LCS Lot-Sample#: H6D260000-088 | | | | | | |
| | 50.0 | 50.9 | ug | 102 | | KNOX 0050/26A Mod | 04/25/06 | 6116088 |
| | 50.0 | 50.3 | ug | 101 | 1.2 | KNOX 0050/26A Mod | 04/25/06 | 6116088 |
| | | Dilution Factor: 1 | | | | | | |
| Chlorine | | WO#:H33P51AC-LCS/H33P51AD-LCSD LCS Lot-Sample#: H6D260000-184 | | | | | | |
| | 50.0 | 50.2 | ug | 100 | | KNOX 0050/26A Mod | 04/17/06 | 6116184 |
| | 50.0 | 50.5 | ug | 101 | 0.59 | KNOX 0050/26A Mod | 04/17/06 | 6116184 |
| | | Dilution Factor: 1 | | | | | | |
| Hydrogen chloride | | WO#:H3XTL1AC-LCS/H3XTL1AD-LCSD LCS Lot-Sample#: H6D240000-264 | | | | | | |
| | 51.4 | 50.7 | ug | 99 | | KNOX 0050/26A Mod | 04/21/06 | 6114264 |
| | 51.4 | 51.9 | ug | 101 | 2.3 | KNOX 0050/26A Mod | 04/21/06 | 6114264 |
| | | Dilution Factor: 1 | | | | | | |
| Hydrogen chloride | | WO#:H31Q81AC-LCS/H31Q81AD-LCSD LCS Lot-Sample#: H6D250000-303 | | | | | | |
| | 51.4 | 52.4 | ug | 102 | | KNOX 0050/26A Mod | 04/25/06 | 6115303 |
| | 51.4 | 51.7 | ug | 101 | 1.3 | KNOX 0050/26A Mod | 04/25/06 | 6115303 |
| | | Dilution Factor: 1 | | | | | | |

**NOTE(S):**

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

# MATRIX SPIKE SAMPLE EVALUATION REPORT

## General Chemistry

**Client Lot #...:** H6D040103 **Matrix.....:** AIR
**Date Sampled...:** 03/30/06 **Date Received..:** 04/02/06

| PARAMETER | PERCENT RECOVERY | RECOVERY LIMITS | RPD | RPD LIMITS | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|---|
| Chlorine | | WO#: H2H7E1AC-MS/H2H7E1AD-MSD MS Lot-Sample #: H6D040103-002 | | | | | |
| | 145 N | (75 - 125) | | | KNOX 0050/26A Mod | 04/17/06 | 6116184 |
| | 136 N | (75 - 125) | 3.0 | (0-20) | KNOX 0050/26A Mod | 04/17/06 | 6116184 |
| | | Dilution Factor: 1 | | | | | |
| Chlorine | | WO#: H2H7V1AD-MS/H2H7V1AE-MSD MS Lot-Sample #: H6D040103-008 | | | | | |
| | 141 N | (75 - 125) | | | KNOX 0050/26A Mod | 04/25/06 | 6116088 |
| | 139 N | (75 - 125) | 0.54 | (0-20) | KNOX 0050/26A Mod | 04/25/06 | 6116088 |
| | | Dilution Factor: 1 | | | | | |
| Hydrogen chloride | | WO#: H2H691AC-MS/H2H691AD-MSD MS Lot-Sample #: H6D040103-001 | | | | | |
| | 105 | (75 - 125) | | | KNOX 0050/26A Mod | 04/21/06 | 6114264 |
| | 97 | (75 - 125) | 1.9 | (0-20) | KNOX 0050/26A Mod | 04/21/06 | 6114264 |
| | | Dilution Factor: 1 | | | | | |

**NOTE(S):**

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

N Spiked analyte recovery is outside stated control limits.

# MATRIX SPIKE SAMPLE DATA REPORT

## General Chemistry

**Client Lot #...:** H6D040103 **Matrix.....:** AIR
**Date Sampled...:** 03/30/06 **Date Received..:** 04/02/06

| PARAMETER | SAMPLE AMOUNT | SPIKE AMT | MEASRD AMOUNT | UNITS | PERCNT RECVRY | RPD | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|---|---|---|
| Chlorine | | | WO#: H2H7E1AC-MS/H2H7E1AD-MSD | | | | MS Lot-Sample #: H6D040103-002 | | |
| | 1950 | 1220 | 3720 N | ug | 145 | | KNOX 0050/26A | 04/17/06 | 6116184 |
| | 1950 | 1220 | 3610 N | ug | 136 | 3.0 | KNOX 0050/26A | 04/17/06 | 6116184 |
| | | | Dilution Factor: 1 | | | | | | |
| Chlorine | | | WO#: H2H7V1AD-MS/H2H7V1AE-MSD | | | | MS Lot-Sample #: H6D040103-008 | | |
| | 1940 | 1220 | 3660 N | ug | 141 | | KNOX 0050/26A | 04/25/06 | 6116088 |
| | 1940 | 1220 | 3640 N | ug | 139 | 0.54 | KNOX 0050/26A | 04/25/06 | 6116088 |
| | | | Dilution Factor: 1 | | | | | | |
| Hydrogen chloride | | | WO#: H2H691AC-MS/H2H691AD-MSD | | | | MS Lot-Sample #: H6D040103-001 | | |
| | 11800 | 3710 | 15700 | ug | 105 | | KNOX 0050/26A | 04/21/06 | 6114264 |
| | 11800 | 3710 | 15400 | ug | 97 | 1.9 | KNOX 0050/26A | 04/21/06 | 6114264 |
| | | | Dilution Factor: 1 | | | | | | |

**NOTE(S):**

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

N Spiked analyte recovery is outside stated control limits.

## SAMPLE DUPLICATE EVALUATION REPORT

### General Chemistry

**Client Lot #...:** H6D040103 **Work Order #...:** H2H69-SMP H2H69-DUP **Matrix.....:** AIR

**Date Sampled...:** 03/28/06 **Date Received..:** 04/02/06

| PARAM | RESULT | DUPLICATE RESULT | UNITS | RPD | RPD LIMIT | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|---|---|
| Hydrogen chloride | | | | | | SD Lot-Sample #: H6D040103-001 | | |
| | 11800 | 11900 | ug | 0.84 | (0-20) | KNOX 0050/26A Mod | 04/21/06 | 6114264 |

Dilution Factor: 1856.3

## SAMPLE DUPLICATE EVALUATION REPORT

### General Chemistry

**Client Lot #...:** H6D040103 **Work Order #...:** H2H7E-SMP H2H7E-DUP **Matrix.....:** AIR

**Date Sampled...:** 03/28/06 **Date Received..:** 04/02/06

| PARAM | RESULT | DUPLICATE RESULT | UNITS | RPD | RPD LIMIT | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|---|---|
| Chlorine | | | | | | SD Lot-Sample #: H6D040103-002 | | |
| | 1950 | 2010 | ug | 3.0 | (0-20) | KNOX 0050/26A Mod | 04/17/06 | 6116184 |

Dilution Factor: 610

## SAMPLE DUPLICATE EVALUATION REPORT

### General Chemistry

**Client Lot #...:** H6D040103 **Work Order #...:** H2H7F-SMP H2H7F-DUP **Matrix.....:** AIR

**Date Sampled...:** 03/28/06 **Date Received..:** 04/02/06

| PARAM | RESULT | DUPLICATE RESULT | UNITS | RPD | RPD LIMIT | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|---|---|
| Hydrogen chloride | | | | | | SD Lot-Sample #: H6D040103-003 | | |
| | ND | ND | ug | 0 | (0-20) | KNOX 0050/26A Mod | 04/25/06 | 6115303 |

Dilution Factor: 514.2

## SAMPLE DUPLICATE EVALUATION REPORT

### General Chemistry

**Client Lot #...:** H6D040103 **Work Order #...:** H2H7G-SMP H2H7G-DUP **Matrix.....:** AIR

**Date Sampled...:** 03/28/06 **Date Received..:** 04/02/06

| PARAM | RESULT | DUPLICATE RESULT | UNITS | RPD | RPD LIMIT | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|---|---|
| Chlorine | | | | | | SD Lot-Sample #: H6D040103-004 | | |
| | ND | ND | ug | 0 | (0-20) | KNOX 0050/26A Mod | 04/17/06 | 6116184 |

Dilution Factor: 100

## SAMPLE DUPLICATE EVALUATION REPORT

### General Chemistry

**Client Lot #...:** H6D040103 **Work Order #...:** H2H7J-SMP H2H7J-DUP **Matrix.....:** AIR

**Date Sampled...:** 03/29/06 **Date Received..:** 04/02/06

| PARAM | RESULT | DUPLICATE RESULT | UNITS | RPD | RPD LIMIT | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|---|---|
| Hydrogen chloride | | | | | | SD Lot-Sample #: H6D040103-005 | | |
| | 6950 | 6910 | ug | 0.58 | (0-20) | KNOX 0050/26A Mod | 04/21/06 | 6114264 |

Dilution Factor: 1938.6

## SAMPLE DUPLICATE EVALUATION REPORT

### General Chemistry

**Client Lot #...:** H6D040103 **Work Order #...:** H2H7K-SMP H2H7K-DUP **Matrix.....:** AIR

**Date Sampled...:** 03/29/06 **Date Received..:** 04/02/06

| PARAM | RESULT | DUPLICATE RESULT | UNITS | RPD | RPD LIMIT | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|---|---|
| Chlorine | | | | | | SD Lot-Sample #: H6D040103-006 | | |
| | 2010 | 2120 | ug | 5.3 | (0-20) | KNOX 0050/26A Mod | 04/17/06 | 6116184 |

Dilution Factor: 720

## SAMPLE DUPLICATE EVALUATION REPORT

### General Chemistry

**Client Lot #...:** H6D040103 **Work Order #...:** H2H7P-SMP H2H7P-DUP **Matrix.....:** AIR

**Date Sampled...:** 03/30/06 **Date Received..:** 04/02/06

| PARAM | RESULT | DUPLICATE RESULT | UNITS | RPD | RPD LIMIT | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|---|---|
| Hydrogen chloride | | | | | | SD Lot-Sample #: H6D040103-007 | | |
| | 6490 | 6190 | ug | 4.7 | (0-20) | KNOX 0050/26A Mod | 04/21/06 | 6114264 |

Dilution Factor: 1938.6

## SAMPLE DUPLICATE EVALUATION REPORT

### General Chemistry

**Client Lot #...:** H6D040103 **Work Order #...:** H2H7V-SMP H2H7V-DUP **Matrix.....:** AIR

**Date Sampled...:** 03/30/06 **Date Received..:** 04/02/06

| PARAM | RESULT | DUPLICATE RESULT | UNITS | RPD | RPD LIMIT | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|---|---|
| Chlorine | | | | | | SD Lot-Sample #: H6D040103-008 | | |
| | 1940 | 1920 | ug | 1.0 | (0-20) | KNOX 0050/26A Mod | 04/25/06 | 6116088 |

Dilution Factor: 610

# Sample Receipt Documentation

# Request for Analysis/Chain-of-Custody – RFA/COC #023 [Method 0050/26A Train]
# Focus/US Filter Westates Carbon
# Comprehensive Performance Test at Parker, Arizona

**STL Knoxville Lot Number:** HbD040103
**STL Knoxville Project Number: 142541**

***NOTE: After Log-In, please give the original completed RFA/COC to Patti Carswell.***

| **Project Identification:** | **Westates Carbon CPT** |
|---|---|
| STL Knoxville Project Number: | 142541 |
| STL Contact: | Ms. Patti Carswell (865) 291-3010 |
| STL - ACS Project Manager: | Dr. William C. Anderson (865) 291-3080 |

| **Laboratory Deliverable Turnaround Requirements:** | |
|---|---|
| Analytical Due Date: (Review-Released Data) | 14 Days from Lab Receipt |
| Data Package Due Date: | 14 Days from Lab Receipt |
| **Laboratory Destination:** | STL Knoxville 5815 Middlebrook Pike Knoxville, Tennessee 37921 (865) 291-3000 |
| **Courier:** | Federal Express |

**Analytical Testing QC Requirements:**
The Legend for Project-Specific Quality Control Testing is designated in the "QC" column as follows:
"MS" = Matrix Spike, "MSD" = Matrix Spike Duplicate,
"DUP" = Duplicate, and "PDS" = Post Digestion Spike

**Project Deliverables:**
Report analytical results on R-02 Reports and in data packages.
Include "Field Number", "Sample Type", and "Run Number" on all R-02 Reports.

| **Holding Time Requirements:** | |
|---|---|
| Anions (Chloride/Chlorine) | 30 Days to Analysis. |

| Field Sample No./ Sample Coding ID | Sample Collection Date | Project QC Require-ments | Sample Bottle/ Container | Sample Type/Analysis | Analytical Specifications |
|---|---|---|---|---|---|
| G-2978-R1-M5 0.1N $H_2SO_4$ Impinger Solution | 3-28-06 | DUP/ MS/MSD | 2+Liter Amber Boston Round TW 3-30-06 | **0.1N $H_2SO_4$ Impinger Solution, Run #1** Method 0050/26A Train Chloride Analysis | Analyze for HCl by ion chromatography (Method SW-9056/9057). |
| G-2979-R1-M5 0.1N NaOH Impinger Solution | 3-28-06 | DUP/ MS/MSD | 500 mL High Density Polyethylene Bottle | **0.1N NaOH Impinger Solution, Run #1** Method 0050/26A Train Chlorine Analysis | Analyze for $Cl_2$ by ion chromatography (Method SW-9056/9057). |
| G-2982-R1-M5 0.1N $H_2SO_4$ Impinger Solution RB | 3-28-06 | Reagent Blank | 250 mL Amber Boston Round | **0.1N $H_2SO_4$ Impinger Solution Reagent Blank Run #1** Method 0050/26A Train Chloride Analysis | Analyze for HCl by ion chromatography (Method SW-9056/9057). |
| G-2983-R1-M5 0.1N NaOH Impinger Solution RB | 3-28-06 | Reagent Blank | 250 mL High Density Poly-ethylene Bottle | **0.1N NaOH Impinger Solution Reagent Blank Run #1** M5 HCl/$Cl_2$ Train Chlorine Analysis | Analyze for $Cl_2$ by ion chromatography (Method SW-9056/9057). |
| G-3065-R2-M5 0.1N $H_2SO_4$ Impinger Solution | 3-29-06 | DUP | 3500 mL High Density Polyethylene Bottle | **0.1N $H_2SO_4$ Impinger Solution, Run #2** Method 0050/26A Train Chloride Analysis | Analyze for HCl by ion chromatography (Method SW-9056/9057). |

# Request for Analysis/Chain-of-Custody – RFA/COC #023 [Method 0050/26A Train]
# Focus/US Filter Westates Carbon
# Comprehensive Performance Test at Parker, Arizona

| Field Sample No./ Sample Coding ID | Sample Collection Date | Project QC Requirements | Sample Bottle/ Container | Sample Type/Analysis | Analytical Specifications |
|---|---|---|---|---|---|
| G-3066-R2-M5 0.1N NaOH Impinger Solution | 3-29-06 | DUP | 500 mL High Density Polyethylene Bottle | **0.1N NaOH Impinger Solution, Run #2**<br><br>Method 0050/26A Train<br><br>Chlorine Analysis | Analyze for $Cl_2$ by ion chromatography (Method SW-9056/9057). |
| G-3149-R3-M5 0.1N $H_2SO_4$ Impinger Solution | 3-30-06 | DUP | 3 500 mL High Density Polyethylene Bottle | **0.1N $H_2SO_4$ Impinger Solution, Run #3**<br><br>Method 0050/26A Train<br><br>Chloride Analysis | Analyze for HCl by ion chromatography (Method SW-9056/9057). |
| G-3150-R3-M5 0.1N NaOH Impinger Solution | 3-30-06 | DUP | 500 mL High Density Polyethylene Bottle | **0.1N NaOH Impinger Solution, Run #3**<br><br>Method 0050/26A Train<br><br>Chlorine Analysis | Analyze for $Cl_2$ by ion chromatography (Method SW-9056/9057). |

# Request for Analysis/Chain-of-Custody – RFA/COC #023 [Method 0050/26A Train]
# Focus/US Filter Westates Carbon
# Comprehensive Performance Test at Parker, Arizona

H1605H0103

## Sample Receipt Log and Condition of the Samples Upon Receipt:

| Please fill in the following information: | Comments (Please write "NONE" if no comment applicable) |
|---|---|
| (1) Record the identities of any samples that were listed on the RFA but were not found in the sample shipment. | N/A |
| (2) Record the sample shipping cooler temperature of all coolers transporting samples listed on this RFA: | 5.0°C |
| (3) Record any apparent sample loss/breakage. | N/A |
| (4) Record any unidentified samples transported with this shipment of samples: | N/A |
| (5) Indicate if all samples were received according to the project's required specifications (i.e. no nonconformances): | N/A |

## Custody Transfer:

Hand delivered

| | Name | Company | Date/Time |
|---|---|---|---|
| Relinquished By: | | | |
| Accepted By: | [signature] | STL-Knoxville | 4/2/06 1625 |
| Relinquished By: | | | |
| Accepted By: | | | |
| Relinquished By: | | | |
| Accepted By: | | | |
| Relinquished By: | | | |
| Accepted By: | | | |

# STL KNOXVILLE SAMPLE RECEIPT/CONDITION UPON RECEIPT ANOMALY CHECKLIST

**Client:** Focus **Project:** Westates Carbon **Lot Number:** H10040103

| Review Items | Yes | No | NA | If No, what was the problem? | Comments/Actions Taken |
|---|---|---|---|---|---|
| 1. Do sample container labels match COC? (IDs, Dates, Times) | ✓ | | | ☐ **1a** Do not match COC<br>☐ **1b** Incomplete information<br>☐ **1c** Marking smeared<br>☐ **1d** Label torn<br>☐ **1e** No label<br>☐ **1f** COC not received<br>☐ **1g** Other: | ~~5b - Sample 6i3149-R3 MS has 3 listed on COC, only received 2.~~ M.E. 4/3/06<br>MA - COC - was not relinquished (signed, date, or time) |
| 2. Is the cooler temperature within limits? (> freezing temp. of water to 6 °C; NC, 1668, 1613B: 0-4°C; VOST: 10°C; MA: 2-6 °C) | ✓ | | | ☐ **2a** Temp Blank = _____<br>☐ **2b** Cooler Temp = _____ | |
| 3. Were samples received with correct chemical preservative (excluding Encore)? | | | ✓ | ☐ **3a** Sample preservative = | |
| 4. Were custody seals present/intact on cooler and/or containers? | | ✓ | | ☑ **4a** Not present<br>☐ **4b** Not intact<br>☐ **4c** Other: | |
| 5. Were all of the samples listed on the COC received? | ✓ | ~~X~~ ~~4/3/06~~ | | ☐ **5a** Samples received-not on COC<br>☐ **5b** Samples not received on COC | |
| 6. Were all of the sample containers received intact? | ✓ | | | ☐ **6a** Leaking<br>☐ **6b** Broken | |
| 7. Were VOA samples received without headspace? | | | ✓ | ☐ **7a** Headspace (VOA only) | |
| 8. Were samples received in appropriate containers? | ✓ | | | ☐ **8a** Improper container | |
| 9. Did you check for residual chlorine, if necessary? | | | ✓ | ☐ **9a** Could not be determined due to matrix interference | |
| 10. Were samples received within holding time? | ✓ | | | ☐ **10a** Holding time expired | |
| 11. For rad samples, was sample activity info. provided? | | | ✓ | ☐ Incomplete information | |
| 12. For SOG water samples (1613B, 1668A, 8290, LR PAHs), do samples have visible solids present? | | | ✓ | If yes & appears to be >1%, was SOG notified? _____ | |
| 13. Are the shipping containers intact? | ✓ | | | ☐ **13a** Leaking<br>☐ **13b** Other: | |
| 14. Was COC relinquished? (Signed/Dated/Timed) | | ✓ | | ☐ **14a** Not relinquished | |
| 15. Are tests/parameters listed for each sample? | ✓ | | | ☐ **15a** Incomplete information | |
| 16. Is the matrix of the samples noted? | ✓ | | | ☐ **15a** Incomplete information | |
| 17. Is the date/time of sample collection noted? | ✓ | | | ☐ **15a** Incomplete information | |
| 18. Is the client and project name/# identified? | ✓ | | | ☐ **15a** Incomplete information | |
| 19. Was the sampler identified on the COC? | | | ✓ | | |

Quote #: _____ PM Instructions: _____

Sample Receiving Associate: _____ Date: 4/3/06

QA026R18.doc, 1/30/06

# Wet Chemistry

# Sample Summary

STL Knoxville - ACS

Client Sample ID: G-2978-R1-M5 0.1N H2SO4 IMPINGER SOLUTION

General Chemistry

Lot-Sample #...: H6D040103-001 Work Order #...: H2H69 Matrix.....: AIR
Date Sampled...: 03/28/06 Date Received..: 04/02/06

| PARAMETER | RESULT | RL | UNITS | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|
| Hydrogen chloride | 11800 | 1860 | ug | KNOX 0050/26A Mod | 04/21/06 | 6114264 |

Dilution Factor: 1856.3 MDL.....: 557

STL Knoxville - ACS

Client Sample ID: G-2979-R1-M5 0.1N NAOH IMPINGER SOLUTION

General Chemistry

Lot-Sample #...: H6D040103-002 Work Order #...: H2H7E Matrix.....: AIR
Date Sampled...: 03/28/06 Date Received..: 04/02/06

| PARAMETER | RESULT | RL | UNITS | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|
| Chlorine | 1950 | 610 | ug | KNOX 0050/26A Mod | 04/17/06 | 6116184 |

Dilution Factor: 610 MDL.....: 183

STL Knoxville - ACS

Client Sample ID: G-2982-R1-M5 0.1N H2SO4 IMPINGER SOLUTION RB

General Chemistry

**Lot-Sample #...:** H6D040103-003 **Work Order #...:** H2H7F **Matrix.....:** AIR
**Date Sampled...:** 03/28/06 **Date Received..:** 04/02/06

| PARAMETER | RESULT | RL | UNITS | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|
| Hydrogen chloride | ND | 514 | ug | KNOX 0050/26A Mod | 04/25/06 | 6115303 |

Dilution Factor: 514.2 MDL.....: 154

STL Knoxville - ACS

Client Sample ID: G-2983-R1-M5 0.1N NAOH IMPINGER SOLUTION RB

General Chemistry

**Lot-Sample #...:** H6D040103-004 **Work Order #...:** H2H7G **Matrix.....:** AIR
**Date Sampled...:** 03/28/06 **Date Received..:** 04/02/06

| PARAMETER | RESULT | RL | UNITS | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|
| Chlorine | ND | 100 | ug | KNOX 0050/26A Mod | 04/17/06 | 6116184 |

Dilution Factor: 100 MDL.....: 30.0

STL Knoxville - ACS

Client Sample ID: G-3065-R2-M5 0.1N H2SO4 IMPINGER SOLUTION

General Chemistry

Lot-Sample #...: H6D040103-005 Work Order #...: H2H7J Matrix.....: AIR
Date Sampled...: 03/29/06 Date Received..: 04/02/06

| PARAMETER | RESULT | RL | UNITS | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|
| Hydrogen chloride | 6950 | 1940 | ug | KNOX 0050/26A Mod | 04/21/06 | 6114264 |

Dilution Factor: 1938.6 MDL.....: 582

STL Knoxville - ACS

Client Sample ID: G-3066-R2-M5 0.1N NAOH IMPINGER SOLUTION

General Chemistry

Lot-Sample #...: H6D040103-006 Work Order #...: H2H7K Matrix.....: AIR
Date Sampled...: 03/29/06 Date Received..: 04/02/06

| PARAMETER | RESULT | RL | UNITS | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|
| Chlorine | 2010 | 720 | ug | KNOX 0050/26A Mod | 04/17/06 | 6116184 |

Dilution Factor: 720 MDL.....: 216

STL Knoxville - ACS

Client Sample ID: G-3149-R3-M5 0.1N H2SO4 IMPINGER SOLUTION

General Chemistry

Lot-Sample #...: H6D040103-007 Work Order #...: H2H7P Matrix.....: AIR
Date Sampled...: 03/30/06 Date Received..: 04/02/06

| PARAMETER | RESULT | RL | UNITS | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|
| Hydrogen chloride | 6490 | 1940 | ug | KNOX 0050/26A Mod | 04/21/06 | 6114264 |

Dilution Factor: 1938.6 MDL.....: 582

STL Knoxville - ACS

Client Sample ID: G-3150-R3-M5 0.1N NAOH IMPINGER SOLUTION

General Chemistry

Lot-Sample #...: H6D040103-008 Work Order #...: H2H7V Matrix.....: AIR
Date Sampled...: 03/30/06 Date Received..: 04/02/06

| PARAMETER | RESULT | RL | UNITS | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|
| Chlorine | 1940 | 610 | ug | KNOX 0050/26A Mod | 04/25/06 | 6116088 |

Dilution Factor: 610 MDL.....: 183

# QC Summary

## METHOD BLANK REPORT

### General Chemistry

**Client Lot #...:** H6D040103 **Matrix.....:** AIR

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|
| Chlorine | | Work Order #: H33P51AA | | MB Lot-Sample #: H6D260000-184 | | |
| | ND | 10.0 | ug | KNOX 0050/26A Mod | 04/17/06 | 6116184 |
| | | Dilution Factor: 10 | | | | |
| Chlorine | | Work Order #: H33H91AA | | MB Lot-Sample #: H6D260000-088 | | |
| | ND | 10.0 | ug | KNOX 0050/26A Mod | 04/25/06 | 6116088 |
| | | Dilution Factor: 10 | | | | |
| Hydrogen chloride | | Work Order #: H3XTL1AA | | MB Lot-Sample #: H6D240000-264 | | |
| | ND | 10.3 | ug | KNOX 0050/26A Mod | 04/21/06 | 6114264 |
| | | Dilution Factor: 10.3 | | | | |
| Hydrogen chloride | | Work Order #: H31Q81AA | | MB Lot-Sample #: H6D250000-303 | | |
| | ND | 10.3 | ug | KNOX 0050/26A Mod | 04/25/06 | 6115303 |
| | | Dilution Factor: 10.3 | | | | |

**NOTE(S):**

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

## LABORATORY CONTROL SAMPLE EVALUATION REPORT

### General Chemistry

**Lot-Sample #...:** H6D040103 **Matrix.....:** AIR

| PARAMETER | PERCENT RECOVERY | RECOVERY LIMITS | RPD | RPD LIMITS | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|---|
| Chlorine | | WO#:H33H91AC-LCS/H33H91AD-LCSD LCS Lot-Sample#: H6D260000-088 | | | | | |
| | 102 | (90 - 110) | | | KNOX 0050/26A Mod | 04/25/06 | 6116088 |
| | 101 | (90 - 110) | 1.2 | (0-20) | KNOX 0050/26A Mod | 04/25/06 | 6116088 |
| | | Dilution Factor: 1 | | | | | |
| Chlorine | | WO#:H33P51AC-LCS/H33P51AD-LCSD LCS Lot-Sample#: H6D260000-184 | | | | | |
| | 100 | (90 - 110) | | | KNOX 0050/26A Mod | 04/17/06 | 6116184 |
| | 101 | (90 - 110) | 0.59 | (0-20) | KNOX 0050/26A Mod | 04/17/06 | 6116184 |
| | | Dilution Factor: 1 | | | | | |
| Hydrogen chloride | | WO#:H3XTL1AC-LCS/H3XTL1AD-LCSD LCS Lot-Sample#: H6D240000-264 | | | | | |
| | 99 | (90 - 110) | | | KNOX 0050/26A Mod | 04/21/06 | 6114264 |
| | 101 | (90 - 110) | 2.3 | (0-20) | KNOX 0050/26A Mod | 04/21/06 | 6114264 |
| | | Dilution Factor: 1 | | | | | |
| Hydrogen chloride | | WO#:H31Q81AC-LCS/H31Q81AD-LCSD LCS Lot-Sample#: H6D250000-303 | | | | | |
| | 102 | (90 - 110) | | | KNOX 0050/26A Mod | 04/25/06 | 6115303 |
| | 101 | (90 - 110) | 1.3 | (0-20) | KNOX 0050/26A Mod | 04/25/06 | 6115303 |
| | | Dilution Factor: 1 | | | | | |

**NOTE(S):**

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

## LABORATORY CONTROL SAMPLE DATA REPORT

### General Chemistry

**Lot-Sample #...:** H6D040103 **Matrix.....:** AIR

| PARAMETER | SPIKE AMOUNT | MEASURED AMOUNT | UNITS | PERCNT RECVRY | RPD | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|---|---|
| Chlorine | | WO#:H33H91AC-LCS/H33H91AD-LCSD | | | | LCS Lot-Sample#: H6D260000-088 | | |
| | 50.0 | 50.9 | ug | 102 | | KNOX 0050/26A Mod | 04/25/06 | 6116088 |
| | 50.0 | 50.3 | ug | 101 | 1.2 | KNOX 0050/26A Mod | 04/25/06 | 6116088 |
| | | Dilution Factor: 1 | | | | | | |
| Chlorine | | WO#:H33P51AC-LCS/H33P51AD-LCSD | | | | LCS Lot-Sample#: H6D260000-184 | | |
| | 50.0 | 50.2 | ug | 100 | | KNOX 0050/26A Mod | 04/17/06 | 6116184 |
| | 50.0 | 50.5 | ug | 101 | 0.59 | KNOX 0050/26A Mod | 04/17/06 | 6116184 |
| | | Dilution Factor: 1 | | | | | | |
| Hydrogen chloride | | WO#:H3XTL1AC-LCS/H3XTL1AD-LCSD | | | | LCS Lot-Sample#: H6D240000-264 | | |
| | 51.4 | 50.7 | ug | 99 | | KNOX 0050/26A Mod | 04/21/06 | 6114264 |
| | 51.4 | 51.9 | ug | 101 | 2.3 | KNOX 0050/26A Mod | 04/21/06 | 6114264 |
| | | Dilution Factor: 1 | | | | | | |
| Hydrogen chloride | | WO#:H31Q81AC-LCS/H31Q81AD-LCSD | | | | LCS Lot-Sample#: H6D250000-303 | | |
| | 51.4 | 52.4 | ug | 102 | | KNOX 0050/26A Mod | 04/25/06 | 6115303 |
| | 51.4 | 51.7 | ug | 101 | 1.3 | KNOX 0050/26A Mod | 04/25/06 | 6115303 |
| | | Dilution Factor: 1 | | | | | | |

**NOTE(S):**

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

# MATRIX SPIKE SAMPLE EVALUATION REPORT

## General Chemistry

**Client Lot #...:** H6D040103 **Matrix.....:** AIR
**Date Sampled...:** 03/30/06 **Date Received..:** 04/02/06

| PARAMETER | PERCENT RECOVERY | RECOVERY LIMITS | RPD | RPD LIMITS | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|---|
| Chlorine | | WO#: H2H7E1AC-MS/H2H7E1AD-MSD MS Lot-Sample #: H6D040103-002 | | | | | |
| | 145 N | (75 - 125) | | | KNOX 0050/26A Mod | 04/17/06 | 6116184 |
| | 136 N | (75 - 125) | 3.0 | (0-20) | KNOX 0050/26A Mod | 04/17/06 | 6116184 |
| | | Dilution Factor: 1 | | | | | |
| Chlorine | | WO#: H2H7V1AD-MS/H2H7V1AE-MSD MS Lot-Sample #: H6D040103-008 | | | | | |
| | 141 N | (75 - 125) | | | KNOX 0050/26A Mod | 04/25/06 | 6116088 |
| | 139 N | (75 - 125) | 0.54 | (0-20) | KNOX 0050/26A Mod | 04/25/06 | 6116088 |
| | | Dilution Factor: 1 | | | | | |
| Hydrogen chloride | | WO#: H2H691AC-MS/H2H691AD-MSD MS Lot-Sample #: H6D040103-001 | | | | | |
| | 105 | (75 - 125) | | | KNOX 0050/26A Mod | 04/21/06 | 6114264 |
| | 97 | (75 - 125) | 1.9 | (0-20) | KNOX 0050/26A Mod | 04/21/06 | 6114264 |
| | | Dilution Factor: 1 | | | | | |

**NOTE(S):**

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

N Spiked analyte recovery is outside stated control limits.

## MATRIX SPIKE SAMPLE DATA REPORT

### General Chemistry

**Client Lot #...:** H6D040103 **Matrix.....:** AIR
**Date Sampled...:** 03/30/06 **Date Received..:** 04/02/06

| PARAMETER | SAMPLE AMOUNT | SPIKE AMT | MEASRD AMOUNT | UNITS | PERCNT RECVRY | RPD | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|---|---|---|
| Chlorine | | | WO#: H2H7E1AC-MS/H2H7E1AD-MSD | | | | MS Lot-Sample #: H6D040103-002 | | |
| | 1950 | 1220 | 3720 N | ug | 145 | | KNOX 0050/26A | 04/17/06 | 6116184 |
| | 1950 | 1220 | 3610 N | ug | 136 | 3.0 | KNOX 0050/26A | 04/17/06 | 6116184 |
| | | | Dilution Factor: 1 | | | | | | |
| Chlorine | | | WO#: H2H7V1AD-MS/H2H7V1AE-MSD | | | | MS Lot-Sample #: H6D040103-008 | | |
| | 1940 | 1220 | 3660 N | ug | 141 | | KNOX 0050/26A | 04/25/06 | 6116088 |
| | 1940 | 1220 | 3640 N | ug | 139 | 0.54 | KNOX 0050/26A | 04/25/06 | 6116088 |
| | | | Dilution Factor: 1 | | | | | | |
| Hydrogen chloride | | | WO#: H2H691AC-MS/H2H691AD-MSD | | | | MS Lot-Sample #: H6D040103-001 | | |
| | 11800 | 3710 | 15700 | ug | 105 | | KNOX 0050/26A | 04/21/06 | 6114264 |
| | 11800 | 3710 | 15400 | ug | 97 | 1.9 | KNOX 0050/26A | 04/21/06 | 6114264 |
| | | | Dilution Factor: 1 | | | | | | |

**NOTE(S):**

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

N Spiked analyte recovery is outside stated control limits.

## SAMPLE DUPLICATE EVALUATION REPORT

### General Chemistry

**Client Lot #...:** H6D040103 **Work Order #...:** H2H69-SMP H2H69-DUP **Matrix.....:** AIR

**Date Sampled...:** 03/28/06 **Date Received..:** 04/02/06

| PARAM | RESULT | DUPLICATE RESULT | UNITS | RPD | RPD LIMIT | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|---|---|
| Hydrogen chloride | | | | | | SD Lot-Sample #: H6D040103-001 | | |
| | 11800 | 11900 | ug | 0.84 | (0-20) | KNOX 0050/26A Mod | 04/21/06 | 6114264 |

Dilution Factor: 1856.3

## SAMPLE DUPLICATE EVALUATION REPORT

### General Chemistry

**Client Lot #...:** H6D040103 **Work Order #...:** H2H7E-SMP H2H7E-DUP **Matrix.....:** AIR

**Date Sampled...:** 03/28/06 **Date Received..:** 04/02/06

| PARAM | RESULT | DUPLICATE RESULT | UNITS | RPD | RPD LIMIT | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|---|---|
| Chlorine | | | | | | SD Lot-Sample #: H6D040103-002 | | |
| | 1950 | 2010 | ug | 3.0 | (0-20) | KNOX 0050/26A Mod | 04/17/06 | 6116184 |

Dilution Factor: 610

## SAMPLE DUPLICATE EVALUATION REPORT

### General Chemistry

**Client Lot #...:** H6D040103 **Work Order #...:** H2H7F-SMP H2H7F-DUP **Matrix.....:** AIR

**Date Sampled...:** 03/28/06 **Date Received..:** 04/02/06

| PARAM | RESULT | DUPLICATE RESULT | UNITS | RPD | RPD LIMIT | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|---|---|
| Hydrogen chloride | | | | | | SD Lot-Sample #: H6D040103-003 | | |
| | ND | ND | ug | 0 | (0-20) | KNOX 0050/26A Mod | 04/25/06 | 6115303 |

Dilution Factor: 514.2

**SAMPLE DUPLICATE EVALUATION REPORT**

**General Chemistry**

**Client Lot #...:** H6D040103 **Work Order #...:** H2H7G-SMP H2H7G-DUP **Matrix.....:** AIR

**Date Sampled...:** 03/28/06 **Date Received..:** 04/02/06

| PARAM | RESULT | DUPLICATE RESULT | UNITS | RPD | RPD LIMIT | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|---|---|
| Chlorine | | | | | | SD Lot-Sample #: H6D040103-004 | | |
| | ND | ND | ug | 0 | (0-20) | KNOX 0050/26A Mod | 04/17/06 | 6116184 |

Dilution Factor: 100

# SAMPLE DUPLICATE EVALUATION REPORT

## General Chemistry

**Client Lot #...:** H6D040103 **Work Order #...:** H2H7J-SMP H2H7J-DUP **Matrix.....:** AIR

**Date Sampled...:** 03/29/06 **Date Received..:** 04/02/06

| PARAM | RESULT | DUPLICATE RESULT | UNITS | RPD | RPD LIMIT | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|---|---|
| Hydrogen chloride | | | | | | SD Lot-Sample #: H6D040103-005 | | |
| | 6950 | 6910 | ug | 0.58 | (0-20) | KNOX 0050/26A Mod | 04/21/06 | 6114264 |

Dilution Factor: 1938.6

## SAMPLE DUPLICATE EVALUATION REPORT

### General Chemistry

**Client Lot #...:** H6D040103 **Work Order #...:** H2H7K-SMP H2H7K-DUP **Matrix.....:** AIR

**Date Sampled...:** 03/29/06 **Date Received..:** 04/02/06

| PARAM | RESULT | DUPLICATE RESULT | UNITS | RPD | RPD LIMIT | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|---|---|
| Chlorine | | | | | | SD Lot-Sample #: H6D040103-006 | | |
| | 2010 | 2120 | ug | 5.3 | (0-20) | KNOX 0050/26A Mod | 04/17/06 | 6116184 |

Dilution Factor: 720

## SAMPLE DUPLICATE EVALUATION REPORT

### General Chemistry

**Client Lot #...:** H6D040103 **Work Order #...:** H2H7P-SMP H2H7P-DUP **Matrix.....:** AIR

**Date Sampled...:** 03/30/06 **Date Received..:** 04/02/06

| PARAM | RESULT | DUPLICATE RESULT | UNITS | RPD | RPD LIMIT | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|---|---|
| Hydrogen chloride | | | | | | SD Lot-Sample #: H6D040103-007 | | |
| | 6490 | 6190 | ug | 4.7 | (0-20) | KNOX 0050/26A Mod | 04/21/06 | 6114264 |

Dilution Factor: 1938.6

## SAMPLE DUPLICATE EVALUATION REPORT

### General Chemistry

**Client Lot #...:** H6D040103 **Work Order #...:** H2H7V-SMP H2H7V-DUP **Matrix.....:** AIR

**Date Sampled...:** 03/30/06 **Date Received..:** 04/02/06

| PARAM | RESULT | DUPLICATE RESULT | UNITS | RPD | RPD LIMIT | METHOD | PREPARATION-ANALYSIS DATE | PREP BATCH # |
|---|---|---|---|---|---|---|---|---|
| Chlorine | | | | | | SD Lot-Sample #: H6D040103-008 | | |
| | 1940 | 1920 | ug | 1.0 | (0-20) | KNOX 0050/26A Mod | 04/25/06 | 6116088 |

Dilution Factor: 610

# Raw Data

# Hydrogen Chloride / Chlorine

# STL Knoxville IC Initial Calibration Data Review / Narrative Checklist
## Methods: 300.0, 9056, 9057 and 26A, SOP: KNOX-WC-0005, Rev. 6


(ICS-1510)

| Analysis Date: | 3/23/06 | File ID: | C23-LOWLEVEL-CLFNO2-032306 |
|---|---|---|---|

| *Initial Calibration Review Items* | N/A | Yes | No | If No, why is data reportable? | 2nd √ |
|---|---|---|---|---|---|
| 1. Were at least 5 levels of each analyte analyzed? | | ✓ | | | ✓ |
| 2. Is low level standard concentration ≤ RL? | | ✓ | | | ✓ |
| 3. Are the correlation coefficients (r) ≥0.995; $r^2$≥0.990? | | ✓ | | | ✓ |
| 4. For method 300.0, was the calibration curve processed using linear reqression? | ✓ | | | | NA |
| 5. For manual integrated standards, are before/after chromatograms provided with initials/date/reason? | ✓ | | | Reasons: S=Split peak, U=Undetected peak, I=Incorrect peak integration, B=Baseline correction, W=Wrong peak chosen by data system | NA |

**Analyst:** CWK **Date:** 3/27/05

**Comments:**

Range: 0.05 ppm - 1.0 ppm

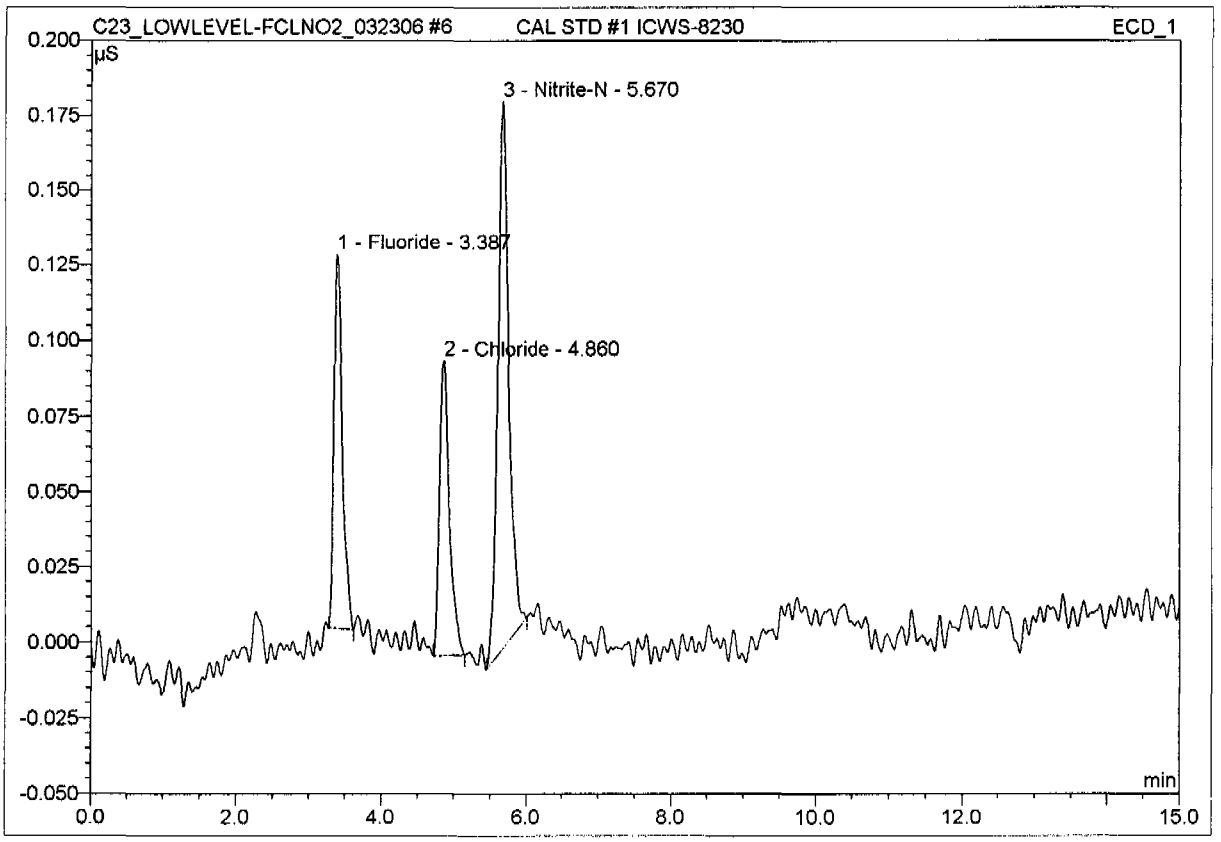
Height: $F^-$, $Cl^-$, $NO_2$-N

**2nd Level Reviewer:** [signature] **Date:** 3/27/06

**Comments:**

# 6 CAL STD #1 ICWS-8230

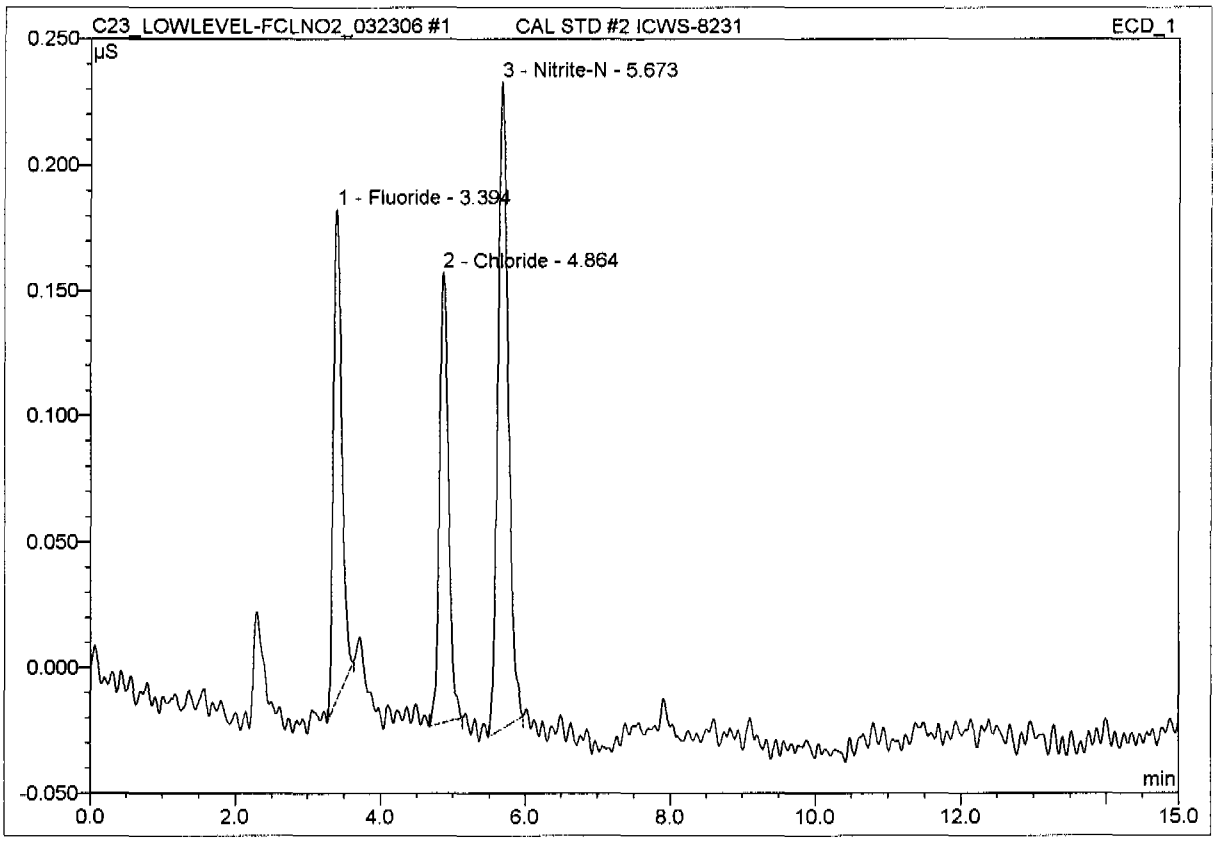
| | | | |
|---|---|---|---|
| *Sample Name:* | **CAL STD #1 ICWS-8230** | *Injection Volume:* | **50.0** |
| *Vial Number:* | **1207** | *Channel:* | **ECD_1** |
| *Sample Type:* | **standard** | *Wavelength:* | **n.a.** |
| *Control Program:* | **AS14A ANIONS METHOD** | *Bandwidth:* | **n.a.** |
| *Quantif. Method:* | **AS4A-SC ANION METHOD** | *Dilution Factor:* | **1.0000** |
| *Recording Time:* | **3/23/2006 12:37** | *Sample Weight:* | **1.0000** |
| *Run Time (min):* | **15.00** | *Sample Amount:* | **1.0000** |




| No. | Ret.Time (min.) | Peak Name | Height (uS) | Area µS*min | Rel.Area (%) | Amount (mg/L) | Peak Type |
|---|---|---|---|---|---|---|---|
| 1 | 3.39 | Fluoride | 0.12396 | 0.016 | 25.62 | 0.0497 | BMB |
| 2 | 4.86 | Chloride | 0.09774 | 0.016 | 24.26 | 0.0442 | BMB |
| 3 | 5.67 | Nitrite-N | 0.18176 | 0.032 | 50.13 | 0.0519 | BMB |

# 1 CAL STD #2 ICWS-8231

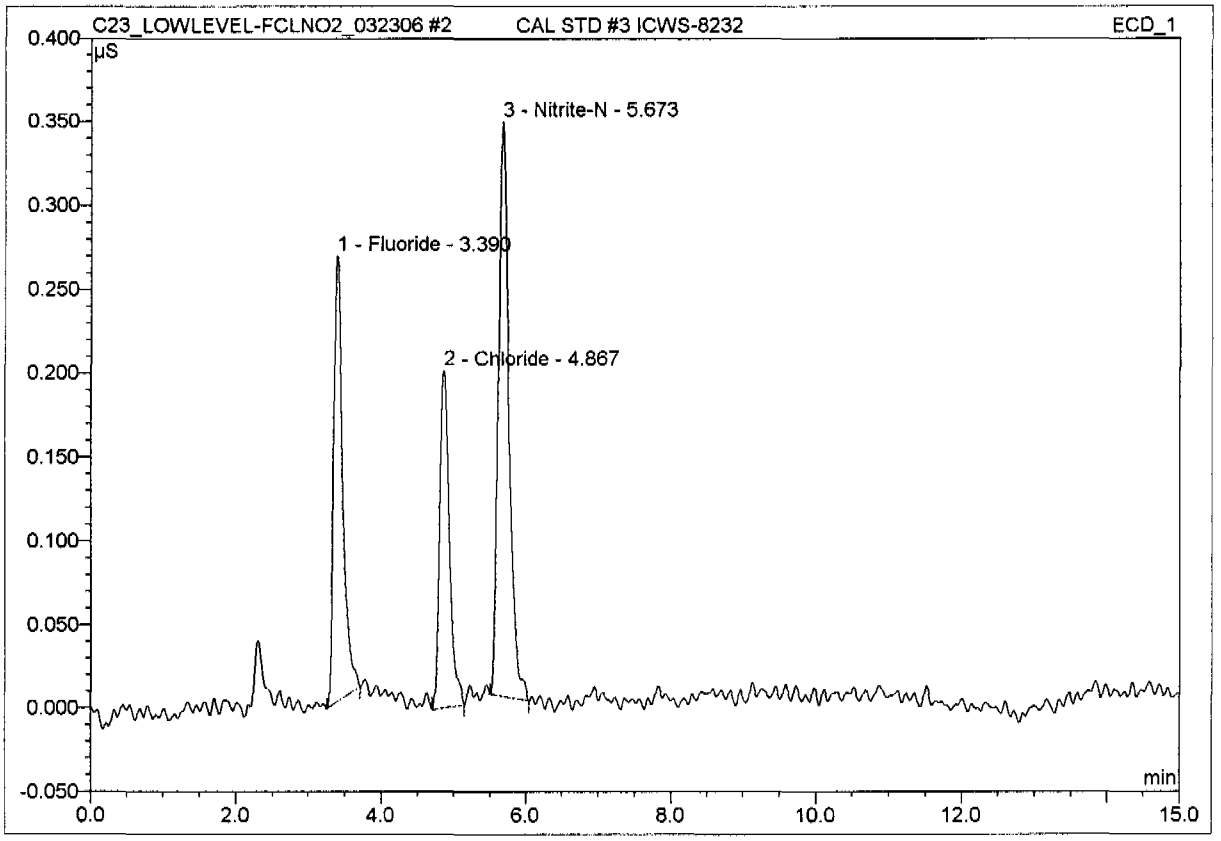
| | | | |
|---|---|---|---|
| *Sample Name:* | **CAL STD #2 ICWS-8231** | *Injection Volume:* | **50.0** |
| *Vial Number:* | **1202** | *Channel:* | **ECD_1** |
| *Sample Type:* | **standard** | *Wavelength:* | **n.a.** |
| *Control Program:* | **AS14A ANIONS METHOD** | *Bandwidth:* | **n.a.** |
| *Quantif. Method:* | **AS4A-SC ANION METHOD** | *Dilution Factor:* | **1.0000** |
| *Recording Time:* | **3/23/2006 10:51** | *Sample Weight:* | **1.0000** |
| *Run Time (min):* | **15.00** | *Sample Amount:* | **1.0000** |




| No. | Ret.Time (min.) | Peak Name | Height (uS) | Area µS*min | Rel.Area (%) | Amount (mg/L) | Peak Type |
|---|---|---|---|---|---|---|---|
| 1 | 3.39 | Fluoride | 0.19577 | 0.026 | 27.16 | 0.0754 | BMB |
| 2 | 4.86 | Chloride | 0.17938 | 0.026 | 27.03 | 0.0866 | BMB |
| 3 | 5.67 | Nitrite-N | 0.25730 | 0.044 | 45.81 | 0.0735 | BMB |

# 2 CAL STD #3 ICWS-8232

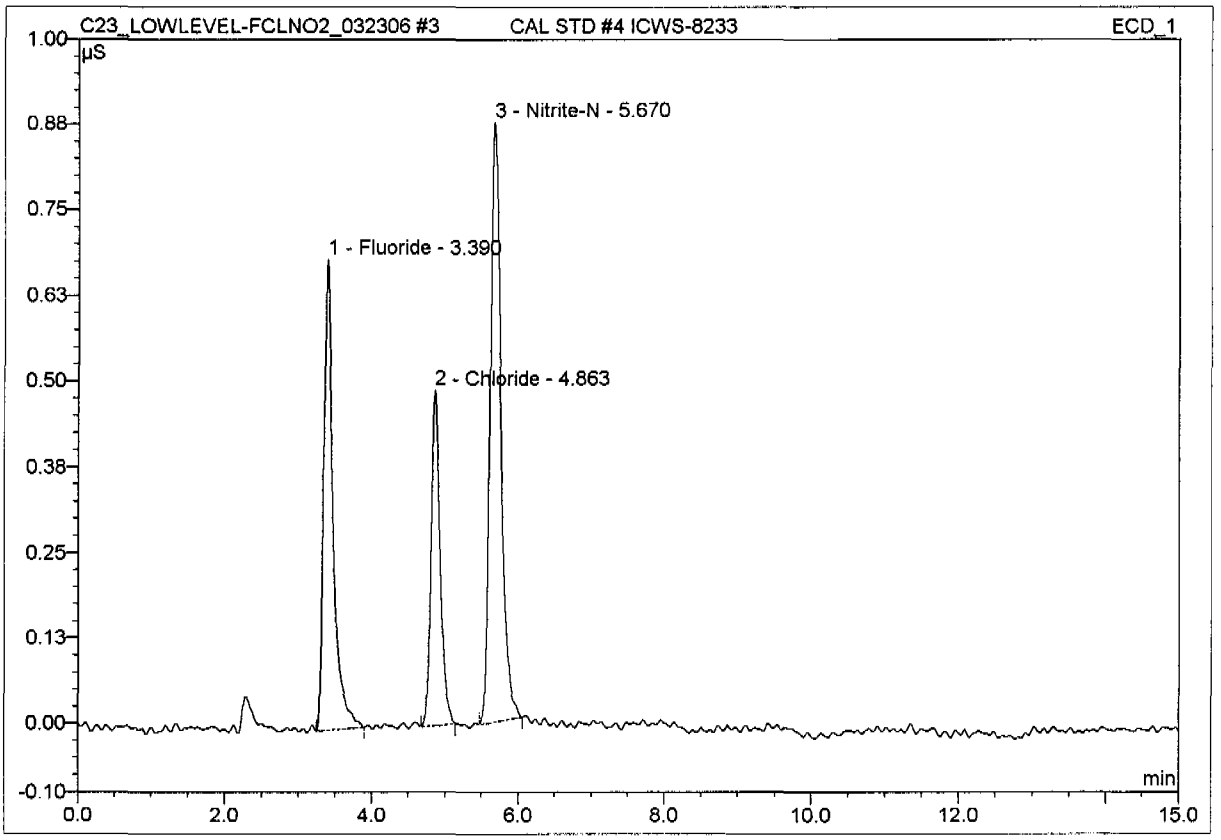
| | | | |
|---|---|---|---|
| *Sample Name:* | **CAL STD #3 ICWS-8232** | *Injection Volume:* | **50.0** |
| *Vial Number:* | **1203** | *Channel:* | **ECD_1** |
| *Sample Type:* | **standard** | *Wavelength:* | **n.a.** |
| *Control Program:* | **AS14A ANIONS METHOD** | *Bandwidth:* | **n.a.** |
| *Quantif. Method:* | **AS4A-SC ANION METHOD** | *Dilution Factor:* | **1.0000** |
| *Recording Time:* | **3/23/2006 11:08** | *Sample Weight:* | **1.0000** |
| *Run Time (min):* | **15.00** | *Sample Amount:* | **1.0000** |




| No. | Ret.Time (min.) | Peak Name | Height (uS) | Area µS*min | Rel.Area (%) | Amount (mg/L) | Peak Type |
|---|---|---|---|---|---|---|---|
| 1 | 3.39 | Fluoride | 0.26686 | 0.039 | 29.88 | 0.1007 | BMB |
| 2 | 4.87 | Chloride | 0.20179 | 0.031 | 24.30 | 0.0982 | BMB |
| 3 | 5.67 | Nitrite-N | 0.34319 | 0.059 | 45.83 | 0.0980 | BMB |

# 3 CAL STD #4 ICWS-8233

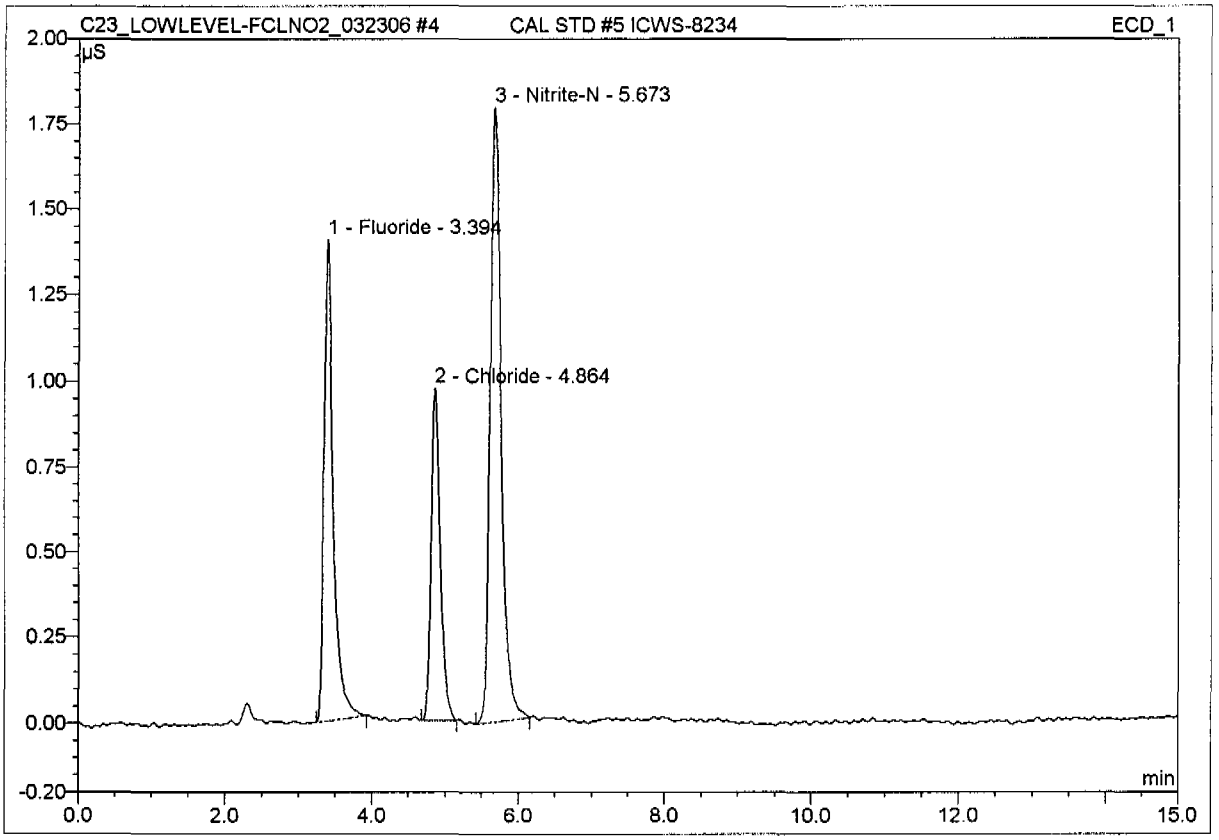
| | | | |
|---|---|---|---|
| *Sample Name:* | **CAL STD #4 ICWS-8233** | *Injection Volume:* | **50.0** |
| *Vial Number:* | **1204** | *Channel:* | **ECD_1** |
| *Sample Type:* | **standard** | *Wavelength:* | **n.a.** |
| *Control Program:* | **AS14A ANIONS METHOD** | *Bandwidth:* | **n.a.** |
| *Quantif. Method:* | **AS4A-SC ANION METHOD** | *Dilution Factor:* | **1.0000** |
| *Recording Time:* | **3/23/2006 11:25** | *Sample Weight:* | **1.0000** |
| *Run Time (min):* | **15.00** | *Sample Amount:* | **1.0000** |




| No. | Ret.Time (min.) | Peak Name | Height (uS) | Area µS*min | Rel.Area (%) | Amount (mg/L) | Peak Type |
|---|---|---|---|---|---|---|---|
| 1 | 3.39 | Fluoride | 0.68790 | 0.103 | 31.67 | 0.2493 | BMB |
| 2 | 4.86 | Chloride | 0.49037 | 0.071 | 21.95 | 0.2475 | BMB |
| 3 | 5.67 | Nitrite-N | 0.87589 | 0.150 | 46.38 | 0.2488 | BMB |

# 4 CAL STD #5 ICWS-8234

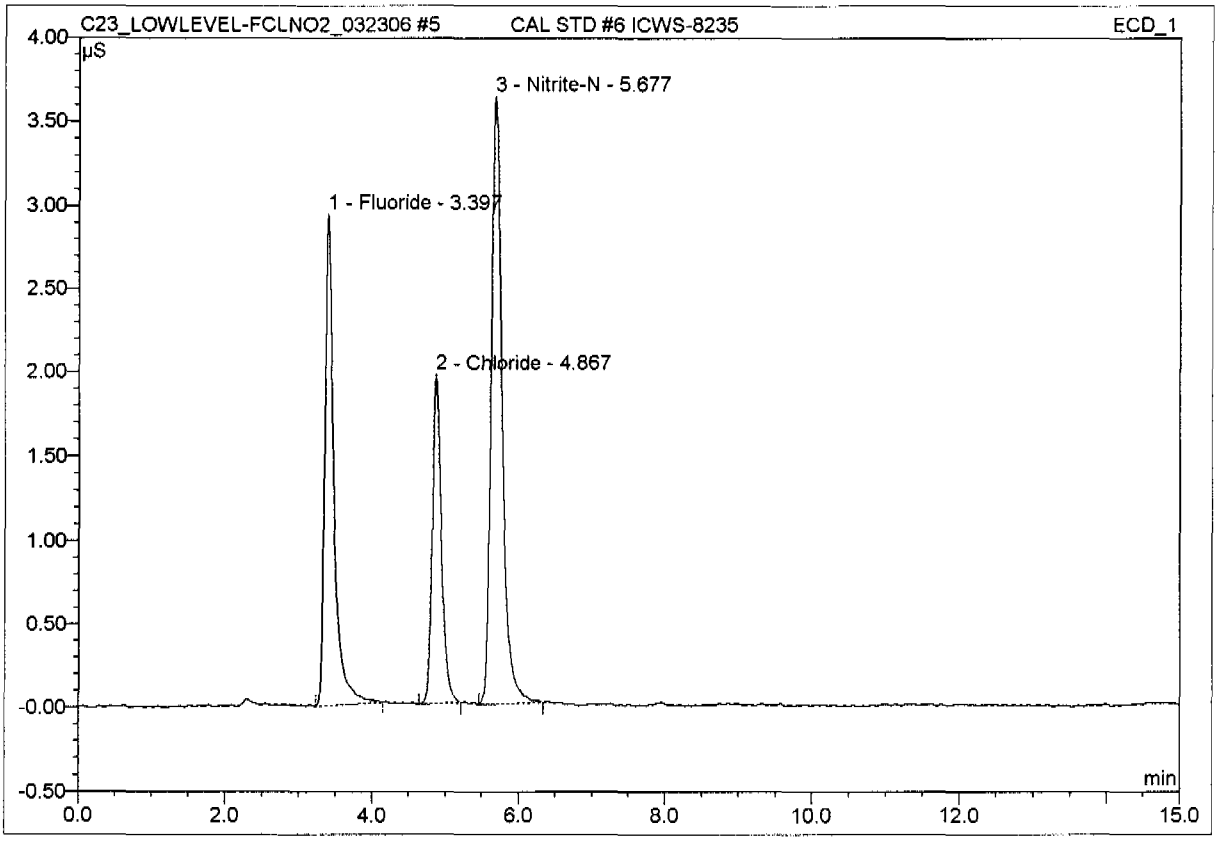
| | | | |
|---|---|---|---|
| *Sample Name:* | **CAL STD #5 ICWS-8234** | *Injection Volume:* | **50.0** |
| *Vial Number:* | **1205** | *Channel:* | **ECD_1** |
| *Sample Type:* | **standard** | *Wavelength:* | **n.a.** |
| *Control Program:* | **AS14A ANIONS METHOD** | *Bandwidth:* | **n.a.** |
| *Quantif. Method:* | **AS4A-SC ANION METHOD** | *Dilution Factor:* | **1.0000** |
| *Recording Time:* | **3/23/2006 11:43** | *Sample Weight:* | **1.0000** |
| *Run Time (min):* | **15.00** | *Sample Amount:* | **1.0000** |




| No. | Ret.Time (min.) | Peak Name | Height (uS) | Area µS*min | Rel.Area (%) | Amount (mg/L) | Peak Type |
|---|---|---|---|---|---|---|---|
| 1 | 3.39 | Fluoride | 1.40562 | 0.203 | 30.89 | 0.4967 | BMB |
| 2 | 4.86 | Chloride | 0.97380 | 0.141 | 21.50 | 0.4965 | BMB |
| 3 | 5.67 | Nitrite-N | 1.79553 | 0.313 | 47.61 | 0.5045 | BMB |

# 5 CAL STD #6 ICWS-8235

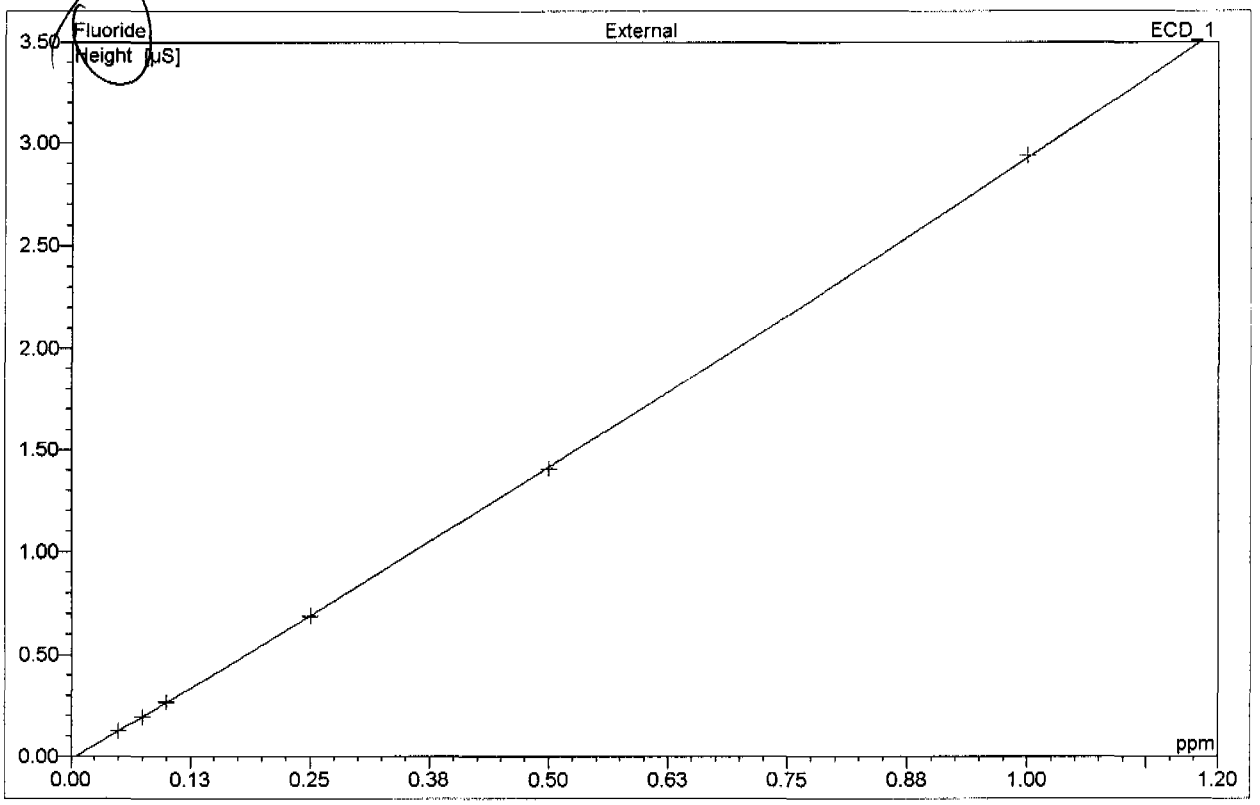
| | | | |
|---|---|---|---|
| *Sample Name:* | **CAL STD #6 ICWS-8235** | *Injection Volume:* | **50.0** |
| *Vial Number:* | **1206** | *Channel:* | **ECD_1** |
| *Sample Type:* | **standard** | *Wavelength:* | **n.a.** |
| *Control Program:* | **AS14A ANIONS METHOD** | *Bandwidth:* | **n.a.** |
| *Quantif. Method:* | **AS4A-SC ANION METHOD** | *Dilution Factor:* | **1.0000** |
| *Recording Time:* | **3/23/2006 12:00** | *Sample Weight:* | **1.0000** |
| *Run Time (min):* | **15.00** | *Sample Amount:* | **1.0000** |




| No. | Ret.Time (min.) | Peak Name | Height (uS) | Area µS*min | Rel.Area (%) | Amount (mg/L) | Peak Type |
|---|---|---|---|---|---|---|---|
| 1 | 3.40 | Fluoride | 2.93874 | 0.425 | 31.61 | 1.0030 | BMB |
| 2 | 4.87 | Chloride | 1.96386 | 0.287 | 21.36 | 1.0020 | BMB |
| 3 | 5.68 | Nitrite-N | 3.63137 | 0.632 | 47.03 | 0.9983 | BMB |

## 5 ~~CAL STD #6 ICWS-8235~~ DFW 3/27/06

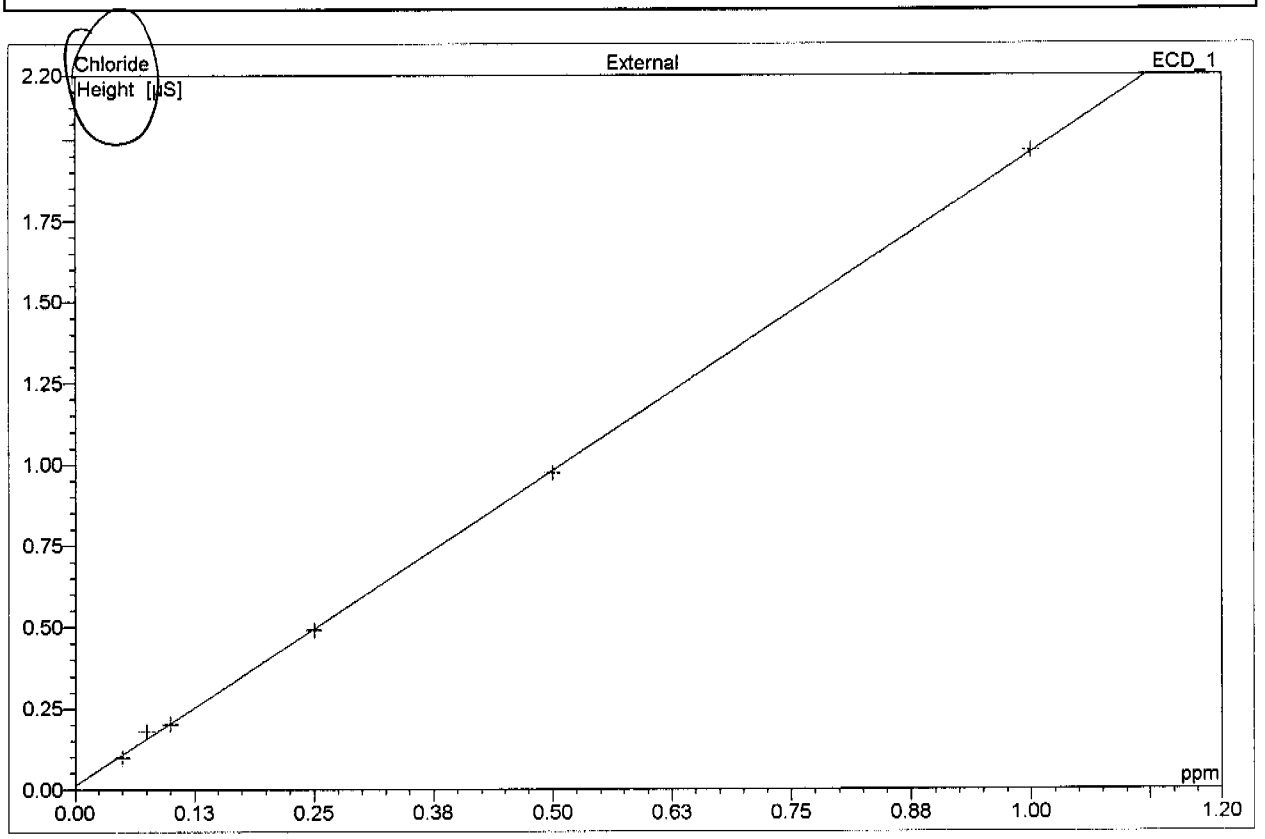
| | | | |
|---|---|---|---|
| *Sample Name:* | **CAL STD #6 ICWS-8235** | *Injection Volume:* | **50.0** |
| *Vial Number:* | **1206** | *Channel:* | **ECD_1** |
| *Sample Type:* | **standard** | *Wavelength:* | **n.a.** |
| *Control Program:* | **AS14A ANIONS METHOD** | *Bandwidth:* | **n.a.** |
| *Quantif. Method:* | **AS4A-SC ANION METHOD** | *Dilution Factor:* | **1.0000** |
| *Recording Time:* | **3/23/2006 12:00** | *Sample Weight:* | **1.0000** |
| *Run Time (min):* | **15.00** | *Sample Amount:* | **1.0000** |




| No. | Ret.Time min | Peak Name | Cal.Type | Points | R-Square | Offset | Slope | Curve |
|---|---|---|---|---|---|---|---|---|
| 1 | 3.40 | Fluoride | XXQOff | 6 | 0.9999 | -0.014390 | 2.77520 | 0.168474 |
| 2 | 4.87 | Chloride | X0QOff | 6 | 0.9980 | 0.012524 | 1.92498 | 0.022501 |
| 3 | 5.68 | Nitrite-N | X0QOff | 6 | 0.9999 | 0.000895 | 3.47706 | 0.159690 |
| **Average:** | | | | | 0.9993 | -0.0003 | 2.7257 | 0.1169 |

## 5 ~~CAL STD #6 ICWS-8235~~ DEW 3/27/06

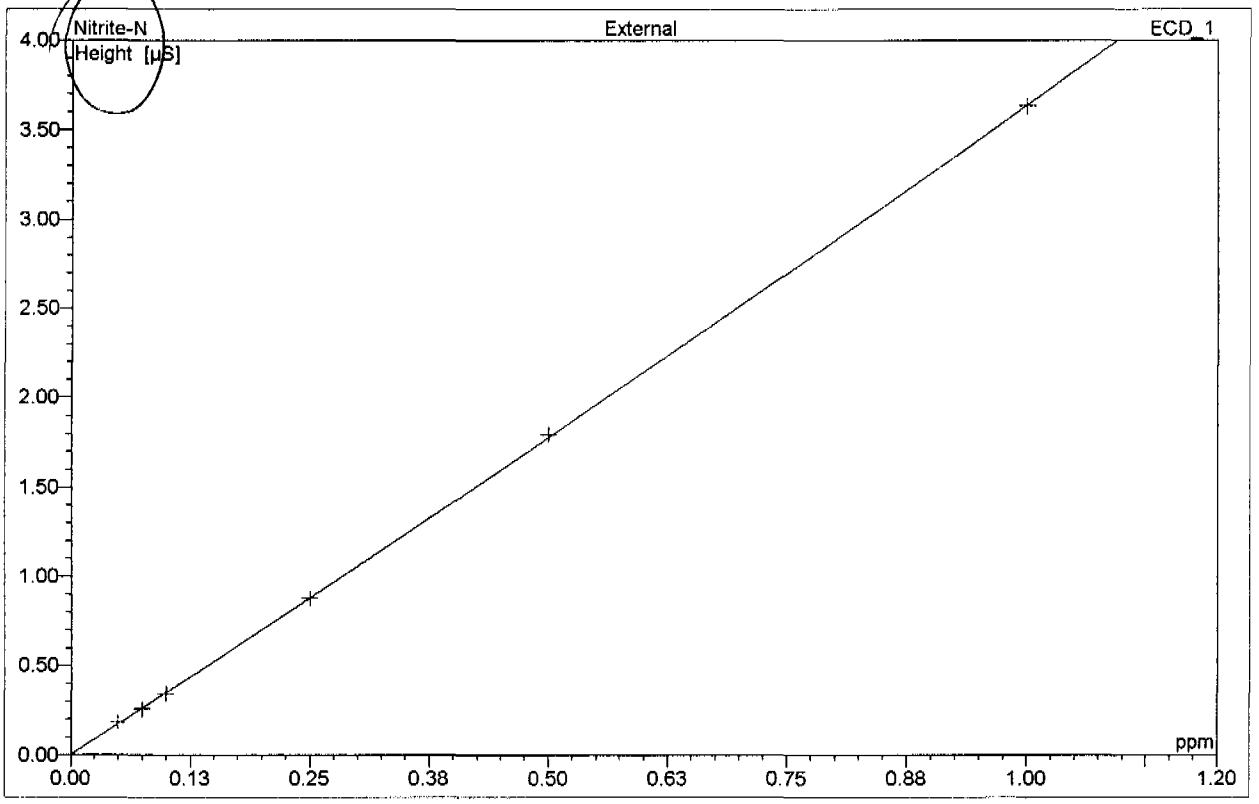
| | | | |
|---|---|---|---|
| *Sample Name:* | **CAL STD #6 ICWS-8235** | *Injection Volume:* | **50.0** |
| *Vial Number:* | **1206** | *Channel:* | **ECD_1** |
| *Sample Type:* | **standard** | *Wavelength:* | **n.a.** |
| *Control Program:* | **AS14A ANIONS METHOD** | *Bandwidth:* | **n.a.** |
| *Quantif. Method:* | **AS4A-SC ANION METHOD** | *Dilution Factor:* | **1.0000** |
| *Recording Time:* | **3/23/2006 12:00** | *Sample Weight:* | **1.0000** |
| *Run Time (min):* | **15.00** | *Sample Amount:* | **1.0000** |




| No. | Ret.Time min | Peak Name | Cal.Type | Points | R-Square | Offset | Slope | Curve |
|---|---|---|---|---|---|---|---|---|
| 1 | 3.40 | Fluoride | XXQOff | 6 | 0.9999 | -0.014390 | 2.77520 | 0.168474 |
| 2 | 4.87 | Chloride | X0QOff | 6 | 0.9980 | 0.012524 | 1.92498 | 0.022501 |
| 3 | 5.68 | Nitrite-N | X0QOff | 6 | 0.9999 | 0.000895 | 3.47706 | 0.159690 |
| **Average:** | | | | | 0.9993 | -0.0003 | 2.7257 | 0.1169 |

## ~~5 CAL STD #6 ICWS-8235~~ JFW 3/27/06

| | | | |
|---|---|---|---|
| *Sample Name:* | **CAL STD #6 ICWS-8235** | *Injection Volume:* | **50.0** |
| *Vial Number:* | **1206** | *Channel:* | **ECD_1** |
| *Sample Type:* | **standard** | *Wavelength:* | **n.a.** |
| *Control Program:* | **AS14A ANIONS METHOD** | *Bandwidth:* | **n.a.** |
| *Quantif. Method:* | **AS4A-SC ANION METHOD** | *Dilution Factor:* | **1.0000** |
| *Recording Time:* | **3/23/2006 12:00** | *Sample Weight:* | **1.0000** |
| *Run Time (min):* | **15.00** | *Sample Amount:* | **1.0000** |




| No. | Ret.Time min | Peak Name | Cal.Type | Points | R-Square | Offset | Slope | Curve |
|---|---|---|---|---|---|---|---|---|
| 1 | 3.40 | Fluoride | XXQOff | 6 | 0.9999 | -0.014390 | 2.77520 | 0.168474 |
| 2 | 4.87 | Chloride | X0QOff | 6 | 0.9980 | 0.012524 | 1.92498 | 0.022501 |
| 3 | 5.68 | Nitrite-N | X0QOff | 6 | 0.9999 | 0.000895 | 3.47706 | 0.159690 |
| **Average:** | | | | | 0.9993 | -0.0003 | 2.7257 | 0.1169 |

**STL KNOXVILLE**
**PREPARATION OF FINAL WORKING STANDARD SOLUTIONS FROM VENDOR PREPARED STOCKS**
**WET CHEMISTRY**

Date: CWK 3/23/06 Chemist: CWK Expiration Date: 4/1/06

| | ID Number | Compound Name | Parent Lot Number | Parent Source | Parent Exp. Date | Parent Conc. | Aliquot Volume (ml) | Dilution Volume (ml) | Final Conc. |
|---|---|---|---|---|---|---|---|---|---|
| 1. | ICW1-8228 | $F^-$ | 22015 | ERA | 1/31/07 | 1,000 ppm | 2.5 ml | 25 | 100 ppm |
| 2. | (cal source intermediate) | $Cl^-$ | 36065 | " | 6/30/07 | " | " | " | " |
| 3. | " | $NO_2$-N | 17075 | " | 7/31/07 | " | " | " | " |
| 4. | ICW1-8229 | $F^-$ | 28-126AS | Spex | 9/15/06 | " | " | " | " |
| 5. | (2nd source intermediate) | $Cl^-$ | X-CL01068 | Inorg Ven | 4/1/06 | " | " | " | " |
| 6. | " | $NO_2$-N | 1-13NO2N-2 | Spex | 10/30/06 | " | " | " | " |
| 7. | | | | | | | | | |
| 8. | | | | | | | | | |
| 9. | | | | | | | | | |
| 10. | | | | | | | | | |
| 11. | | | | | | | | | |
| 12. | | | | | | | | | |
| 13. | | | | | | | | | |
| 14. | | | | | | | | | |

Reviewed By: _____

**STL KNOXVILLE**
**PREPARATION OF FINAL WORKING STANDARD SOLUTIONS FROM VENDOR PREPARED STOCKS**
**WET CHEMISTRY**

Date: 3/23/06 Chemist: CWK Expiration Date: 3/24/06

| | ID Number | Compound Name | Parent Lot Number | Parent Source | Parent Exp. Date | Parent Conc. | Aliquot Volume (ml) | Dilution Volume (ml) | Final Conc. |
|---|---|---|---|---|---|---|---|---|---|
| 1. | ICWS-8230 | $F^-$ | ICWI- | 8228 | 4/1/06 | 100 ppm | 0.05 | 100 ml | 0.05 ppm |
| 2. | (cal 1) | $Cl^-$ | | | | | | | |
| 3. | | $NO_2$-N | | | | | | | |
| 4. | ICWS-8231 | $F^-$ | | | | | 0.075 | | 0.075 |
| 5. | (cal 2) | $Cl^-$ | | | | | | | |
| 6. | | $NO_2$-N | | | | | | | |
| 7. | ICWS-8232 | $F^-$ | | | | | 0.100 | | 0.100 |
| 8. | (cal 3) | $Cl^-$ | | | | | | | |
| 9. | | $NO_2$-N | | | | | | | |
| 10. | ICWS 8233 | $F^-$ | | | | | 0.250 | | 0.250 |
| 11. | (cal 4) | $Cl^-$ | | | | | | | |
| 12. | | $NO_2$-N | | | | | | | |
| 13. | | | | | | | | | |
| 14. | | | | | | | | | |

Reviewed By: _____

**STL KNOXVILLE**
**PREPARATION OF FINAL WORKING STANDARD SOLUTIONS FROM VENDOR PREPARED STOCKS**
**WET CHEMISTRY**

Date: 3/23/06 Chemist: CWK Expiration Date: 3/24/06

| | ID Number | Compound Name | Parent Lot Number | Parent Source | Parent Exp. Date | Parent Conc. | Aliquot Volume (ml) | Dilution Volume (ml) | Final Conc. |
|---|---|---|---|---|---|---|---|---|---|
| 1. | ICWS-8234 | F- | ICWI- | 8228 | 4/1/06 | 100 ppm | 0.500 | 100 ml | 0.50 ppm |
| 2. | (Cal 5 & CCV) | Cl- | | | | | | | |
| 3. | | $NO_2$-N | | | | | | | |
| 4. | ICWS-8235 | F- | | | | | 1.00 | | 1.0 ppm |
| 5. | (Cal 6) | Cl- | | | | | | | |
| 6. | | $NO_2$-N | | | | | | | |
| 7. | | | | | | | | | |
| 8. | ICWS 8236 | F- | ICWI- | 8229 | 4/1/06 | 100 ppm | 0.250 | 100 ml | 0.25 ppm |
| 9. | (ICV/LCS) | Cl- | | | | | | | |
| 10. | | $NO_2$-N | | | | | | | |
| 11. | ICWS 8237 | F- | | | | | | | |
| 12. | (ICV/CCSD) | Cl- | | | | | | | |
| 13. | | $NO_2$-N | | | | | | | |
| 14. | | | | | | | | | |

Reviewed By: _____

# STL Knoxville Anions in Air Data Review / Narrative Checklist for Methods 9056/9057/26A, SOP KNOX-WC-0005, Rev. 5



| Lot Number | H6D040103 | Analysis Date: | 4/17/06 | File ID: | D17-LOWLEVEL-FCLNO2-041706 | ICAL File ID: | C23-LOWLEVEL-FCLNO2-032306 |
|---|---|---|---|---|---|---|---|

| Review Items | NA | Yes | No | If No, why is data reportable? | 2nd ✓ |
|---|---|---|---|---|---|
| 1. Were PM checklists (L40), Lot Summary and any applicable QAS reviewed? | | ✓ | | | ✓ |
| 2. ICV within 90-110%R and ICB/CCB < 1/2 RL? | | ✓ | | | ✓ |
| 3. CCVs/CCBs run after every 10 samples, and at end of sequence? | | ✓ | | | ✓ |
| 4. Is %D ≤10% for each CCV? | | ✓ | | | ✓ |
| 5. If CCV failed, was it rerun only once? | ✓ | | | | N/A |
| 6. LCS/LCSD analytes within 90-110%R? *If no, list LCS ID:* | | ✓ | | ☐ **[lcs3] LCS recovery >upper control limit & sample results are <RL.*** | ✓ |
| 7. Method blank < 1/2 RL?<br>*If no, list blank ID:* | | ✓ | | ☐ **[mb3] No analyte > RL in associated samples.***<br>☐ [mb7] Sample results > 10x higher than blank. | ✓ |
| 8. Matrix spikes run at required frequency? | | ✓ | | | ✓ |
| 9. Matrix spikes within 75-125% recovery?<br>*If no, list MS ID:* H2H7E<br>High recovery due to matrix interferences | | | ✓ | ☐ [air ms1] MS %R slightly outside limits for 1 sample.<br>☑ [air ms2] MS %R slightly outside limits for >1 sample.<br>☐ Air train reagent blank – spike result not reported. | ✓ |
| 10. Were MS run#'s assigned to all matrix spikes except reagent blanks? | | ✓ | | | ✓ |
| 11. Sample analyses done within holding time (HT)?<br>*If no, list samples:* | | ✓ | | ☐ [ht1] HT expired upon receipt.<br>☐ *[ht2] Analysis requested after HT expired.** | ✓ |
| 12. Were results processed using correct ICAL? | | ✓ | | | ✓ |
| 13. Are positive results within the calibration range? | | ✓ | | | ✓ |
| 14. Is integration acceptable for all samples, QC samples and standards? | | ✓ | | | ✓ |
| 15. For manual integrated standards and QC samples, are before/after chromatograms provided with initials/date/reason? | | ✓ | | Reasons: S=Split peak, U=Undetected peak, I=Incorrect peak integration, B=Baseline correction, W=Wrong peak chosen by data system. | ✓ |
| 16. Calculations checked for error? (Document manual calculation checks.) | | ✓ | | | ✓ |
| 17. Were spreadsheets checked for transcription errors? | | ✓ | | | ✓ |
| 18. Final report/F6 correct? (Verify results, RLs, units, qualifiers, DFs, dates, spikes.) | | ✓ | | | ✓ |
| 19. Are all nonconformances documented and discussed in narrative? | ✓ | | | List NCM #: | N/A |
| 20. Appropriate air train autotext selected for narrative? | | ✓ | | ☑ [air1] $Cl^-$ reported as HCl and $Cl_2$.<br>☐ [air2] $Cl^-$ reported as HCl only.<br>☐ [air3] $Cl^-$, $F^-$ reported as HCl, $Cl_2$, HF.<br>☐ [air4] $Cl^-$, $F^-$, $Br^-$ reported as HCl, $Cl_2$, HF, HBr, $Br_2$.<br>☐ [air5] $Cl^-$, $F^-$, $NO_2^-$, $NO_3^-$ reported as HCl, $Cl_2$, HF, $HNO_2$, $HNO_3$.<br>☐ [air6] $Cl^-$, $F^-$, $Br^-$, $I^-$ reported as HCl, $Cl_2$, HF, HBr, $Br_2$, I.<br>☐ [air7] $Cl^-$, $F^-$, $NO_2^-$, $NO_3^-$ reported as $Cl^-$, $F^-$, $NO_2^-$, $NO_3^-$. | ✓ |
| 21. Sample pH adjustment included in narrative? | ✓ | | | ☐ [air pH] Sample pH adjusted prior to analysis. | N/A |
| 22. Audit sample results included in narrative? | ✓ | | | ☐ [audit2] Audit results in mg/L. | N/A |

| Analyst: CWK | Date: 4/26/05 | 2nd Level Reviewer: | Date: 4/27/06 |
|---|---|---|---|
| Comments: H2H7E 1/20 | | Comments: | |
| $Y = 0.012524 + 1.92498(0.319335) + 0.022501(0.319335)^2$ | | | |
| $y = 0.012524 + 0.614713488 + 0.00229453$ | | | |
| $y = 0.6295$ ✓ | | | |

* Such action must be taken in consultation with client.

Nonconformance memos are required for **bold** and *italicized* [autotext] statements: **Bold** = deficiency, *italicized* = anomoly.

# STL Knoxville
# Chlorine ($Cl_2$) Analysis

Batch No.: 6116184
QuantIMS RL (ug/mL): 1.0
QuantIMS MDL (ug/mL): 0.3
Low Calibration Standard (ug/mL): 0.1

2nd Level Review by: RMW
Date: 4/27/06
No. of Significant Figures: 3

| Sample Type | Lab ID | Sample Volume (mL) | Bench Dilution | Final Chloride Result (ug/mL) (Corrected for bench dilution) | **Rounded Result ug $Cl_2$** | Rounded RL ug $Cl_2$ | Rounded MDL ug $Cl_2$ | **QuantIMS Dilution Factor** |
|---|---|---|---|---|---|---|---|---|
| BLANK | H33P51AA | 100 | 1 | 0.000 | **ND** | 10.0 | 3.00 | **10.0** |
| LCS | H33P51AC | 100 | 1 | 0.502 | **50.2** | 10.0 | 3.00 | **10.0** |
| LCSD | H33P51AD | 100 | 1 | 0.505 | **50.5** | 10.0 | 3.00 | **10.0** |
| SPIKE ADDED | | 100 | 1 | 0.500 | **50.0** | 10.0 | 3.00 | **10.0** |
| | H2H7E | 305 | 20 | 6.387 | **1,950** | 610 | 183 | **610.0** |
| | H2H7E DUP | 305 | 20 | 6.585 | **2,010** | 610 | 183 | **610.0** |
| MS | H2H7E MS | 305 | 20 | 12.194 | **3,720** | 610 | 183 | **610.0** |
| MSD | H2H7E MSD | 305 | 20 | 11.828 | **3,610** | 610 | 183 | **610.0** |
| SPIKE ADDED | | 305 | 20 | 4.000 | **1,220** | 610 | 183 | **610.0** |
| | H2H7G | 100 | 10 | 0.267 | **ND** | 100 | 30.0 | **100.0** |
| | H2H7G DUP | 100 | 10 | 0.166 | **ND** | 100 | 30.0 | **100.0** |
| MS | H2H7G MS | 100 | 10 | 2.107 | **211** | 100 | 30.0 | **100.0** |
| SPIKE ADDED | | 100 | 10 | 2.000 | **200** | 100 | 30.0 | **100.0** |
| | H2H7K | 360 | 20 | 5.579 | **2,010** | 720 | 216 | **720.0** |
| | H2H7K DUP | 360 | 20 | 5.880 | **2,120** | 720 | 216 | **720.0** |

**Rounded Result, ug $Cl_2$** = Chloride result (ug/mL) x Sample Volume (mL)

**Rounded RL, ug $Cl_2$** = Low Calibration Standard (ug/mL) x Sample Volume (mL) x Bench Dilution

**Rounded MDL, ug $Cl_2$** = QuantIMS MDL (ug/mL) x Low Calibration Standard (ug/mL) / QuantIMS RL (ug/mL) x Sample Volume (mL) x Bench Dilution

**QuantIMS Dilution Factor** = Sample Volume (mL) x Bench Dilution x Low Calibration Standard (ug/mL) / QuantIMS RL (ug/mL)

# STL Knoxville
# Dionex IC Runlog Cover Page

| Analyst: | CWK | Date: | 4/17/06 | Sequence ID: | D17-LOWLEVEL-FCLN02-041706 |
|---|---|---|---|---|---|

| Instrument: | ☐ DX-600 | Method: | ☐ KNOX-WC-0003, SW-846 0061/7199 |
|---|---|---|---|
| | ☑ ICS-1500 | | ☐ KNOX-WC-0005, ☐ SW-846 9056 ☐ EPA 300.0 ☐ SW-846 9057-Mod ☑ EPA 26A-Mod |
| | ☐ DX-320 | | ☐ KNOX-WC-0014, EPA 314.0 |

| Preventive Maintenance | Instrument Conditions | | |
|---|---|---|---|
| **Daily:** | Flow Rate = | 1.00 | mL/min |
| ☑ Check pump and gas pressure | Pressure = | 2070 | psi |
| ☑ Check all lines for crimping, leaks and discoloration | Conductance = | 24.8 | µS |
| **As Needed:** | Suppressor Current = | 43 | mA |
| ☐ Change column and guard column | Eluent Generator = | — | mM KOH |
| ☐ Change column and/or guard column bed support | | | |
| ☐ Clean conductivity cell | | | |
| ☐ De-gas pump head when flow is erratic | | | |
| ☐ Check/replace eluant end line filter | | | |

**MS/MSD Spike Information**

| WO # | Compound | Spike ID | Parent Conc. | Spike Added (mL) | Final Volume (mL) | Final Conc. |
|---|---|---|---|---|---|---|
| H2H7E | Cl- | ICW1-8262 | 100 ppm | 0.020 mL | 10 mL | 0.2 ppm |
| H2H7G | Cl- | 1 | 100 ppm | 0.020 mL | 10 mL | 0.2 ppm |
| | | | | | | |
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**Comments:**

Didn't obtain good separation at 1/10, so proceeded to analyze all of the samples at 1/20 dilution. However, it appeared as if the peaks were widening so Area was used instead of height. MS/MSD recovery improved somewhat but results still outside acceptance limits.

☑ Sodium Thiosulfate added to NaOH impinger samples. Analyze samples at 1/50 dilution.

high recovery due to matrix interference

Sequence: D17_LOWLEVEL-FCLNO2_041706
Operator: kaukerc


Printed: 4/18/2006 8:13:20 AM

Title:
Datasource: ICS_1500_net
Location: ICS1500
Timebase: ICS1500
#Samples: 30

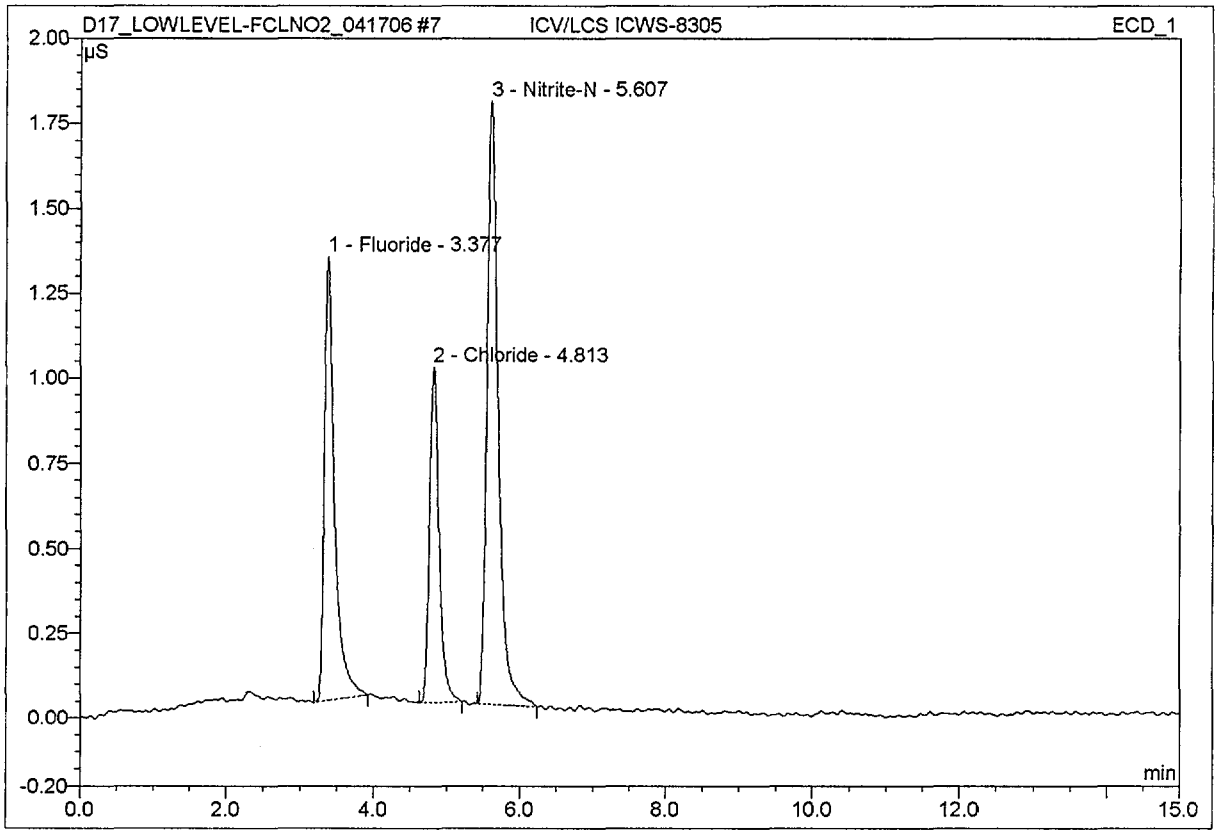
CWK 4/18/06

Created: 4/17/2006 10:46:02 AM by kaukerc
Last Update: 4/17/2006 2:12:37 PM by kaukerc

| No. | Name | Sample ID | Inj. Vol. | Inj. Date/Time | Dil. Factor | *Multiplier [Liters] | Weight |
|---|---|---|---|---|---|---|---|
| 1 | CAL STD #2 ICWS-8231 | | 50.0 | 3/23/2006 10:51:01 AM | 1.0000 | | 1.0000 |
| 2 | CAL STD #3 ICWS-8232 | | 50.0 | 3/23/2006 11:08:25 AM | 1.0000 | | 1.0000 |
| 3 | CAL STD #4 ICWS-8233 | | 50.0 | 3/23/2006 11:25:49 AM | 1.0000 | | 1.0000 |
| 4 | CAL STD #5 ICWS-8234 | | 50.0 | 3/23/2006 11:43:13 AM | 1.0000 | | 1.0000 |
| 5 | CAL STD #6 ICWS-8235 | | 50.0 | 3/23/2006 12:00:37 PM | 1.0000 | | 1.0000 |
| 6 | CAL STD #1 ICWS-8230 | | 50.0 | 3/23/2006 12:37:04 PM | 1.0000 | | 1.0000 |
| 7 | ICV/LCS ICWS-8305 | | 50.0 | 4/17/2006 10:54:01 AM | 1.0000 | | 1.0000 |
| 8 | ICV/LCSD ICWS-8306 | | 50.0 | 4/17/2006 11:11:25 AM | 1.0000 | | 1.0000 |
| 9 | ICB/METHOD BLK | | 50.0 | 4/17/2006 11:28:49 AM | 1.0000 | | 1.0000 |
| 10 | H6D040103 H2H7E 1/10 | | 50.0 | 4/17/2006 12:03:38 PM | 10.0000 | | 1.0000 |
| 11 | H6D040103 H2H7E MS 1/10 3PPM | | 50.0 | 4/17/2006 12:36:02 PM | 10.0000 | | 1.0000 |
| 12 | H6D040103 H2H7E 1/20 | | 50.0 | 4/17/2006 1:08:26 PM | 20.0000 | | 1.0000 |
| 13 | H6D040103 H2H7E MS 1/20 0.2PPM | | 50.0 | 4/17/2006 1:40:50 PM | 20.0000 | | 1.0000 |
| 14 | H6D040103 H2H7E DUP 1/20 | | 50.0 | 4/17/2006 2:13:15 PM | 20.0000 | | 1.0000 |
| 15 | H6D040103 H2H7E MSD 0.2 PPM CL | | 50.0 | 4/17/2006 2:45:39 PM | 20.0000 | | 1.0000 |
| 16 | H6D040103 H2H7K 1/20 | | 50.0 | 4/17/2006 3:18:03 PM | 20.0000 | | 1.0000 |
| 17 | CCV ICWS-8307 | | 50.0 | 4/17/2006 3:50:28 PM | 1.0000 | | 1.0000 |
| 18 | CCB | | 50.0 | 4/17/2006 4:07:52 PM | 1.0000 | | 1.0000 |
| 19 | H6D040103 H2H7K DUP 1/20 | | 50.0 | 4/17/2006 4:25:17 PM | 20.0000 | | 1.0000 |
| 20 | H6D040103 H2H7V 1/20 | | 50.0 | 4/17/2006 4:57:41 PM | 20.0000 | | 1.0000 |
| 21 | H6D040103 H2H7V DUP 1/20 | | 50.0 | 4/17/2006 5:30:05 PM | 20.0000 | | 1.0000 |
| 22 | H6D040103 H2H7G 1/20 | | 50.0 | 4/17/2006 6:02:29 PM | 20.0000 | | 1.0000 |
| 23 | H6D040103 H2H7G DUP 1/20 | | 50.0 | 4/17/2006 6:34:54 PM | 20.0000 | | 1.0000 |
| 24 | H6D040103 H2H7G MS 0.2 PPM CL 1/20 | | 50.0 | 4/17/2006 7:07:18 PM | 20.0000 | | 1.0000 |
| 25 | H6D040103 H2H7G 1/10 | | 50.0 | 4/17/2006 7:39:43 PM | 10.0000 | | 1.0000 |
| 26 | H6D040103 H2H7G DUP 1/10 | | 50.0 | 4/17/2006 8:12:08 PM | 10.0000 | | 1.0000 |
| 27 | H6D040103 H2H7G MS 0.2PPM 1/10 | | 50.0 | 4/17/2006 8:44:32 PM | 10.0000 | | 1.0000 |
| 28 | CCV ICWS-8307 | | 50.0 | 4/17/2006 9:16:56 PM | 1.0000 | | 1.0000 |
| 29 | CCB | | 50.0 | 4/17/2006 9:34:20 PM | 1.0000 | | 1.0000 |
| 30 | SHUTDOWN | | 50.0 | 4/17/2006 9:51:45 PM | 1.0000 | | 1.0000 |

# 7 ICV/LCS ICWS-8305

| | | | |
|---|---|---|---|
| *Sample Name:* | **ICV/LCS ICWS-8305** | *Injection Volume:* | **50.0** |
| *Vial Number:* | **1207** | *Channel:* | **ECD_1** |
| *Sample Type:* | **unknown** | *Wavelength:* | **n.a.** |
| *Control Program:* | **AS14A ANIONS METHOD** | *Bandwidth:* | **n.a.** |
| *Quantif. Method:* | **AS4A-SC ANION METHOD** | *Dilution Factor:* | **1.0000** |
| *Recording Time:* | **4/17/2006 10:54** | *Sample Weight:* | **1.0000** |
| *Run Time (min):* | **15.00** | *Sample Amount:* | **1.0000** |



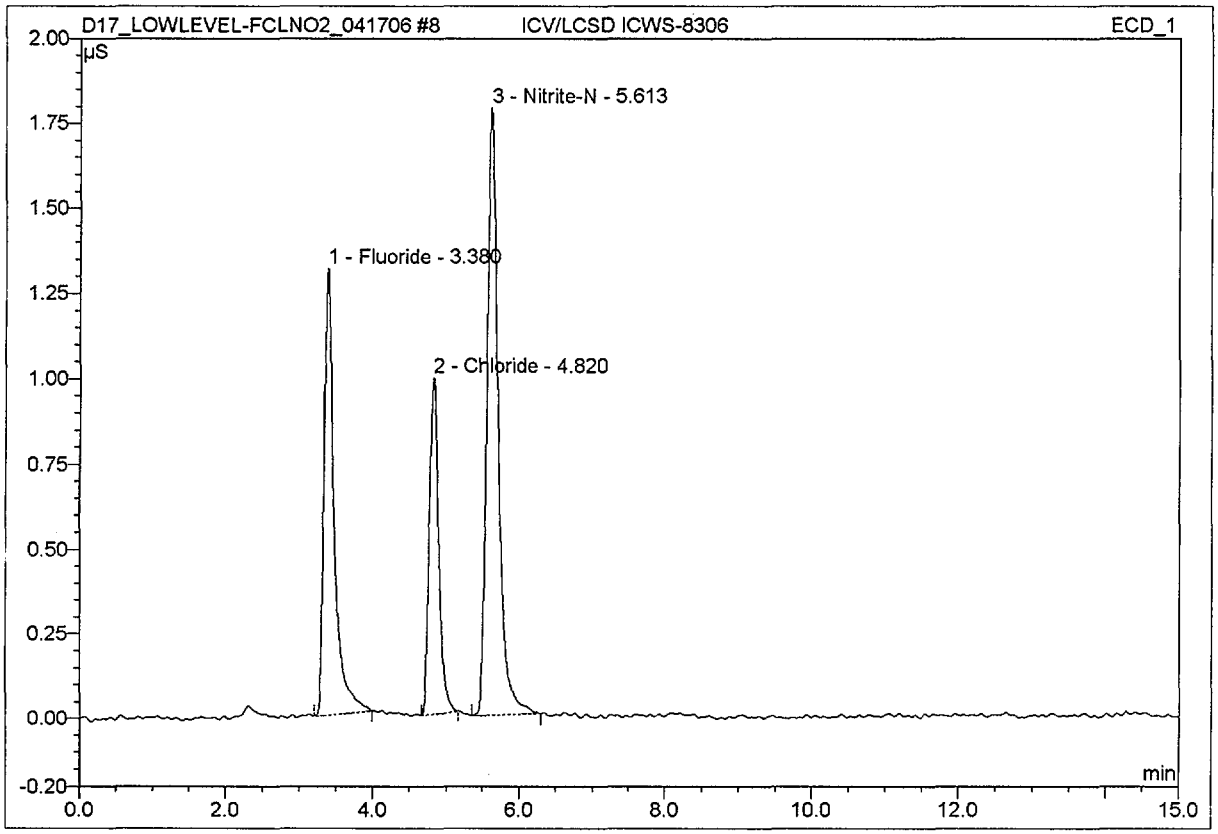

| No. | Ret.Time (min.) | Peak Name | Height (uS) | Area µS*min | Rel.Area (%) | Amount (mg/L) | Peak Type |
|---|---|---|---|---|---|---|---|
| 1 | 3.38 | Fluoride | 1.30564 | 0.206 | 30.35 | 0.4627 | BMB |
| 2 | 4.81 | Chloride | 0.98396 | 0.149 | 21.96 | 0.5017 | BMB |
| 3 | 5.61 | Nitrite-N | 1.77445 | 0.324 | 47.69 | 0.4987 | BMB |

Height

H33851AC

# 8 ICV/LCSD ICWS-8306

| | | | |
|---|---|---|---|
| *Sample Name:* | **ICV/LCSD ICWS-8306** | *Injection Volume:* | **50.0** |
| *Vial Number:* | **1207** | *Channel:* | **ECD_1** |
| *Sample Type:* | **unknown** | *Wavelength:* | **n.a.** |
| *Control Program:* | **AS14A ANIONS METHOD** | *Bandwidth:* | **n.a.** |
| *Quantif. Method:* | **AS4A-SC ANION METHOD** | *Dilution Factor:* | **1.0000** |
| *Recording Time:* | **4/17/2006 11:11** | *Sample Weight:* | **1.0000** |
| *Run Time (min):* | **15.00** | *Sample Amount:* | **1.0000** |



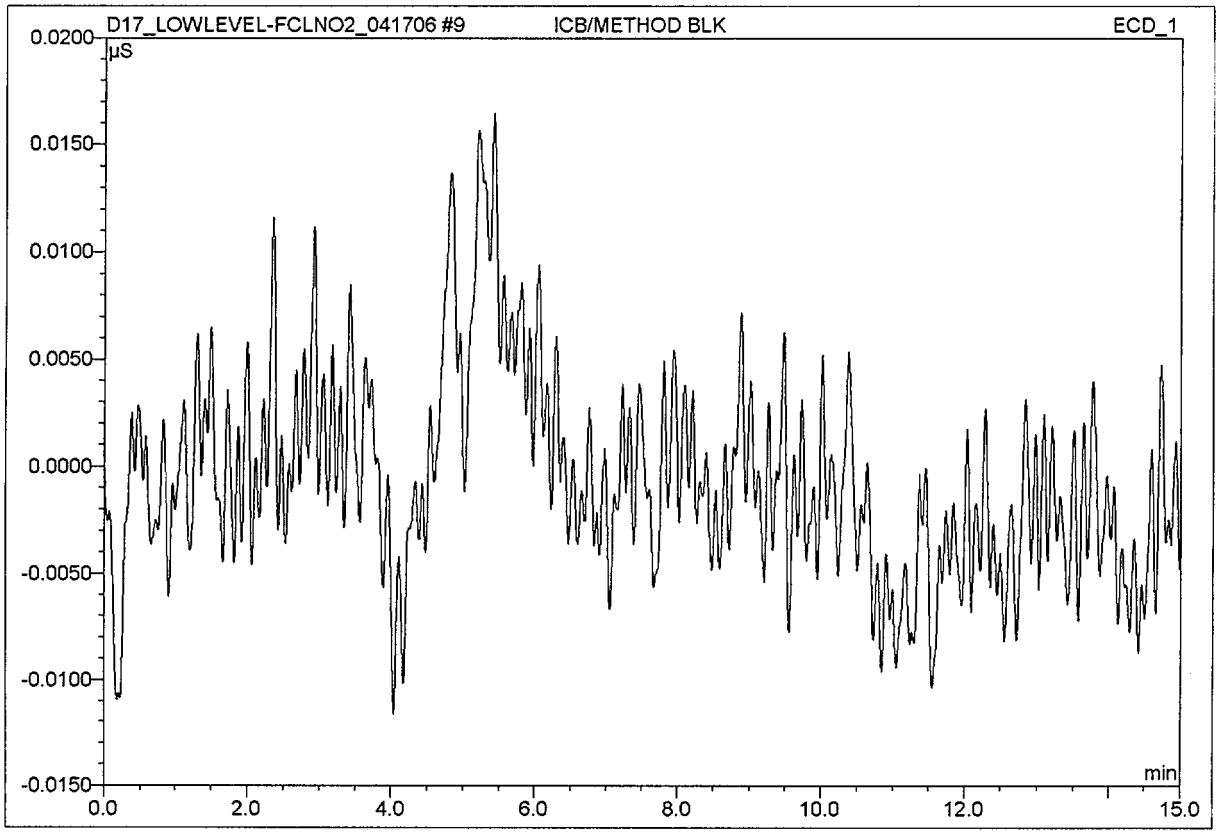

| No. | Ret.Time (min.) | Peak Name | Height (uS) | Area µS*min | Rel.Area (%) | Amount (mg/L) | Peak Type |
|---|---|---|---|---|---|---|---|
| 1 | 3.38 | Fluoride | 1.31388 | 0.211 | 30.81 | 0.4655 | BMB |
| 2 | 4.82 | Chloride | 0.98979 | 0.148 | 21.57 | 0.5047 | BMB |
| 3 | 5.61 | Nitrite-N | 1.78550 | 0.326 | 47.62 | 0.5017 | BMB |

Height

H33P51AD

# 9 ICB/METHOD BLK

| | | | |
|---|---|---|---|
| *Sample Name:* | **ICB/METHOD BLK** | *Injection Volume:* | **50.0** |
| *Vial Number:* | **1210** | *Channel:* | **ECD_1** |
| *Sample Type:* | **unknown** | *Wavelength:* | **n.a.** |
| *Control Program:* | **AS14A ANIONS METHOD** | *Bandwidth:* | **n.a.** |
| *Quantif. Method:* | **AS4A-SC ANION METHOD** | *Dilution Factor:* | **1.0000** |
| *Recording Time:* | **4/17/2006 11:28** | *Sample Weight:* | **1.0000** |
| *Run Time (min):* | **15.00** | *Sample Amount:* | **1.0000** |

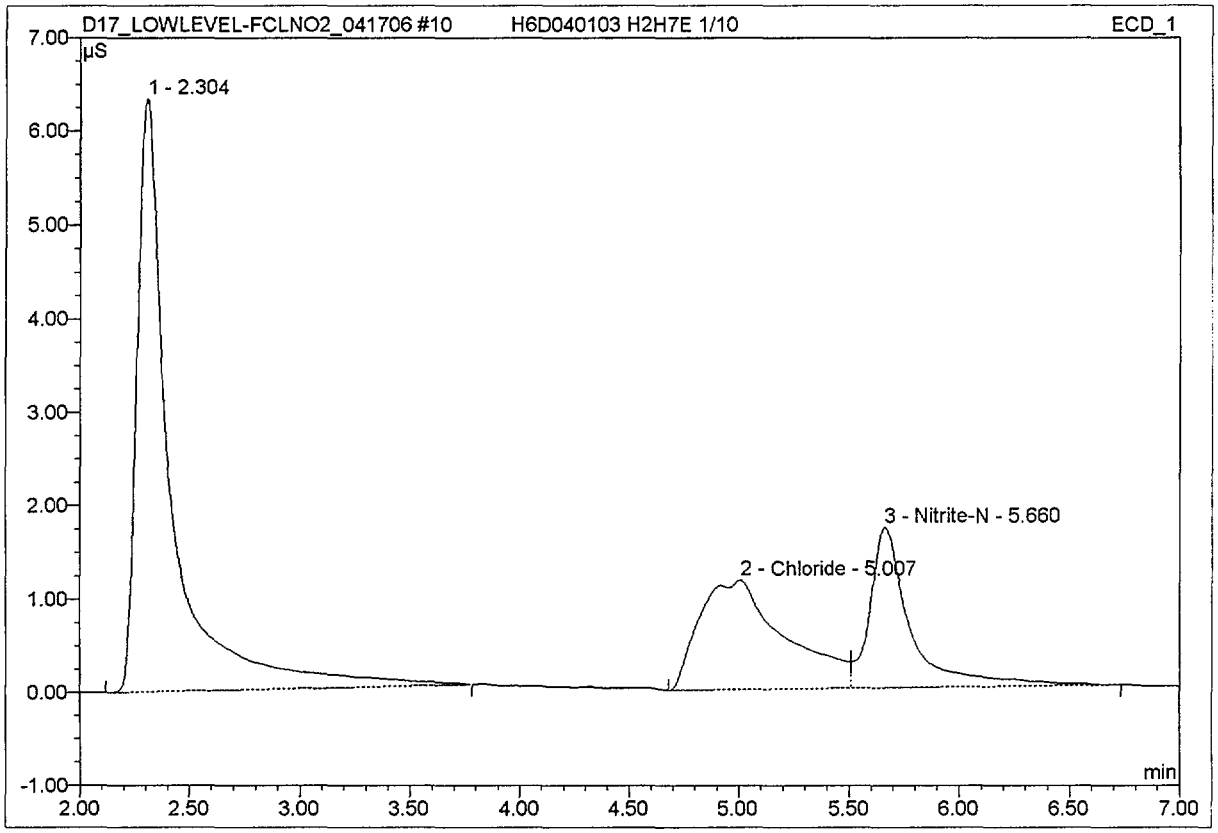



| No. | Ret.Time (min.) | Peak Name | Height (uS) | Area µS*min | Rel.Area (%) | Amount (mg/L) | Peak Type |
|---|---|---|---|---|---|---|---|

ND

# 10 H6D040103 H2H7E 1/10

| | | | |
|---|---|---|---|
| *Sample Name:* | **H6D040103 H2H7E 1/10** | *Injection Volume:* | **50.0** |
| *Vial Number:* | **1210** | *Channel:* | **ECD_1** |
| *Sample Type:* | **unknown** | *Wavelength:* | **n.a.** |
| *Control Program:* | **AS14A ANIONS_CI2 METHOD** | *Bandwidth:* | **n.a.** |
| *Quantif. Method:* | **AS4A-SC ANION METHOD** | *Dilution Factor:* | **10.0000** |
| *Recording Time:* | **4/17/2006 12:03** | *Sample Weight:* | **1.0000** |
| *Run Time (min):* | **30.00** | *Sample Amount:* | **1.0000** |



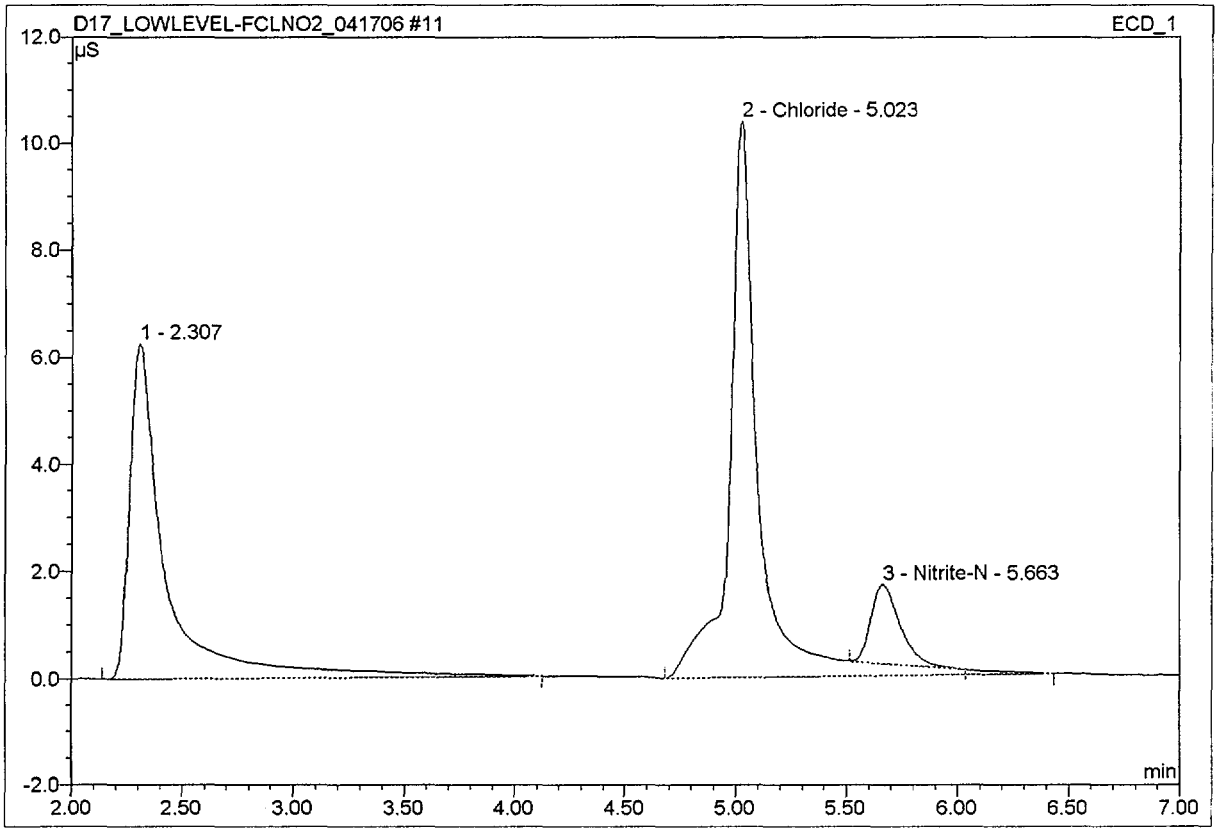

| No. | Ret.Time (min.) | Peak Name | Height (uS) | Area µS*min | Rel.Area (%) | Amount (mg/L) | Peak Type |
|---|---|---|---|---|---|---|---|
| 1 | 2.30 | n.a. | 6.32588 | 1.159 | 1.78 | n.a. | BMB |
| 2 | 5.01 | Chloride | 1.16884 | 0.526 | 0.81 | 5.9653 | BM |
| 3 | 5.66 | Nitrite-N | 1.71615 | 0.368 | 0.57 | 4.8261 | MB |
| 4 | 7.80 | n.a. | 0.08985 | 0.019 | 0.03 | n.a. | BMB |
| 5 | 12.50 | n.a. | 17.64772 | 5.861 | 9.00 | n.a. | BMB |
| 6 | 22.67 | n.a. | 60.17590 | 57.216 | 87.82 | n.a. | BMB |

Height

NOT USED

# 11 H6D040103 H2H7E MS 1/10 3PPM

| | | | |
|---|---|---|---|
| *Sample Name:* | **H6D040103 H2H7E MS 1/10 3PPM** | *Injection Volume:* | **50.0** |
| *Vial Number:* | **1243** | *Channel:* | **ECD_1** |
| *Sample Type:* | **unknown** | *Wavelength:* | **n.a.** |
| *Control Program:* | **AS14A ANIONS_CI2 METHOD** | *Bandwidth:* | **n.a.** |
| *Quantif. Method:* | **AS4A-SC ANION METHOD** | *Dilution Factor:* | **10.0000** |
| *Recording Time:* | **4/17/2006 12:36** | *Sample Weight:* | **1.0000** |
| *Run Time (min):* | **30.00** | *Sample Amount:* | **1.0000** |

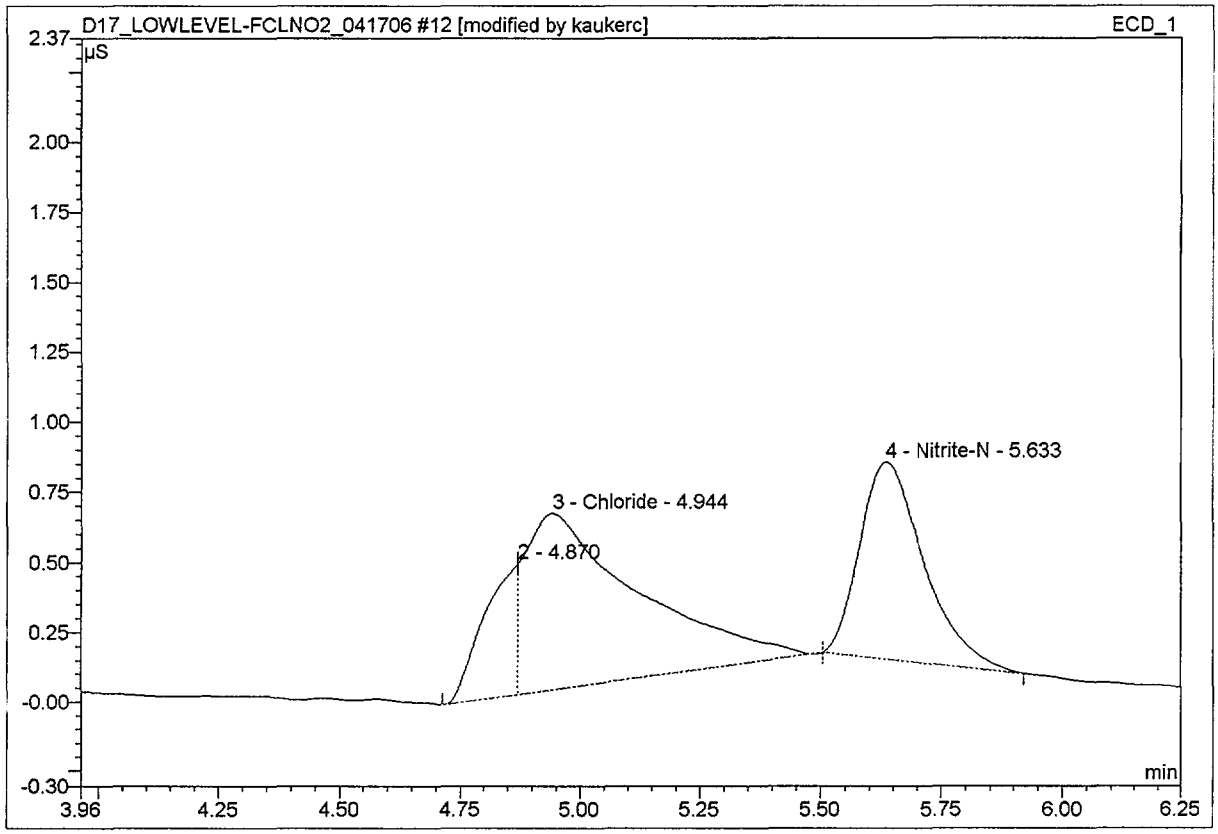



| No. | Ret.Time (min.) | Peak Name | Height (uS) | Area µS*min | Rel.Area (%) | Amount (mg/L) | Peak Type |
|---|---|---|---|---|---|---|---|
| 1 | 2.31 | n.a. | 6.24617 | 1.177 | 1.78 | n.a. | BMB |
| 2 | 5.02 | Chloride | 10.36808 | 1.608 | 2.44 | 50.7813 | BMB |
| 3 | 5.66 | Nitrite-N | 1.46655 | 0.222 | 0.34 | 4.1366 | Rd |
| 4 | 7.82 | n.a. | 0.08803 | 0.018 | 0.03 | n.a. | BMB |
| 5 | 12.50 | n.a. | 17.50407 | 5.816 | 8.81 | n.a. | BMB |
| 6 | 22.67 | n.a. | 60.17407 | 57.159 | 86.60 | n.a. | BMB |

Spiked over range not used / spiked at 3ppm Top Std is 1.0 ppm

# 12 H6D040103 H2H7E 1/20

| | | | |
|---|---|---|---|
| *Sample Name:* | **H6D040103 H2H7E 1/20** | *Injection Volume:* | **50.0** |
| *Vial Number:* | **1244** | *Channel:* | **ECD_1** |
| *Sample Type:* | **unknown** | *Wavelength:* | **n.a.** |
| *Control Program:* | **AS14A ANIONS_CI2 METHOD** | *Bandwidth:* | **n.a.** |
| *Quantif. Method:* | **AS4A-SC ANION METHOD** | *Dilution Factor:* | **20.0000** |
| *Recording Time:* | **4/17/2006 13:08** | *Sample Weight:* | **1.0000** |
| *Run Time (min):* | **30.00** | *Sample Amount:* | **1.0000** |



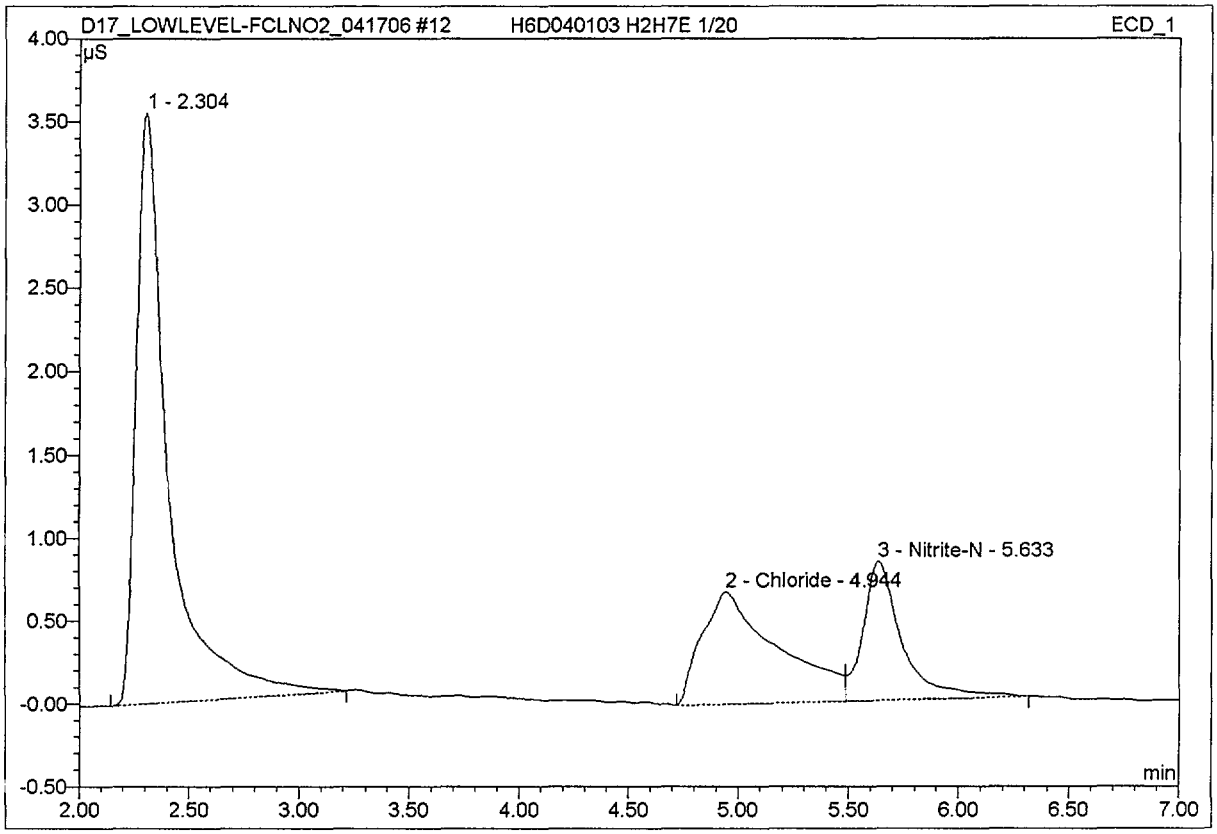

| No. | Ret.Time (min.) | Peak Name | Height (uS) | Area µS*min | Rel.Area (%) | Amount (mg/L) | Peak Type |
|---|---|---|---|---|---|---|---|
| 1 | 2.30 | n.a. | 3.54845 | 0.611 | 1.01 | n.a. | BMB |
| 2 | 4.87 | n.a. | 0.46900 | 0.038 | 0.06 | n.a. | BM * |
| 3 | 4.94 | Chloride | 0.62954 | 0.170 | 0.28 | 6.3867 | Mb* |
| 4 | 5.63 | Nitrite-N | 0.70159 | 0.108 | 0.18 | 3.9938 | bMB* |
| 5 | 12.50 | n.a. | 8.66041 | 2.925 | 4.82 | n.a. | BMB |
| 6 | 22.66 | n.a. | 59.97437 | 56.801 | 93.65 | n.a. | BMB |

Height

manual integration
CWK Split Peak / Baseline
4/17/06

# 12 H6D040103 H2H7E 1/20

| | | | |
|---|---|---|---|
| *Sample Name:* | **H6D040103 H2H7E 1/20** | *Injection Volume:* | **50.0** |
| *Vial Number:* | **1244** | *Channel:* | **ECD_1** |
| *Sample Type:* | **unknown** | *Wavelength:* | **n.a.** |
| *Control Program:* | **AS14A ANIONS_CI2 METHOD** | *Bandwidth:* | **n.a.** |
| *Quantif. Method:* | **AS4A-SC ANION METHOD** | *Dilution Factor:* | **20.0000** |
| *Recording Time:* | **4/17/2006 13:08** | *Sample Weight:* | **1.0000** |
| *Run Time (min):* | **30.00** | *Sample Amount:* | **1.0000** |



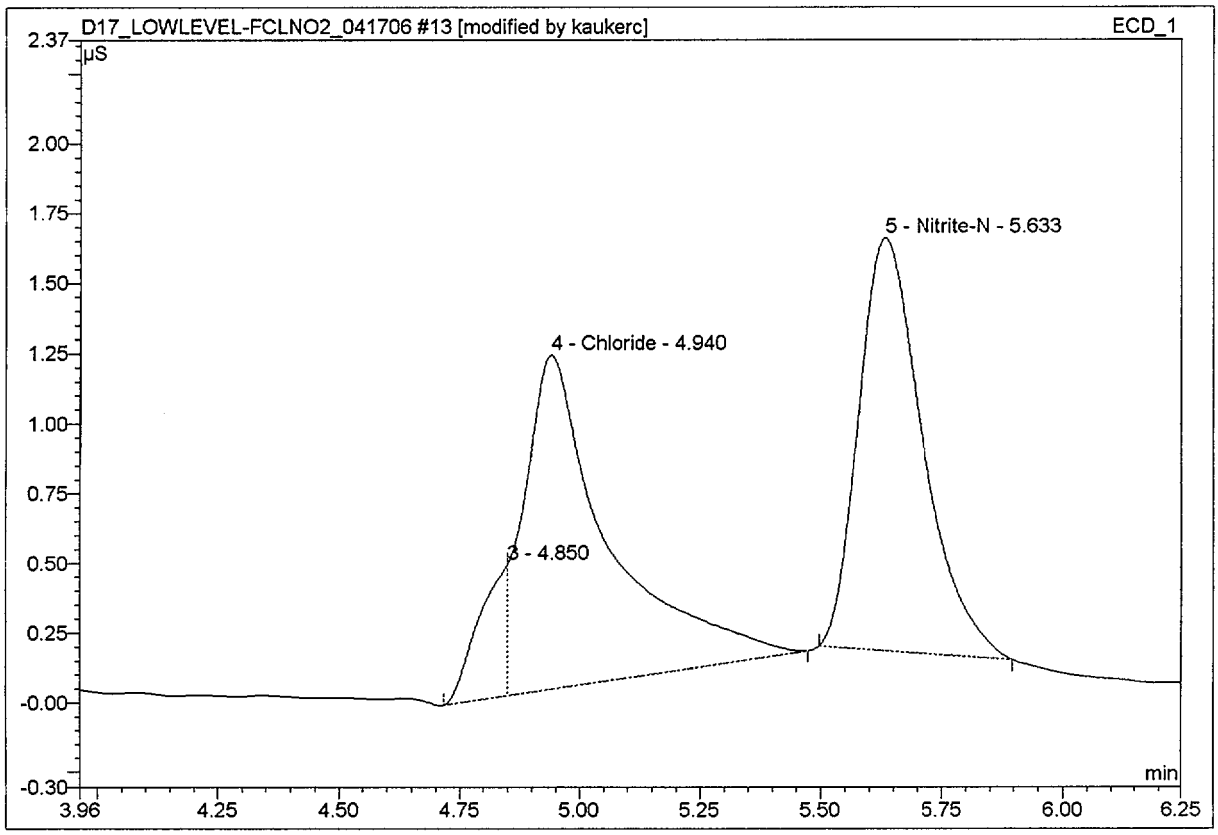

| No. | Ret.Time (min.) | Peak Name | Height (uS) | Area µS*min | Rel.Area (%) | Amount (mg/L) | Peak Type |
|---|---|---|---|---|---|---|---|
| 1 | 2.30 | n.a. | 3.54845 | 0.611 | 1.01 | n.a. | BMB |
| 2 | 4.94 | Chloride | 0.67601 | 0.269 | 0.44 | 6.8659 | BM |
| 3 | 5.63 | Nitrite-N | 0.83419 | 0.171 | 0.28 | 4.7415 | MB |
| 4 | 12.50 | n.a. | 8.66041 | 2.925 | 4.81 | n.a. | BMB |
| 5 | 22.66 | n.a. | 59.97437 | 56.801 | 93.46 | n.a. | BMB |

original

Height

# 13 H6D040103 H2H7E MS 1/20 0.2PPM

| | | | |
|---|---|---|---|
| *Sample Name:* | **H6D040103 H2H7E MS 1/20 0.2PPM** | *Injection Volume:* | **50.0** |
| *Vial Number:* | **1245** | *Channel:* | **ECD_1** |
| *Sample Type:* | **unknown** | *Wavelength:* | **n.a.** |
| *Control Program:* | **AS14A ANIONS_CI2 METHOD** | *Bandwidth:* | **n.a.** |
| *Quantif. Method:* | **AS4A-SC ANION METHOD** | *Dilution Factor:* | **20.0000** |
| *Recording Time:* | **4/17/2006 13:40** | *Sample Weight:* | **1.0000** |
| *Run Time (min):* | **30.00** | *Sample Amount:* | **1.0000** |




| No. | Ret.Time (min.) | Peak Name | Height (uS) | Area µS*min | Rel.Area (%) | Amount (mg/L) | Peak Type |
|---|---|---|---|---|---|---|---|
| 1 | 2.30 | n.a. | 3.58462 | 0.614 | 0.99 | n.a. | BMB |
| 2 | 3.37 | Fluoride | 0.40949 | 0.077 | 0.12 | 3.0270 | BMB |
| 3 | 4.85 | n.a. | 0.47075 | 0.032 | 0.05 | n.a. | BM * |
| 4 | 4.94 | Chloride | 1.19454 | 0.244 | 0.40 | 12.1939 | MB* |
| 5 | 5.63 | Nitrite-N | 1.47472 | 0.227 | 0.37 | 8.3185 | BMB* |
| 6 | 12.51 | n.a. | 8.78460 | 2.964 | 4.79 | n.a. | BMB |
| 7 | 22.67 | n.a. | 60.59387 | 57.674 | 93.28 | n.a. | BMB |

108%R

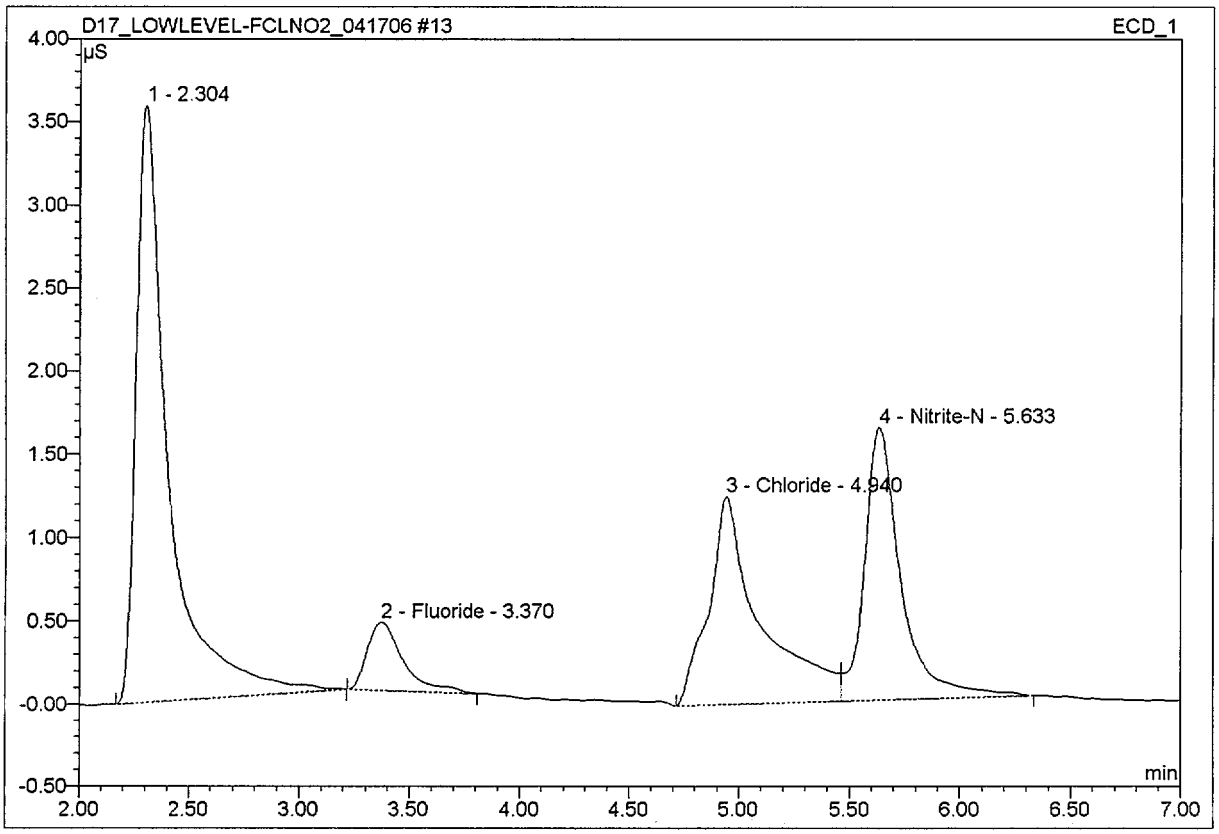
Height

manual integration
cwk 4/17/06
Split Peak / Baseline

12.1939 - 6.3867 = 5.8072 / 4 = 145%R

# 13 H6D040103 H2H7E MS 1/20 0.2PPM

| | | | |
|---|---|---|---|
| *Sample Name:* | **H6D040103 H2H7E MS 1/20 0.2PPM** | *Injection Volume:* | **50.0** |
| *Vial Number:* | **1245** | *Channel:* | **ECD_1** |
| *Sample Type:* | **unknown** | *Wavelength:* | **n.a.** |
| *Control Program:* | **AS14A ANIONS_CI2 METHOD** | *Bandwidth:* | **n.a.** |
| *Quantif. Method:* | **AS4A-SC ANION METHOD** | *Dilution Factor:* | **20.0000** |
| *Recording Time:* | **4/17/2006 13:40** | *Sample Weight:* | **1.0000** |
| *Run Time (min):* | **30.00** | *Sample Amount:* | **1.0000** |



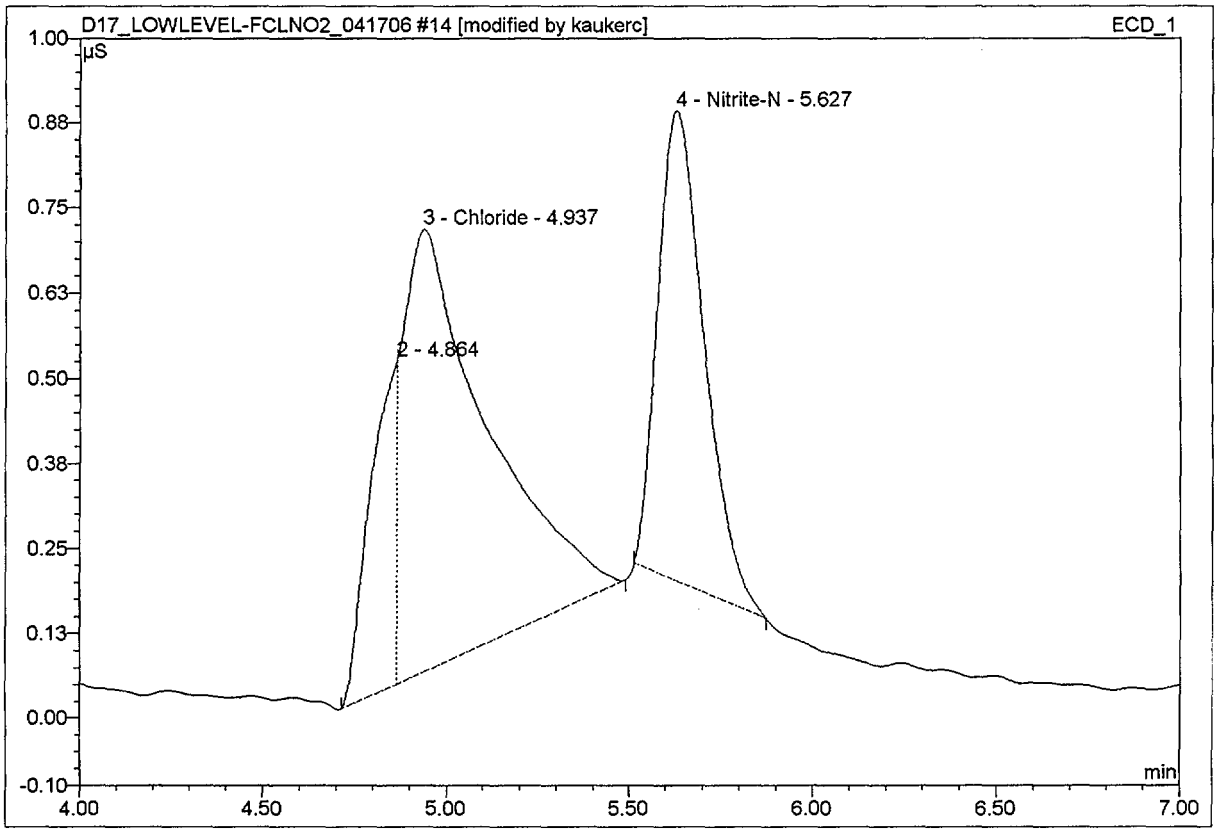

| No. | Ret.Time (min.) | Peak Name | Height (uS) | Area µS*min | Rel.Area (%) | Amount (mg/L) | Peak Type |
|---|---|---|---|---|---|---|---|
| 1 | 2.30 | n.a. | 3.58462 | 0.614 | 0.99 | n.a. | BMB |
| 2 | 3.37 | Fluoride | 0.40949 | 0.077 | 0.12 | 3.0270 | BMB |
| 3 | 4.94 | Chloride | 1.24454 | 0.338 | 0.55 | 12.7059 | BM |
| 4 | 5.63 | Nitrite-N | 1.63509 | 0.312 | 0.50 | 9.2053 | MB |
| 5 | 12.51 | n.a. | 8.78460 | 2.964 | 4.78 | n.a. | BMB |
| 6 | 22.67 | n.a. | 60.59387 | 57.674 | 93.05 | n.a. | BMB |

RW 4/26/05
~~75.7~~ 6R

Height original

# 14 H6D040103 H2H7E DUP 1/20

| | | | |
|---|---|---|---|
| *Sample Name:* | **H6D040103 H2H7E DUP 1/20** | *Injection Volume:* | **50.0** |
| *Vial Number:* | **1246** | *Channel:* | **ECD_1** |
| *Sample Type:* | **unknown** | *Wavelength:* | **n.a.** |
| *Control Program:* | **AS14A ANIONS_CI2 METHOD** | *Bandwidth:* | **n.a.** |
| *Quantif. Method:* | **AS4A-SC ANION METHOD** | *Dilution Factor:* | **20.0000** |
| *Recording Time:* | **4/17/2006 14:13** | *Sample Weight:* | **1.0000** |
| *Run Time (min):* | **30.00** | *Sample Amount:* | **1.0000** |

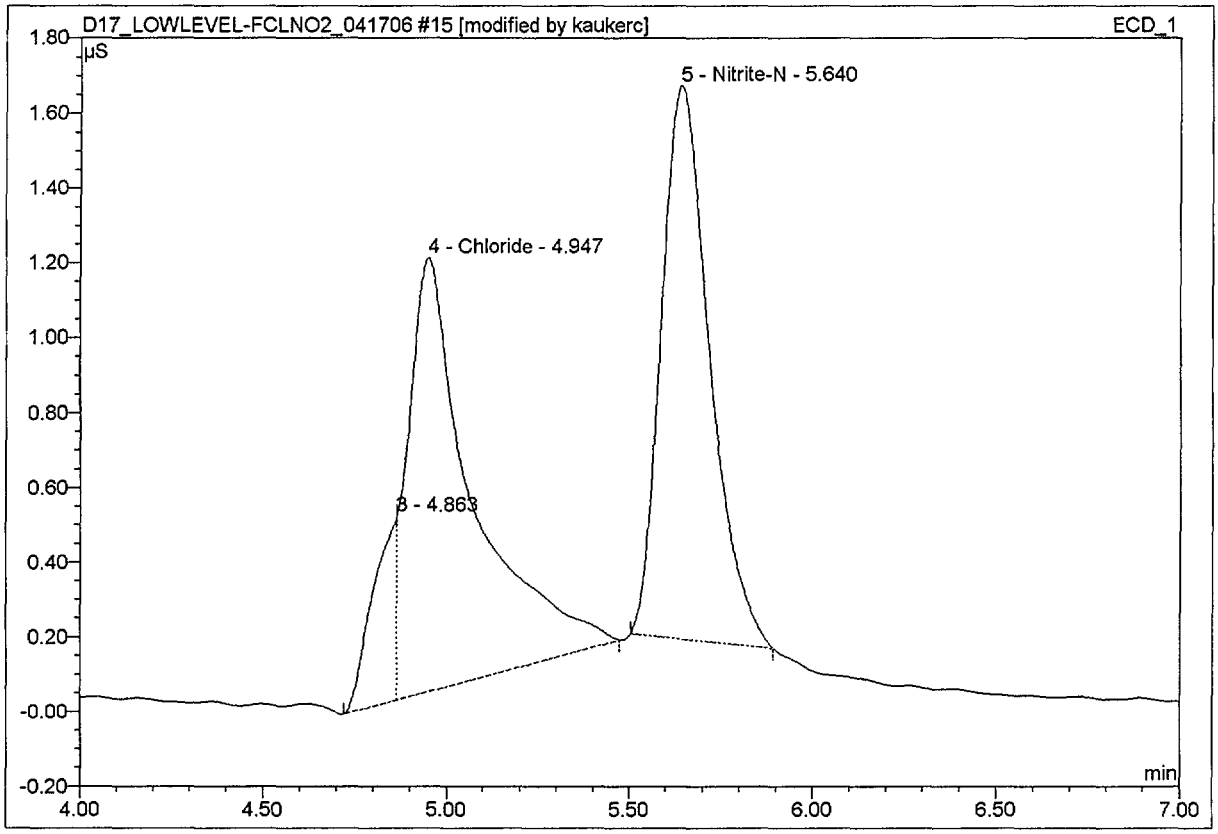



| No. | Ret.Time (min.) | Peak Name | Height (uS) | Area µS*min | Rel.Area (%) | Amount (mg/L) | Peak Type |
|---|---|---|---|---|---|---|---|
| 1 | 2.30 | n.a. | 3.60753 | 0.638 | 1.03 | n.a. | BMB |
| 2 | 4.86 | n.a. | 0.47439 | 0.039 | 0.06 | n.a. | BM * |
| 3 | 4.94 | Chloride | 0.64879 | 0.173 | 0.28 | 6.5852 | MB* |
| 4 | 5.63 | Nitrite-N | 0.68912 | 0.101 | 0.16 | 3.9233 | BMB* |
| 5 | 7.79 | n.a. | 0.04797 | 0.012 | 0.02 | n.a. | BMB |
| 6 | 12.50 | n.a. | 8.78251 | 2.969 | 4.78 | n.a. | BMB |
| 7 | 22.66 | n.a. | 60.97326 | 58.234 | 93.67 | n.a. | BMB |

Height

# 15 H6D040103 H2H7E MSD 0.2 PPM CL

| | | | |
|---|---|---|---|
| *Sample Name:* | **H6D040103 H2H7E MSD 0.2 PPM CL** | *Injection Volume:* | **50.0** |
| *Vial Number:* | **1247** | *Channel:* | **ECD_1** |
| *Sample Type:* | **unknown** | *Wavelength:* | **n.a.** |
| *Control Program:* | **AS14A ANIONS_CI2 METHOD** | *Bandwidth:* | **n.a.** |
| *Quantif. Method:* | **AS4A-SC ANION METHOD** | *Dilution Factor:* | **20.0000** |
| *Recording Time:* | **4/17/2006 14:45** | *Sample Weight:* | **1.0000** |
| *Run Time (min):* | **30.00** | *Sample Amount:* | **1.0000** |




| No. | Ret.Time (min.) | Peak Name | Height (uS) | Area µS*min | Rel.Area (%) | Amount (mg/L) | Peak Type |
|---|---|---|---|---|---|---|---|
| 1 | 2.31 | n.a. | 3.63362 | 0.691 | 1.11 | n.a. | BMB |
| 2 | 3.37 | Fluoride | 0.40048 | 0.074 | 0.12 | 2.9632 | Rd |
| 3 | 4.86 | n.a. | 0.49281 | 0.036 | 0.06 | n.a. | BM * |
| 4 | 4.95 | Chloride | 1.15882 | 0.240 | 0.39 | 11.8279 | MB* |
| 5 | 5.64 | Nitrite-N | 1.47644 | 0.226 | 0.36 | 8.3281 | BMB* |
| 6 | 7.80 | n.a. | 0.05431 | 0.012 | 0.02 | n.a. | BMB |
| 7 | 12.51 | n.a. | 8.83485 | 2.984 | 4.80 | n.a. | BMB |
| 8 | 22.68 | n.a. | 60.58071 | 57.862 | 93.14 | n.a. | BMB |

Height

Manual integration

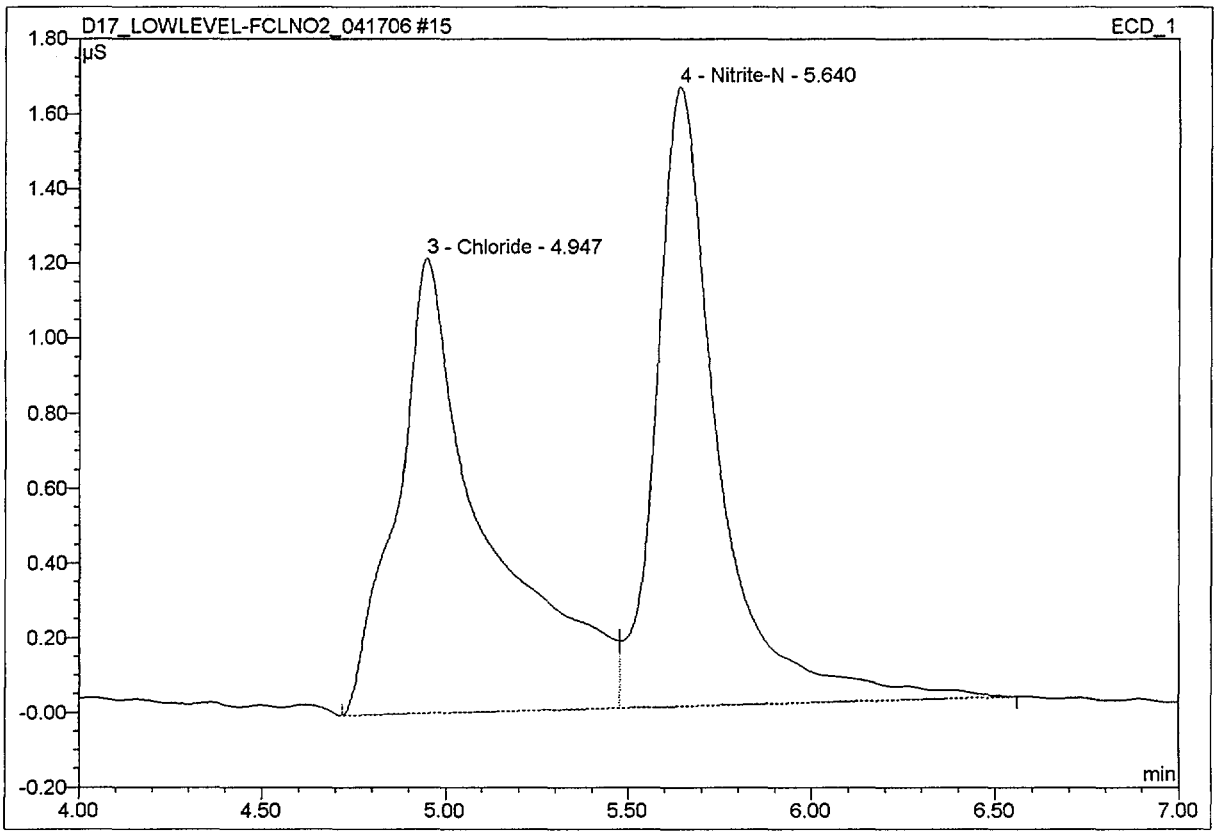
11.8279 - 6.3867 = 5.4412 | 4 = 136%R



awk Split Peak 4/25/06

# 15 H6D040103 H2H7E MSD 0.2 PPM CL

| | | | |
|---|---|---|---|
| *Sample Name:* | **H6D040103 H2H7E MSD 0.2 PPM CL** | *Injection Volume:* | **50.0** |
| *Vial Number:* | **1247** | *Channel:* | **ECD_1** |
| *Sample Type:* | **unknown** | *Wavelength:* | **n.a.** |
| *Control Program:* | **AS14A ANIONS_CI2 METHOD** | *Bandwidth:* | **n.a.** |
| *Quantif. Method:* | **AS4A-SC ANION METHOD** | *Dilution Factor:* | **20.0000** |
| *Recording Time:* | **4/17/2006 14:45** | *Sample Weight:* | **1.0000** |
| *Run Time (min):* | **30.00** | *Sample Amount:* | **1.0000** |

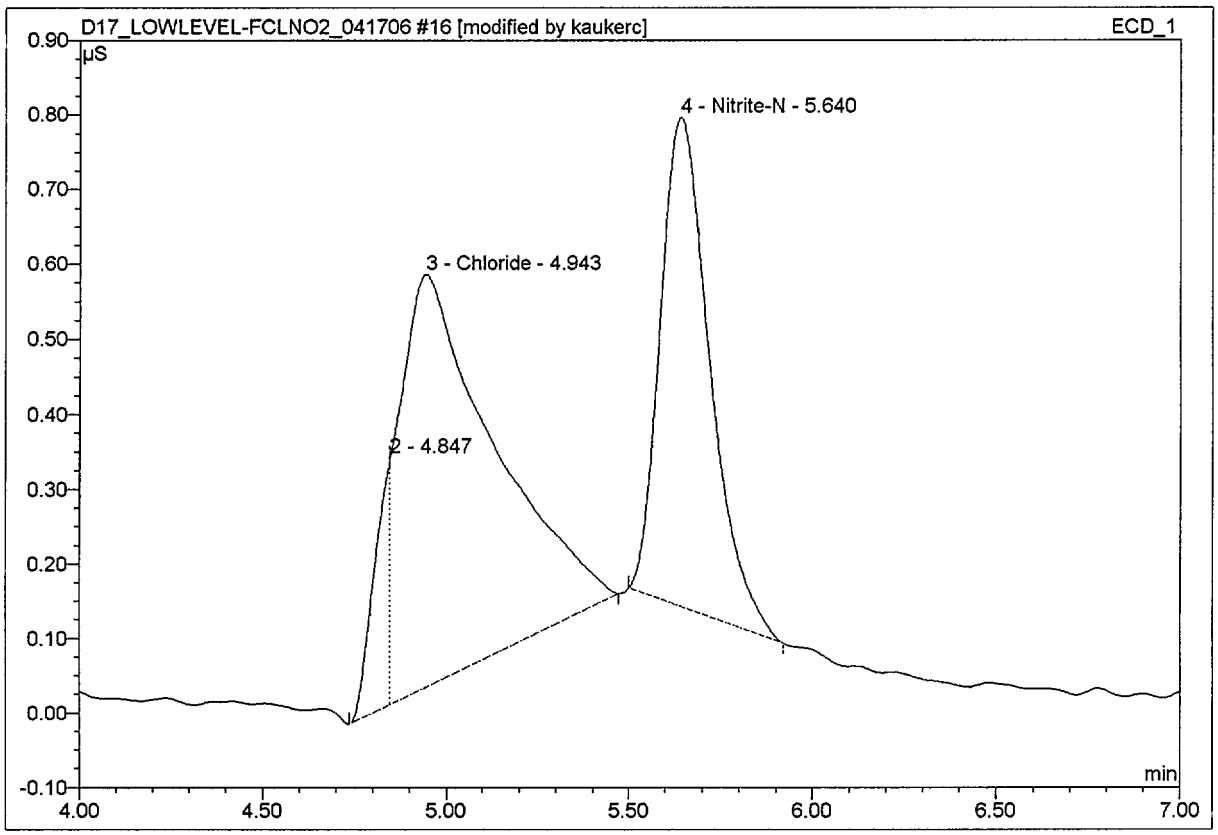



| No. | Ret.Time (min.) | Peak Name | Height (uS) | Area µS*min | Rel.Area (%) | Amount (mg/L) | Peak Type |
|---|---|---|---|---|---|---|---|
| 1 | 2.31 | n.a. | 3.63362 | 0.691 | 1.11 | n.a. | BMB |
| 2 | 3.37 | Fluoride | 0.40048 | 0.074 | 0.12 | 2.9632 | Rd |
| 3 | 4.95 | Chloride | 1.21367 | 0.346 | 0.55 | 12.3898 | BM |
| 4 | 5.64 | Nitrite-N | 1.65457 | 0.329 | 0.53 | 9.3128 | MB |
| 5 | 7.80 | n.a. | 0.05431 | 0.012 | 0.02 | n.a. | BMB |
| 6 | 12.51 | n.a. | 8.83485 | 2.984 | 4.79 | n.a. | BMB |
| 7 | 22.68 | n.a. | 60.58071 | 57.862 | 92.88 | n.a. | BMB |

Height original

# 16 H6D040103 H2H7K 1/20

| | | | |
|---|---|---|---|
| *Sample Name:* | **H6D040103 H2H7K 1/20** | *Injection Volume:* | **50.0** |
| *Vial Number:* | **1248** | *Channel:* | **ECD_1** |
| *Sample Type:* | **unknown** | *Wavelength:* | **n.a.** |
| *Control Program:* | **AS14A ANIONS_CI2 METHOD** | *Bandwidth:* | **n.a.** |
| *Quantif. Method:* | **AS4A-SC ANION METHOD** | *Dilution Factor:* | **20.0000** |
| *Recording Time:* | **4/17/2006 15:18** | *Sample Weight:* | **1.0000** |
| *Run Time (min):* | **30.00** | *Sample Amount:* | **1.0000** |



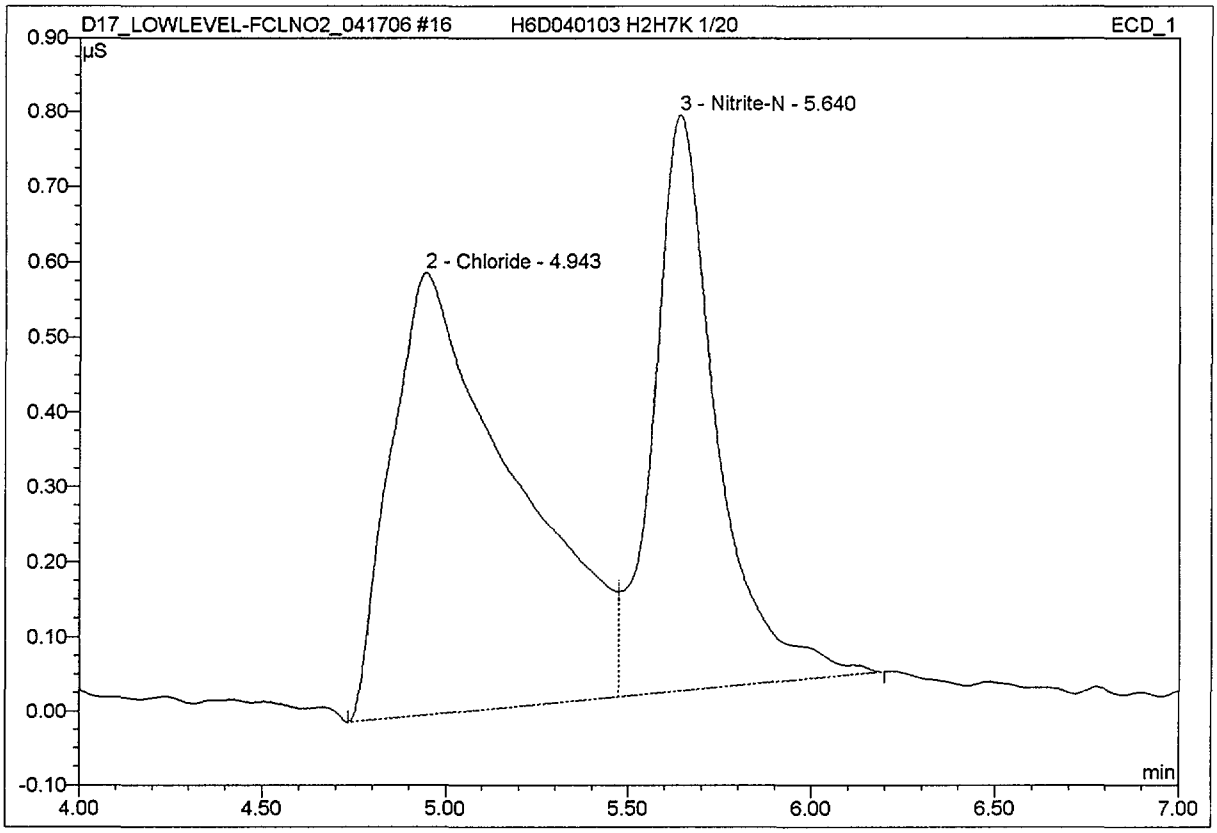

| No. | Ret.Time (min.) | Peak Name | Height (uS) | Area µS*min | Rel.Area (%) | Amount (mg/L) | Peak Type |
|---|---|---|---|---|---|---|---|
| 1 | 2.31 | n.a. | 3.12987 | 0.567 | 0.94 | n.a. | BMB |
| 2 | 4.85 | n.a. | 0.33123 | 0.016 | 0.03 | n.a. | BM * |
| 3 | 4.94 | Chloride | 0.55128 | 0.163 | 0.27 | 5.5793 | MB* |
| 4 | 5.64 | Nitrite-N | 0.65313 | 0.103 | 0.17 | 3.7199 | BMB* |
| 5 | 7.80 | n.a. | 0.06379 | 0.015 | 0.02 | n.a. | BMB |
| 6 | 12.52 | n.a. | 5.68057 | 1.937 | 3.21 | n.a. | BMB |
| 7 | 22.67 | n.a. | 60.53208 | 57.646 | 95.37 | n.a. | BMB |

manual integration
Split Peak / Baseline
CWK 4/26/06

Height

# 16 H6D040103 H2H7K 1/20

| | | | |
|---|---|---|---|
| *Sample Name:* | **H6D040103 H2H7K 1/20** | *Injection Volume:* | **50.0** |
| *Vial Number:* | **1248** | *Channel:* | **ECD_1** |
| *Sample Type:* | **unknown** | *Wavelength:* | **n.a.** |
| *Control Program:* | **AS14A ANIONS_CI2 METHOD** | *Bandwidth:* | **n.a.** |
| *Quantif. Method:* | **AS4A-SC ANION METHOD** | *Dilution Factor:* | **20.0000** |
| *Recording Time:* | **4/17/2006 15:18** | *Sample Weight:* | **1.0000** |
| *Run Time (min):* | **30.00** | *Sample Amount:* | **1.0000** |

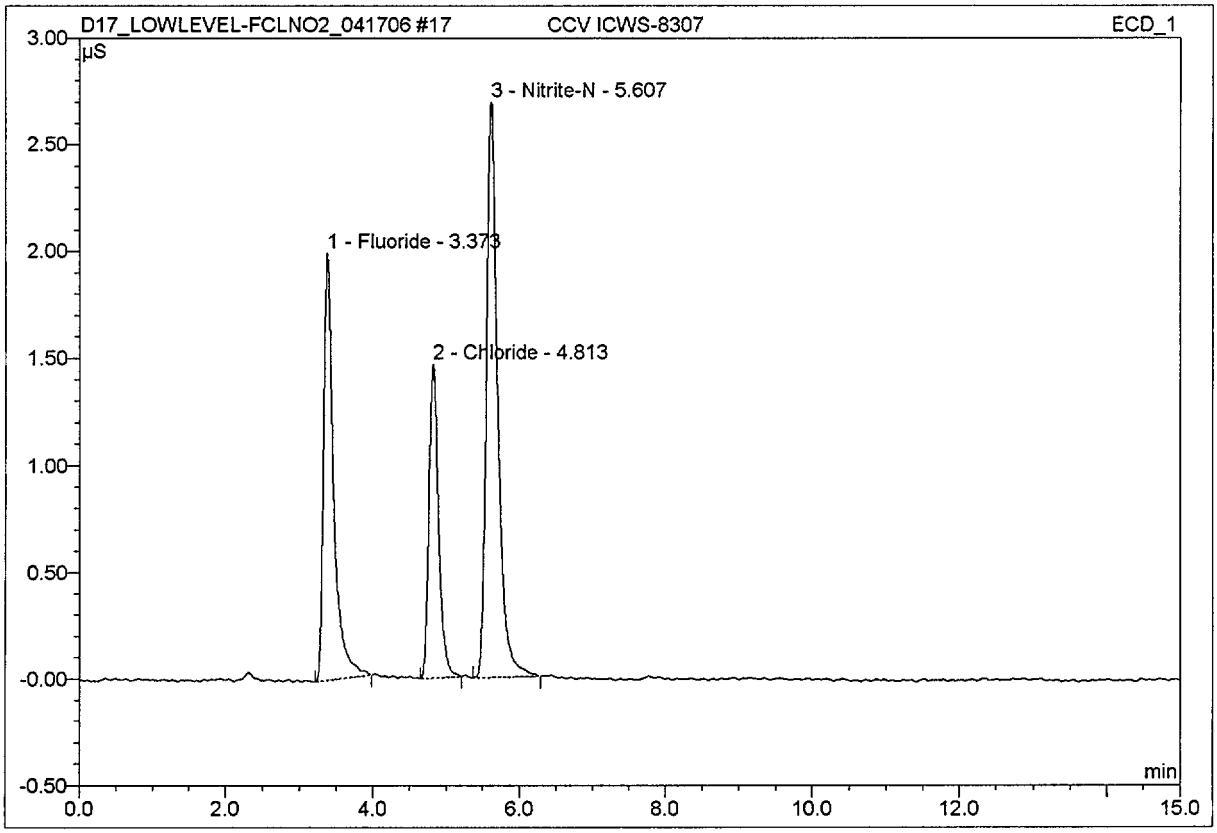



| No. | Ret.Time (min.) | Peak Name | Height (uS) | Area µS*min | Rel.Area (%) | Amount (mg/L) | Peak Type |
|---|---|---|---|---|---|---|---|
| 1 | 2.31 | n.a. | 3.12987 | 0.567 | 0.94 | n.a. | BMB |
| 2 | 4.94 | Chloride | 0.59101 | 0.231 | 0.38 | 5.9894 | BM |
| 3 | 5.64 | Nitrite-N | 0.76864 | 0.155 | 0.26 | 4.3722 | MB |
| 4 | 7.80 | n.a. | 0.06379 | 0.015 | 0.02 | n.a. | BMB |
| 5 | 12.52 | n.a. | 5.68057 | 1.937 | 3.20 | n.a. | BMB |
| 6 | 22.67 | n.a. | 60.53208 | 57.646 | 95.20 | n.a. | BMB |

Height Original

# 17 CCV ICWS-8307

| | | | |
|---|---|---|---|
| *Sample Name:* | **CCV ICWS-8307** | *Injection Volume:* | **50.0** |
| *Vial Number:* | **1249** | *Channel:* | **ECD_1** |
| *Sample Type:* | **unknown** | *Wavelength:* | **n.a.** |
| *Control Program:* | **AS14A ANIONS METHOD** | *Bandwidth:* | **n.a.** |
| *Quantif. Method:* | **AS4A-SC ANION METHOD** | *Dilution Factor:* | **1.0000** |
| *Recording Time:* | **4/17/2006 15:50** | *Sample Weight:* | **1.0000** |
| *Run Time (min):* | **15.00** | *Sample Amount:* | **1.0000** |



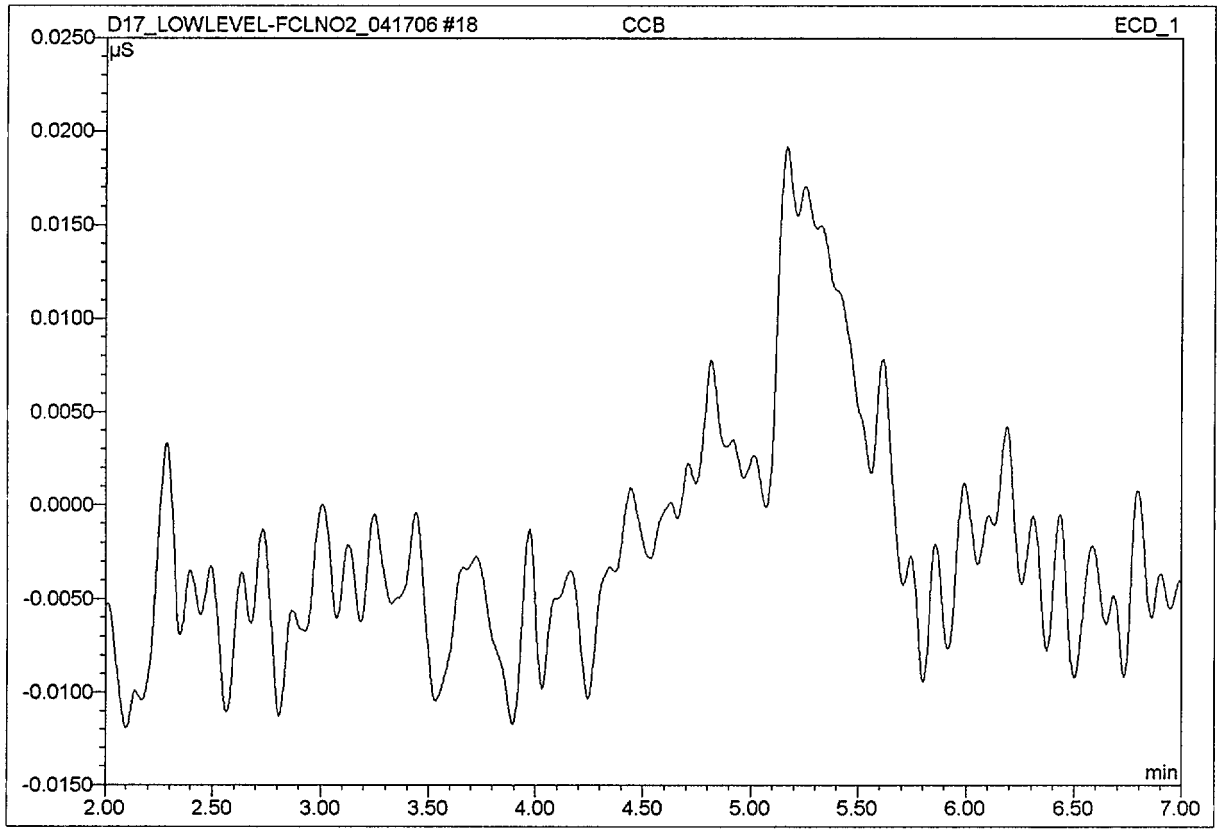

| No. | Ret.Time (min.) | Peak Name | Height (uS) | Area µS*min | Rel.Area (%) | Amount (mg/L) | Peak Type |
|---|---|---|---|---|---|---|---|
| 1 | 3.37 | Fluoride | 1.99924 | 0.314 | 30.71 | 0.6962 | BMB |
| 2 | 4.81 | Chloride | 1.46643 | 0.222 | 21.70 | 0.7487 | BMB |
| 3 | 5.61 | Nitrite-N | 2.69250 | 0.487 | 47.59 | 0.7484 | BMB |

99.89. R

Height

# 18 CCB

| | | | |
|---|---|---|---|
| *Sample Name:* | **CCB** | *Injection Volume:* | **50.0** |
| *Vial Number:* | **1250** | *Channel:* | **ECD_1** |
| *Sample Type:* | **unknown** | *Wavelength:* | **n.a.** |
| *Control Program:* | **AS14A ANIONS METHOD** | *Bandwidth:* | **n.a.** |
| *Quantif. Method:* | **AS4A-SC ANION METHOD** | *Dilution Factor:* | **1.0000** |
| *Recording Time:* | **4/17/2006 16:07** | *Sample Weight:* | **1.0000** |
| *Run Time (min):* | **15.00** | *Sample Amount:* | **1.0000** |

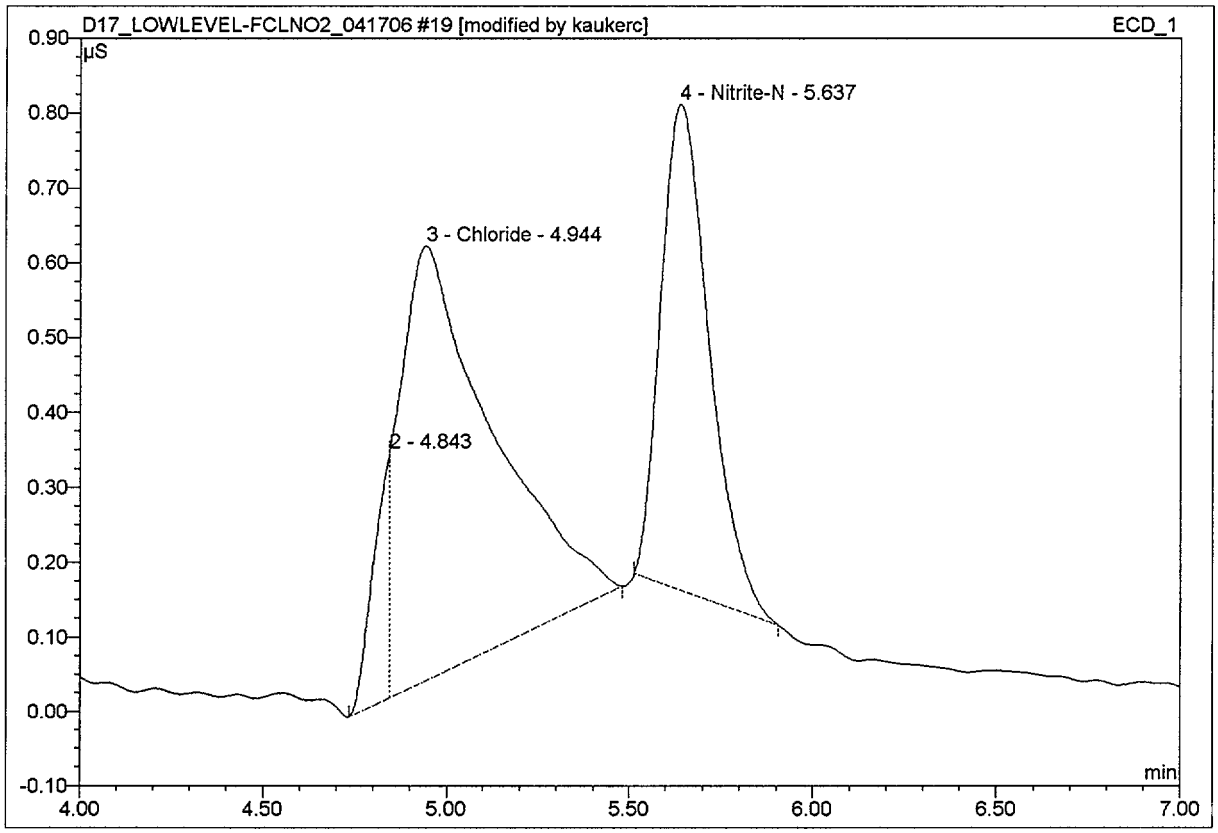



| No. | Ret.Time (min.) | Peak Name | Height (uS) | Area µS*min | Rel.Area (%) | Amount (mg/L) | Peak Type |
|---|---|---|---|---|---|---|---|

ND

# 19 H6D040103 H2H7K DUP 1/20

| | | | |
|---|---|---|---|
| *Sample Name:* | **H6D040103 H2H7K DUP 1/20** | *Injection Volume:* | **50.0** |
| *Vial Number:* | **1251** | *Channel:* | **ECD_1** |
| *Sample Type:* | **unknown** | *Wavelength:* | **n.a.** |
| *Control Program:* | **AS14A ANIONS_CI2 METHOD** | *Bandwidth:* | **n.a.** |
| *Quantif. Method:* | **AS4A-SC ANION METHOD** | *Dilution Factor:* | **20.0000** |
| *Recording Time:* | **4/17/2006 16:25** | *Sample Weight:* | **1.0000** |
| *Run Time (min):* | **30.00** | *Sample Amount:* | **1.0000** |

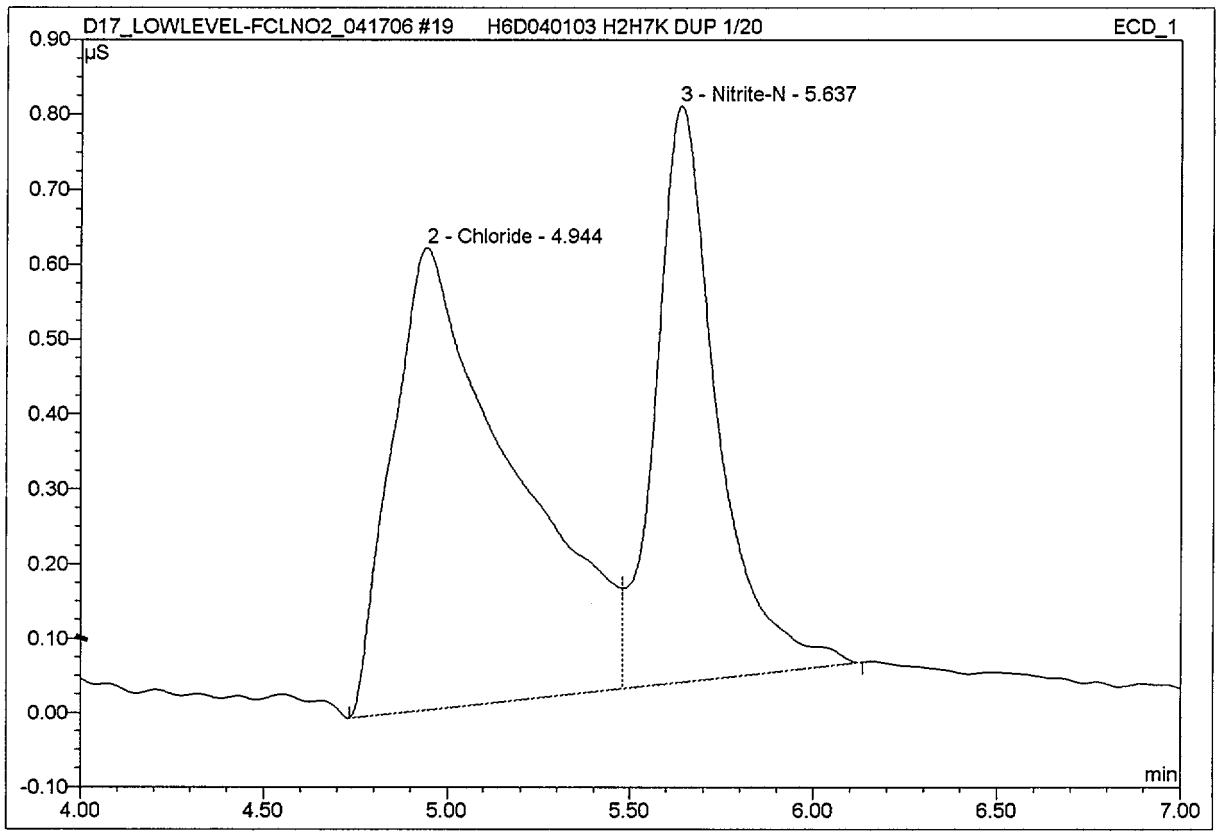



| No. | Ret.Time (min.) | Peak Name | Height (uS) | Area µS*min | Rel.Area (%) | Amount (mg/L) | Peak Type |
|---|---|---|---|---|---|---|---|
| 1 | 2.31 | n.a. | 3.16814 | 0.571 | 0.93 | n.a. | BMB |
| 2 | 4.84 | n.a. | 0.32770 | 0.016 | 0.03 | n.a. | BM * |
| 3 | 4.94 | Chloride | 0.58038 | 0.169 | 0.28 | 5.8796 | MB* |
| 4 | 5.64 | Nitrite-N | 0.64776 | 0.100 | 0.16 | 3.6895 | BMB* |
| 5 | 7.81 | n.a. | 0.06450 | 0.014 | 0.02 | n.a. | BMB |
| 6 | 12.50 | n.a. | 5.73075 | 1.958 | 3.20 | n.a. | BMB |
| 7 | 22.66 | n.a. | 61.23936 | 58.455 | 95.39 | n.a. | BMB |

manual integration
Split Peak / Baseline Height
CWK 4/26/06

# 19 H6D040103 H2H7K DUP 1/20

| | | | |
|---|---|---|---|
| *Sample Name:* | **H6D040103 H2H7K DUP 1/20** | *Injection Volume:* | **50.0** |
| *Vial Number:* | **1251** | *Channel:* | **ECD_1** |
| *Sample Type:* | **unknown** | *Wavelength:* | **n.a.** |
| *Control Program:* | **AS14A ANIONS_CI2 METHOD** | *Bandwidth:* | **n.a.** |
| *Quantif. Method:* | **AS4A-SC ANION METHOD** | *Dilution Factor:* | **20.0000** |
| *Recording Time:* | **4/17/2006 16:25** | *Sample Weight:* | **1.0000** |
| *Run Time (min):* | **30.00** | *Sample Amount:* | **1.0000** |

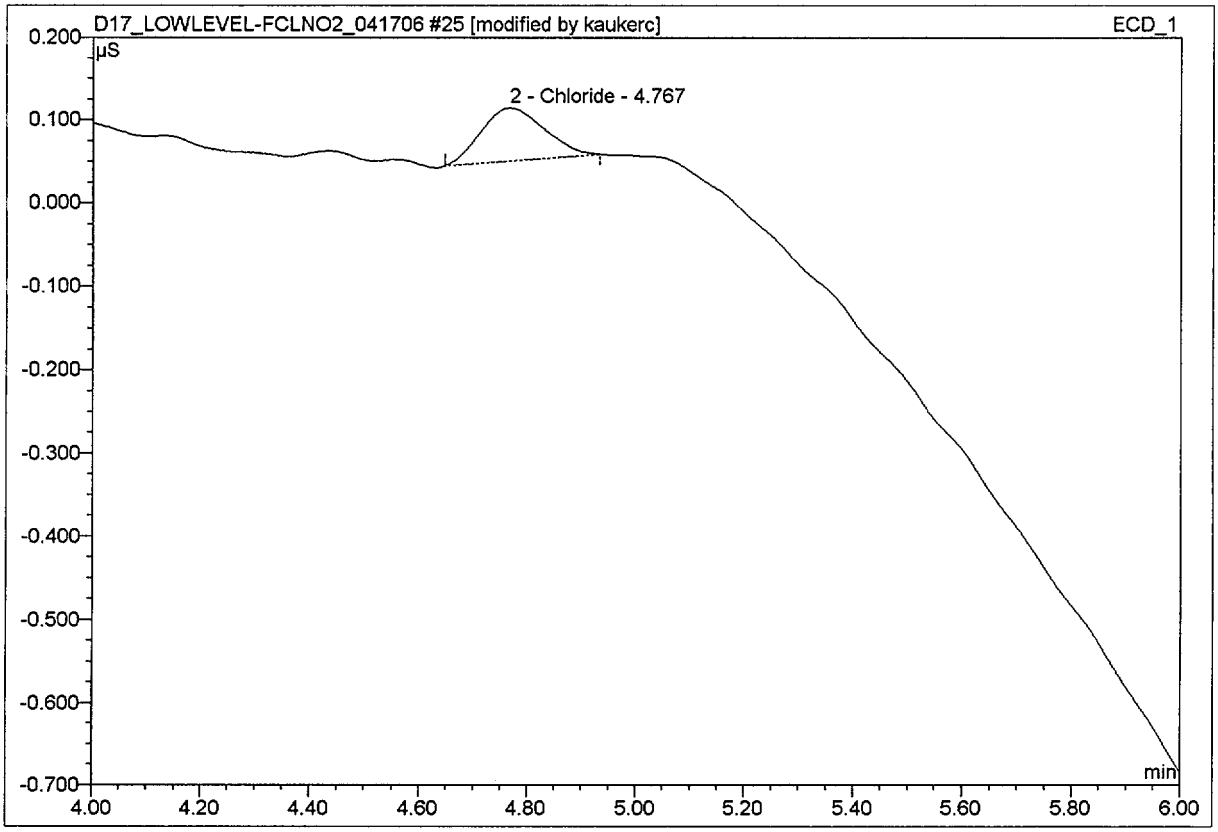



| No. | Ret.Time (min.) | Peak Name | Height (uS) | Area µS*min | Rel.Area (%) | Amount (mg/L) | Peak Type |
|---|---|---|---|---|---|---|---|
| 1 | 2.31 | n.a. | 3.16814 | 0.571 | 0.93 | n.a. | BMB |
| 2 | 4.94 | Chloride | 0.61833 | 0.236 | 0.38 | 6.2712 | BM |
| 3 | 5.64 | Nitrite-N | 0.76986 | 0.152 | 0.25 | 4.3791 | MB |
| 4 | 7.81 | n.a. | 0.06450 | 0.014 | 0.02 | n.a. | BMB |
| 5 | 12.50 | n.a. | 5.73075 | 1.958 | 3.19 | n.a. | BMB |
| 6 | 22.66 | n.a. | 61.23936 | 58.455 | 95.23 | n.a. | BMB |

Height original

# 25 H6D040103 H2H7G 1/10

| | | | |
|---|---|---|---|
| *Sample Name:* | **H6D040103 H2H7G 1/10** | *Injection Volume:* | **50.0** |
| *Vial Number:* | **1253** | *Channel:* | **ECD_1** |
| *Sample Type:* | **unknown** | *Wavelength:* | **n.a.** |
| *Control Program:* | **AS14A ANIONS_CI2 METHOD** | *Bandwidth:* | **n.a.** |
| *Quantif. Method:* | **AS4A-SC ANION METHOD** | *Dilution Factor:* | **10.0000** |
| *Recording Time:* | **4/17/2006 19:39** | *Sample Weight:* | **1.0000** |
| *Run Time (min):* | **30.00** | *Sample Amount:* | **1.0000** |



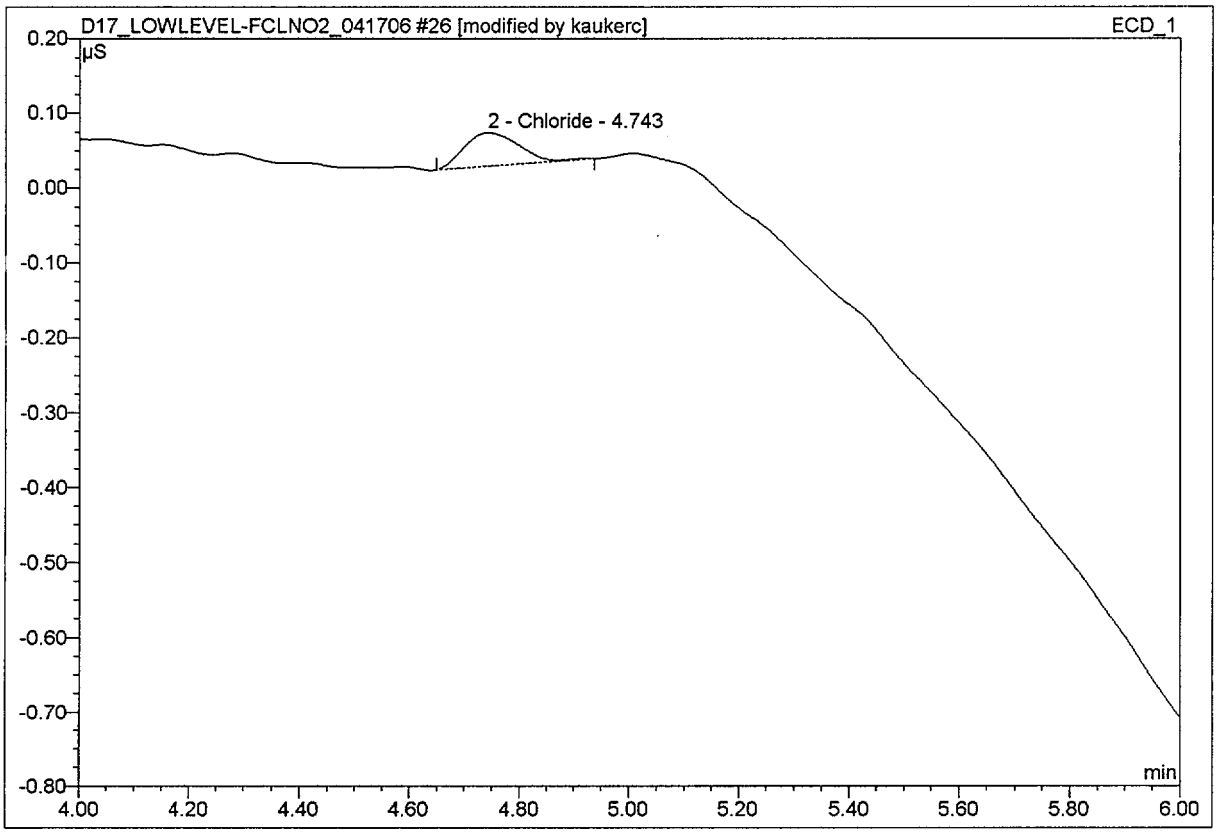

| No. | Ret.Time (min.) | Peak Name | Height (uS) | Area µS*min | Rel.Area (%) | Amount (mg/L) | Peak Type |
|---|---|---|---|---|---|---|---|
| 1 | 2.31 | n.a. | 8.27819 | 1.481 | 2.21 | n.a. | BMB* |
| 2 | 4.77 | Chloride | 0.06389 | 0.009 | 0.01 | 0.2667 | BMB* |
| 3 | 12.44 | n.a. | 1.15545 | 6.854 | 10.23 | n.a. | BMB |
| 4 | 22.60 | n.a. | 61.20676 | 58.682 | 87.55 | n.a. | BMB |

✓ CMPL

Height

# 26 H6D040103 H2H7G DUP 1/10

| | | | |
|---|---|---|---|
| *Sample Name:* | **H6D040103 H2H7G DUP 1/10** | *Injection Volume:* | **50.0** |
| *Vial Number:* | **1253** | *Channel:* | **ECD_1** |
| *Sample Type:* | **unknown** | *Wavelength:* | **n.a.** |
| *Control Program:* | **AS14A ANIONS_CI2 METHOD** | *Bandwidth:* | **n.a.** |
| *Quantif. Method:* | **AS4A-SC ANION METHOD** | *Dilution Factor:* | **10.0000** |
| *Recording Time:* | **4/17/2006 20:12** | *Sample Weight:* | **1.0000** |
| *Run Time (min):* | **30.00** | *Sample Amount:* | **1.0000** |



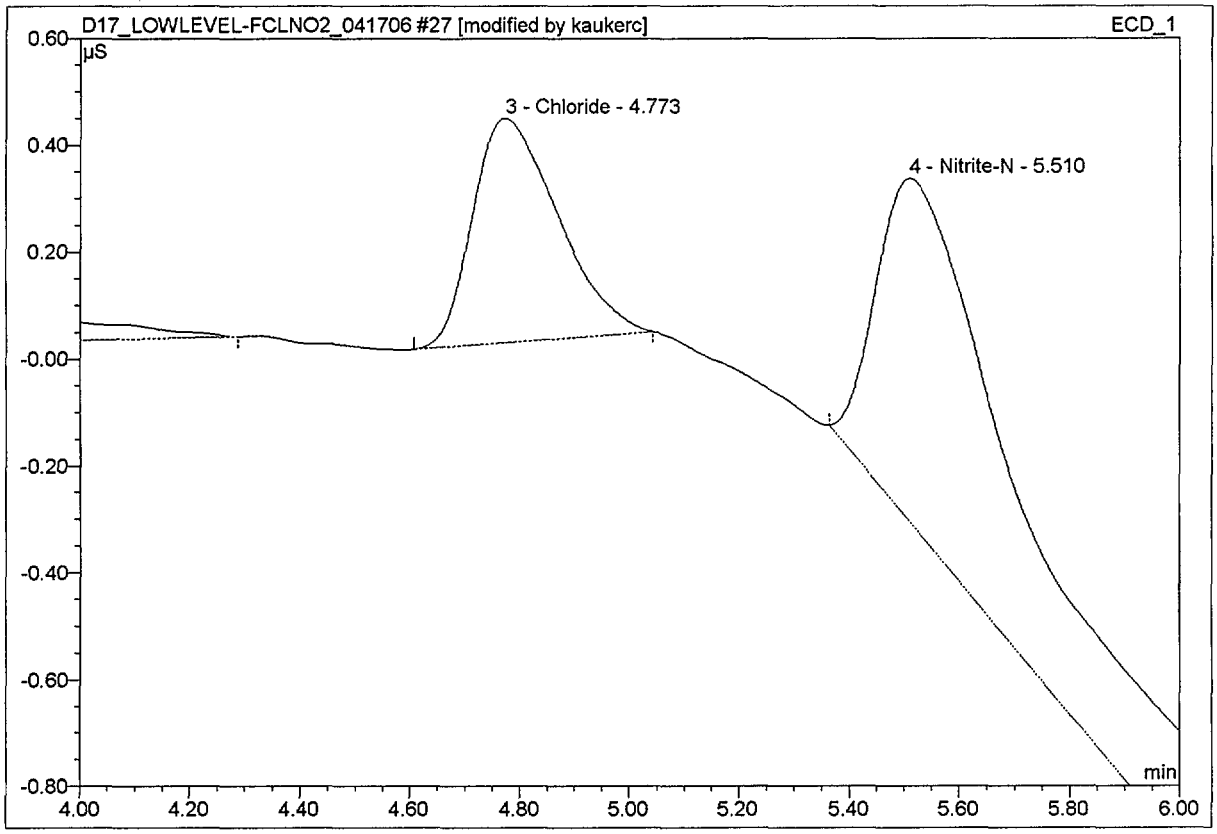

| No. | Ret.Time (min.) | Peak Name | Height (uS) | Area µS*min | Rel.Area (%) | Amount (mg/L) | Peak Type |
|---|---|---|---|---|---|---|---|
| 1 | 2.30 | n.a. | 8.27738 | 1.488 | 2.22 | n.a. | BMB* |
| 2 | 4.74 | Chloride | 0.04454 | 0.005 | 0.01 | 0.1663 | BMB* |
| 3 | 12.43 | n.a. | 1.11902 | 6.638 | 9.92 | n.a. | BMB |
| 4 | 22.58 | n.a. | 61.40153 | 58.803 | 87.85 | n.a. | BMB |

<MDL

Height

# 27 H6D040103 H2H7G MS 0.2PPM 1/10

| | | | |
|---|---|---|---|
| *Sample Name:* | **H6D040103 H2H7G MS 0.2PPM 1/10** | *Injection Volume:* | **50.0** |
| *Vial Number:* | **1254** | *Channel:* | **ECD_1** |
| *Sample Type:* | **unknown** | *Wavelength:* | **n.a.** |
| *Control Program:* | **AS14A ANIONS_CI2 METHOD** | *Bandwidth:* | **n.a.** |
| *Quantif. Method:* | **AS4A-SC ANION METHOD** | *Dilution Factor:* | **10.0000** |
| *Recording Time:* | **4/17/2006 20:44** | *Sample Weight:* | **1.0000** |
| *Run Time (min):* | **30.00** | *Sample Amount:* | **1.0000** |




| No. | Ret.Time (min.) | Peak Name | Height (uS) | Area µS*min | Rel.Area (%) | Amount (mg/L) | Peak Type |
|---|---|---|---|---|---|---|---|
| 1 | 2.31 | n.a. | 8.28100 | 1.500 | 2.26 | n.a. | BM |
| 2 | 3.33 | Fluoride | 0.48501 | 0.160 | 0.24 | 1.7803 | MB |
| 3 | 4.77 | Chloride | 0.41910 | 0.075 | 0.11 | 2.1069 | BMB* |
| 4 | 5.51 | Nitrite-N | 0.64240 | 0.297 | 0.45 | 1.8296 | BMB |
| 5 | 12.44 | n.a. | 0.91405 | 5.474 | 8.26 | n.a. | BMB |
| 6 | 22.61 | n.a. | 61.34836 | 58.740 | 88.67 | n.a. | BMB |

✓

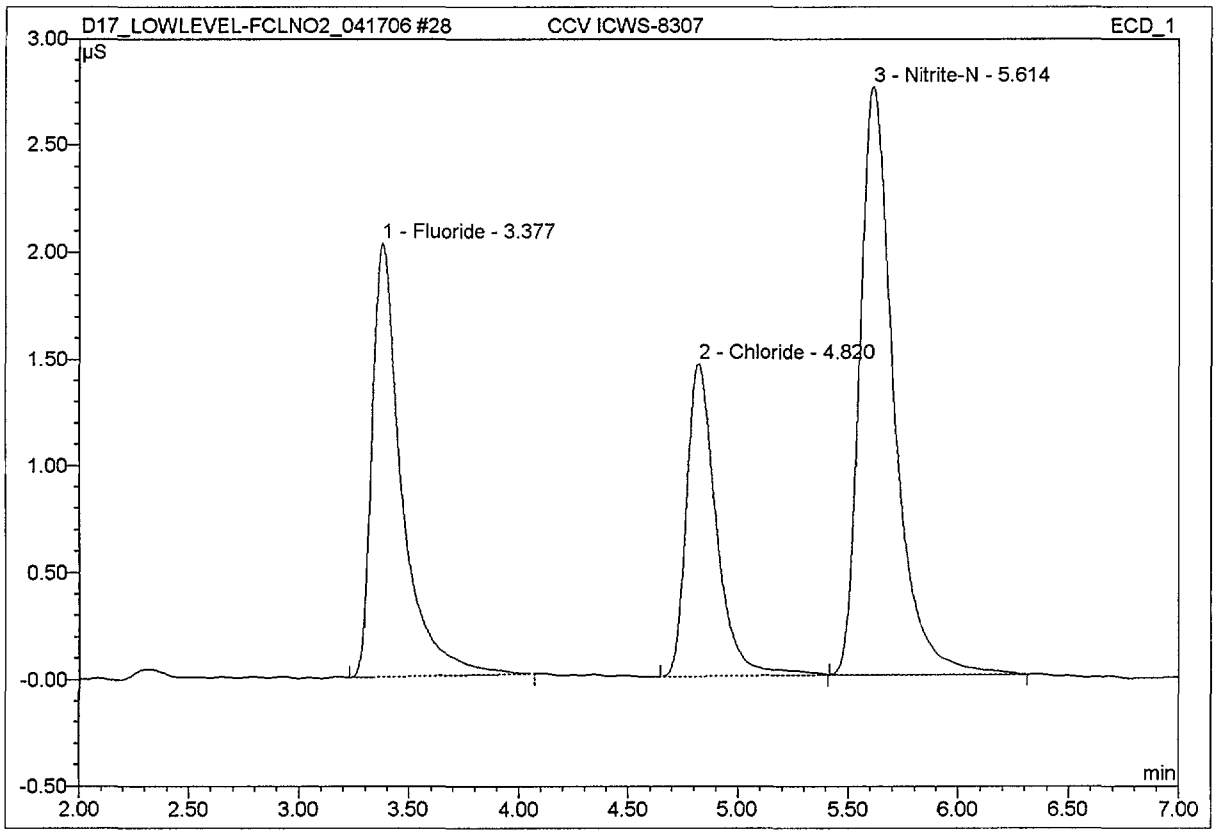
Height

~~2.1069 - 0.2667 = 1.8402~~ (<MDL) ~~/2 = 92.0%R~~ RW 4/27/06

2.1069/2 = 105%R

# 28 CCV ICWS-8307

| | | | |
|---|---|---|---|
| *Sample Name:* | **CCV ICWS-8307** | *Injection Volume:* | **50.0** |
| *Vial Number:* | **1258** | *Channel:* | **ECD_1** |
| *Sample Type:* | **unknown** | *Wavelength:* | **n.a.** |
| *Control Program:* | **AS14A ANIONS METHOD** | *Bandwidth:* | **n.a.** |
| *Quantif. Method:* | **AS4A-SC ANION METHOD** | *Dilution Factor:* | **1.0000** |
| *Recording Time:* | **4/17/2006 21:16** | *Sample Weight:* | **1.0000** |
| *Run Time (min):* | **15.00** | *Sample Amount:* | **1.0000** |

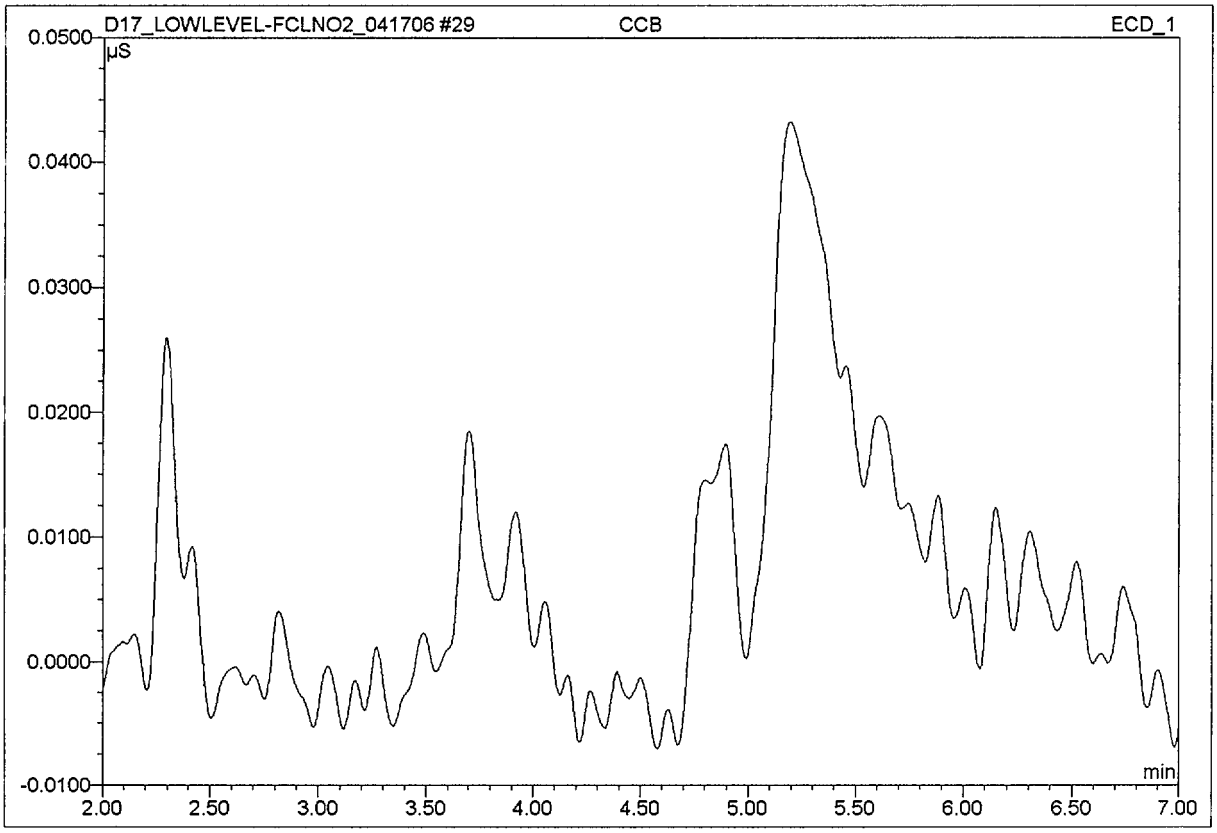



| No. | Ret.Time (min.) | Peak Name | Height (uS) | Area µS*min | Rel.Area (%) | Amount (mg/L) | Peak Type |
|---|---|---|---|---|---|---|---|
| 1 | 3.38 | Fluoride | 2.02894 | 0.317 | 30.58 | 0.7060 | BMB |
| 2 | 4.82 | Chloride | 1.46015 | 0.228 | 22.01 | 0.7455 | BMB |
| 3 | 5.61 | Nitrite-N | 2.74939 | 0.492 | 47.41 | 0.7637 | BMB |

Height

## 29 CCB

| | | | |
|---|---|---|---|
| *Sample Name:* | **CCB** | *Injection Volume:* | **50.0** |
| *Vial Number:* | **1259** | *Channel:* | **ECD_1** |
| *Sample Type:* | **unknown** | *Wavelength:* | **n.a.** |
| *Control Program:* | **AS14A ANIONS METHOD** | *Bandwidth:* | **n.a.** |
| *Quantif. Method:* | **AS4A-SC ANION METHOD** | *Dilution Factor:* | **1.0000** |
| *Recording Time:* | **4/17/2006 21:34** | *Sample Weight:* | **1.0000** |
| *Run Time (min):* | **15.00** | *Sample Amount:* | **1.0000** |




| No. | Ret.Time (min.) | Peak Name | Height (uS) | Area µS*min | Rel.Area (%) | Amount (mg/L) | Peak Type |
|---|---|---|---|---|---|---|---|

ND

# STL Knoxville Anions in Air Data Review / Narrative Checklist for Methods 9056/9057/26A, SOP KNOX-WC-0005, Rev. 5



C23-LOWLEVEL-FCLNO2-032306

| Lot Number | H6D040103 | Analysis Date: | 4/21/06 | File ID: | D21-LOWLEVEL-FCLNO2-042106 | ICAL File ID: | ~~B2BA-A54A-ANIONS~~ CWK 4/24/06 |
|---|---|---|---|---|---|---|---|

| Review Items | NA | Yes | No | If No, why is data reportable? | 2nd ✓ |
|---|---|---|---|---|---|
| 1. Were PM checklists (L40), Lot Summary and any applicable QAS reviewed? | | ✓ | | | ✓ |
| 2. ICV within 90-110%R and ICB/CCB < 1/2 RL? | | ✓ | | | ✓ |
| 3. CCVs/CCBs run after every 10 samples, and at end of sequence? | | ✓ | | | ✓ |
| 4. Is %D ≤10% for each CCV? | | ✓ | | | ✓ |
| 5. If CCV failed, was it rerun only once? | ✓ | | | | N/A |
| 6. LCS/LCSD analytes within 90-110%R? *If no, list LCS ID:* | | ✓ | | ☐ **[lcs3] LCS recovery >upper control limit & sample results are <RL.*** | ✓ |
| 7. Method blank < 1/2 RL?<br>*If no, list blank ID:* | | ✓ | | ☐ **[mb3] No analyte > RL in associated samples.***<br>☐ [mb7] Sample results > 10x higher than blank. | ✓ |
| 8. Matrix spikes run at required frequency? | | ✓ | | | ✓ |
| 9. Matrix spikes within 75-125% recovery?<br>*If no, list MS ID:* _____ | | ✓ | | ☐ [air ms1] MS %R slightly outside limits for 1 sample.<br>☐ [air ms2] MS %R slightly outside limits for >1 sample.<br>☐ Air train reagent blank – spike result not reported. | ✓ |
| 10. Were MS run #'s assigned to all matrix spikes except reagent blanks? | | ✓ | | | ✓ |
| 11. Sample analyses done within holding time (HT)?<br>*If no, list samples:* | | ✓ | | ☐ [ht1] HT expired upon receipt.<br>☐ *[ht2] Analysis requested after HT expired.** | ✓ |
| 12. Were results processed using correct ICAL? | | ✓ | | | ✓ |
| 13. Are positive results within the calibration range? | | ✓ | | | ✓ |
| 14. Is integration acceptable for all samples, QC samples and standards? | | ✓ | | | ✓ |
| 15. For manual integrated standards and QC samples, are before/after chromatograms provided with initials/date/reason? | | ✓ | | Reasons: S=Split peak, U=Undetected peak, I=Incorrect peak integration, B=Baseline correction, W=Wrong peak chosen by data system. | ✓ |
| 16. Calculations checked for error? (Document manual calculation checks.) | | ✓ | | | ✓ |
| 17. Were spreadsheets checked for transcription errors? | | ✓ | | | ✓ |
| 18. Final report/F6 correct? (Verify results, RLs, units, qualifiers, DFs, dates, spikes.) | | ✓ | | | ✓ |
| 19. Are all nonconformances documented and discussed in narrative? | ✓ | | | List NCM #: | N/A |
| 20. Appropriate air train autotext selected for narrative? | | ✓ | | ☑ [air1] $Cl^-$ reported as HCl and $Cl_2$.<br>☐ [air2] $Cl^-$ reported as HCl only.<br>☐ [air3] $Cl^-$, $F^-$ reported as HCl, $Cl_2$, HF.<br>☐ [air4] $Cl^-$, $F^-$, $Br^-$ reported as HCl, $Cl_2$, HF, HBr, $Br_2$.<br>☐ [air5] $Cl^-$, $F^-$, $NO_2^-$, $NO_3^-$ reported as HCl, $Cl_2$, HF, $HNO_2$, $HNO_3$.<br>☐ [air6] $Cl^-$, $F^-$, $Br^-$, $I^-$ reported as HCl, $Cl_2$, HF, HBr, $Br_2$, I.<br>☐ [air7] $Cl^-$, $F^-$, $NO_2^-$, $NO_3^-$ reported as $Cl^-$, $F^-$, $NO_2^-$, $NO_3^-$. | ✓ |
| 21. Sample pH adjustment included in narrative? | ✓ | | | ☐ [air pH] Sample pH adjusted prior to analysis. | N/A |
| 22. Audit sample results included in narrative? | ✓ | | | ☐ [audit2] Audit results in mg/L. | N/A |

| Analyst: CWK | Date: 4/24/06 | 2nd Level Reviewer: [signature] | Date: 4/26/06 |
|---|---|---|---|
| Comments: H2H69 1/10 | | Comments: | |

$y = 0.012524 + 1.92493(0.63424) + 0.022501(0.63424)^2$

$y = 0.012524 + 1.220899315 + 0.009051261$

$y = 1.242$ ✓

* Such action must be taken in consultation with client.

Nonconformance memos are required for **bold** and *italicized* [autotext] statements: **Bold** = deficiency, *italicized* = anomoly.

# STL Knoxville
# Hydrogen Chloride (HCl) Analysis

Batch No.: 6114264
QuantIMS RL (ug/mL): 1.0
QuantIMS MDL (ug/mL): 0.3
Low Calibration Standard (ug/mL): 0.1

2nd Level Review by: RJW
Date: 4/26/06
No. of Significant Figures: 3

| Sample Type | Lab ID | Sample Volume (mL) | Bench Dilution | Final Chloride Result (ug/mL) (Corrected for bench dilution) | **Rounded Result ug HCl** | Rounded RL ug HCl | Rounded MDL ug HCl | **QuantIMS Dilution Factor** |
|---|---|---|---|---|---|---|---|---|
| BLANK | H3XTL1AA | 100 | 1 | 0.000 | **ND** | 10.3 | 3.09 | **10.3** |
| LCS | H3XTL1AC | 100 | 1 | 0.493 | **50.7** | 10.3 | 3.09 | **10.3** |
| LCSD | H3XTL1AD | 100 | 1 | 0.504 | **51.9** | 10.3 | 3.09 | **10.3** |
| SPIKE ADDED | | 100 | 1 | 0.500 | **51.4** | 10.3 | 3.09 | **10.3** |
| | H2H69 | 1805 | 10 | 6.342 | **11,800** | 1,860 | 557 | **1856.3** |
| | H2H69 DUP | 1805 | 10 | 6.398 | **11,900** | 1,860 | 557 | **1856.3** |
| MS | H2H69 MS | 1805 | 10 | 8.458 | **15,700** | 1,860 | 557 | **1856.3** |
| MSD | H2H69 MSD | 1805 | 10 | 8.298 | **15,400** | 1,860 | 557 | **1856.3** |
| SPIKE ADDED | | 1805 | 10 | 2.000 | **3,710** | 1,860 | 557 | **1856.3** |
| | H2H7J | 1885 | 10 | 3.585 | **6,950** | 1,940 | 582 | **1938.6** |
| | H2H7J DUP | 1885 | 10 | 3.567 | **6,910** | 1,940 | 582 | **1938.6** |
| | H2H7P | 1885 | 10 | 3.349 | **6,490** | 1,940 | 582 | **1938.6** |
| | H2H7P DUP | 1885 | 10 | 3.194 | **6,190** | 1,940 | 582 | **1938.6** |

**Rounded Result, ug HCl** = Chloride result (ug/mL) x (MW HCl/MW Cl) x Sample Volume (mL)
**Rounded RL, ug HCl** = Low Calibration Standard (ug/mL) x (MW HCl/MW Cl) x Sample Volume (mL) x Bench Dilution
**Rounded MDL, ug HCl** = QuantIMS MDL (ug/mL) x Low Calibration Standard (ug/mL) / QuantIMS RL (ug/mL) x (MW HCl/MW Cl) x Sample Volume (mL) x Bench Dilution
**QuantIMS Dilution Factor** = Sample Volume (mL) x Bench Dilution x Low Calibration Standard (ug/mL) / QuantIMS RL (ug/mL) x (MW HCl/MW Cl)
**Molecular Weight (MW) HCl** = 1.0079 + 35.453 = 36.4609
**Molecular Weight (MW) Cl** = 35.453

# STL Knoxville
# Dionex IC Runlog Cover Page

| Analyst: | CWL | Date: | 4/21/06 | Sequence ID: | D21-LOWLEVEL-FCLN02-042106 |
|---|---|---|---|---|---|

| Instrument: | | Method: | |
|---|---|---|---|
| | ☐ DX-600 | | ☐ KNOX-WC-0003, SW-846 0061/7199 |
| | ☑ ICS-1500 | | ☐ KNOX-WC-0005, ☐ SW-846 9056 ☐ EPA 300.0 ☐ SW-846 9057-Mod ☑ EPA 26A-Mod |
| | ☐ DX-320 | | ☐ KNOX-WC-0014, EPA 314.0 |

| Preventive Maintenance | Instrument Conditions | | |
|---|---|---|---|
| **Daily:** | Flow Rate = | 1.00 | mL/min |
| ☑ Check pump and gas pressure | Pressure = | 2065 | psi |
| ☑ Check all lines for crimping, leaks and discoloration | Conductance = | 24.8 | µS |
| **As Needed:** | Suppressor Current = | 43 | mA |
| ☐ Change column and guard column | Eluent Generator = | — | mM KOH |
| ☐ Change column and/or guard column bed support | | | |
| ☐ Clean conductivity cell | | | |
| ☐ De-gas pump head when flow is erratic | | | |
| ☐ Check/replace eluant end line filter | | | |

**MS/MSD Spike Information**

| WO # | Compound | Spike ID | Parent Conc. | Spike Added (mL) | Final Volume (mL) | Final Conc. |
|---|---|---|---|---|---|---|
| H2H69 | Cl- | ICWI-8262 | 100 ppm | 0.020 mL | 10 mL | 0.2ppm |
| | | | | | | |
| | | | | | | |
| | | | | | | |
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| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

**Comments:**

☐ Sodium Thiosulfate added to NaOH impinger samples.

Sequence: D21_LOWLEVEL-FCLNO2_042106
Operator: kaukerc


Printed: 4/21/2006 1:18:33 PM

CWK 4/21/06

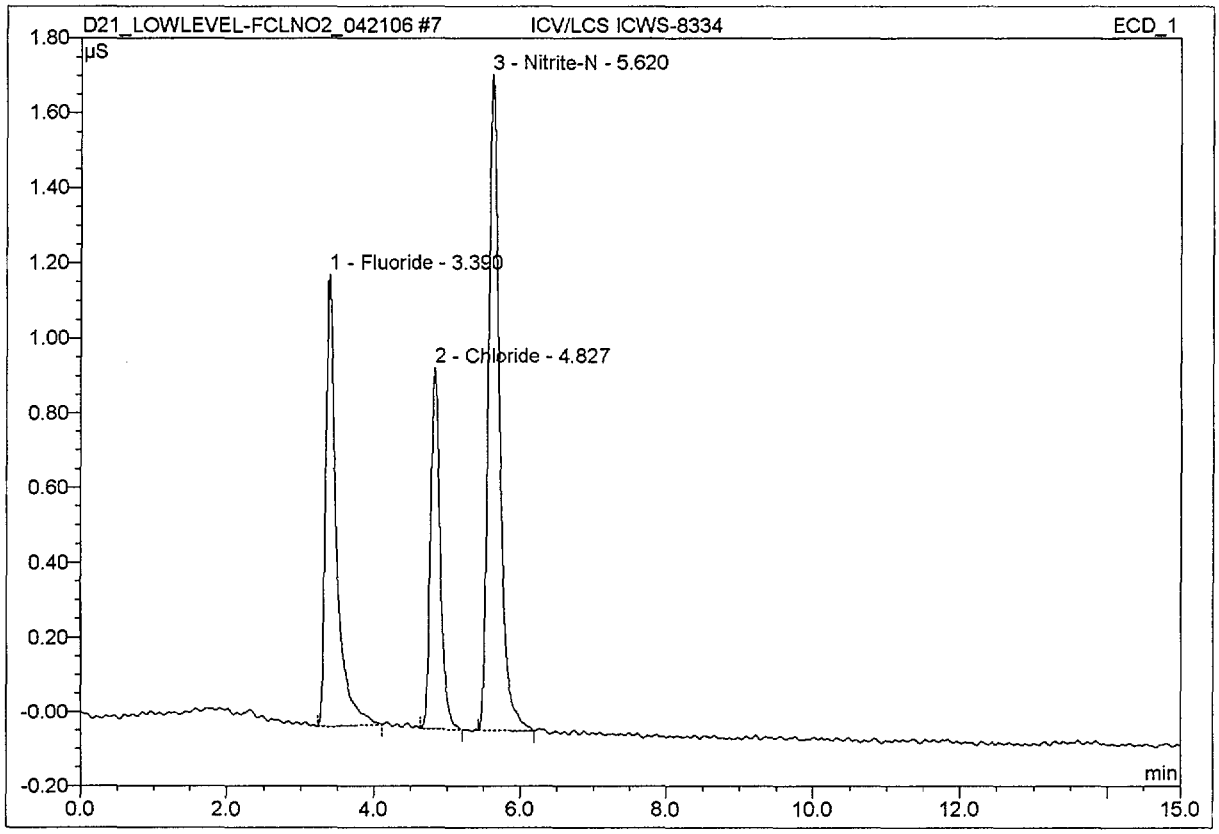
Title:
Datasource: ICS_1500_net
Location: ICS1500
Timebase: ICS1500
#Samples: 22

Created: 4/21/2006 8:24:56 AM by kaukerc
Last Update: 4/21/2006 10:37:28 AM by kaukerc

| No. | Name | Sample ID | Inj. Vol. | Inj. Date/Time | Dil. Factor | *Multiplier [Liters] | Weight |
|---|---|---|---|---|---|---|---|
| 1 | CAL STD #2 ICWS-8231 | | 50.0 | 3/23/2006 10:51:01 AM | 1.0000 | | 1.0000 |
| 2 | CAL STD #3 ICWS-8232 | | 50.0 | 3/23/2006 11:08:25 AM | 1.0000 | | 1.0000 |
| 3 | CAL STD #4 ICWS-8233 | | 50.0 | 3/23/2006 11:25:49 AM | 1.0000 | | 1.0000 |
| 4 | CAL STD #5 ICWS-8234 | | 50.0 | 3/23/2006 11:43:13 AM | 1.0000 | | 1.0000 |
| 5 | CAL STD #6 ICWS-8235 | | 50.0 | 3/23/2006 12:00:37 PM | 1.0000 | | 1.0000 |
| 6 | CAL STD #1 ICWS-8230 | | 50.0 | 3/23/2006 12:37:04 PM | 1.0000 | | 1.0000 |
| 7 | ICV/LCS ICWS-8334 | | 50.0 | 4/21/2006 8:29:43 AM | 1.0000 | | 1.0000 |
| 8 | ICV/LCSD ICWS-8335 | | 50.0 | 4/21/2006 8:47:07 AM | 1.0000 | | 1.0000 |
| 9 | ICB/METHOD BLK | | 50.0 | 4/21/2006 9:04:31 AM | 1.0000 | | 1.0000 |
| 10 | H6D040103 H2H69 1/10 | | 50.0 | 4/21/2006 9:21:55 AM | 10.0000 | | 1.0000 |
| 11 | H6D040103 H2H69 MS 1/10 0.2 PPM CL | | 50.0 | 4/21/2006 9:51:24 AM | 10.0000 | | 1.0000 |
| 12 | H6D040103 H2H69 DUP 1/10 | | 50.0 | 4/21/2006 10:23:29 AM | 10.0000 | | 1.0000 |
| 13 | H6D040103 H2H69 MSD 1/10 0.2 PPM CL | | 50.0 | 4/21/2006 10:40:54 AM | 10.0000 | | 1.0000 |
| 14 | H6D040103 H2H7J 1/10 | | 50.0 | 4/21/2006 10:58:18 AM | 10.0000 | | 1.0000 |
| 15 | H6D040103 H2H7J DUP 1/10 | | 50.0 | 4/21/2006 11:15:43 AM | 10.0000 | | 1.0000 |
| 16 | H6D040103 H2H7P 1/10 | | 50.0 | 4/21/2006 11:33:07 AM | 10.0000 | | 1.0000 |
| 17 | CCV ICWS-8336 | | 50.0 | 4/21/2006 11:50:31 AM | 1.0000 | | 1.0000 |
| 18 | CCB | | 50.0 | 4/21/2006 12:07:56 PM | 1.0000 | | 1.0000 |
| 19 | H6D040103 H2H7P DUP 1/10 | | 50.0 | 4/21/2006 12:25:19 PM | 10.0000 | | 1.0000 |
| 20 | CCV ICWS-8336 | | 50.0 | 4/21/2006 12:42:44 PM | 1.0000 | | 1.0000 |
| 21 | CCB | | 50.0 | 4/21/2006 1:00:08 PM | 1.0000 | | 1.0000 |
| 22 | SHUTDOWN | | 50.0 | 4/17/2006 9:51:45 PM | 1.0000 | | 1.0000 |

# 7 ICV/LCS ICWS-8334

| | | | |
|---|---|---|---|
| *Sample Name:* | **ICV/LCS ICWS-8334** | *Injection Volume:* | **50.0** |
| *Vial Number:* | **1207** | *Channel:* | **ECD_1** |
| *Sample Type:* | **unknown** | *Wavelength:* | **n.a.** |
| *Control Program:* | **AS14A ANIONS METHOD** | *Bandwidth:* | **n.a.** |
| *Quantif. Method:* | **AS4A-SC ANION METHOD** | *Dilution Factor:* | **1.0000** |
| *Recording Time:* | **4/21/2006 8:29** | *Sample Weight:* | **1.0000** |
| *Run Time (min):* | **15.00** | *Sample Amount:* | **1.0000** |



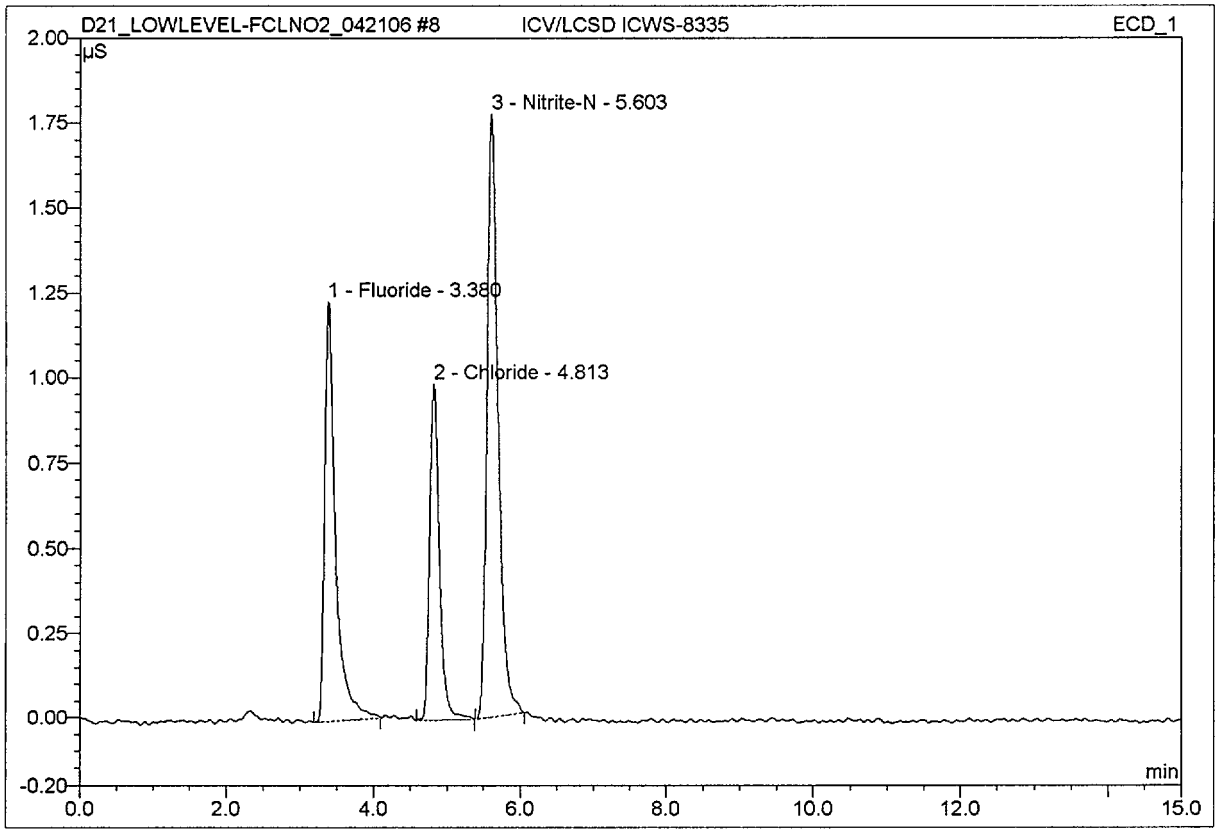

| No. | Ret.Time (min.) | Peak Name | Height (uS) | Area µS*min | Rel.Area (%) | Amount (mg/L) | Peak Type |
|---|---|---|---|---|---|---|---|
| 1 | 3.39 | Fluoride | 1.20880 | 0.207 | 30.83 | 0.4296 | BMB |
| 2 | 4.83 | Chloride | 0.96750 | 0.148 | 21.97 | 0.4933 | BMB |
| 3 | 5.62 | Nitrite-N | 1.75321 | 0.317 | 47.19 | 0.4928 | BMB |

98.7%LR

H3XTL1AC

# 8 ICV/LCSD ICWS-8335

| | | | |
|---|---|---|---|
| *Sample Name:* | **ICV/LCSD ICWS-8335** | *Injection Volume:* | **50.0** |
| *Vial Number:* | **1207** | *Channel:* | **ECD_1** |
| *Sample Type:* | **unknown** | *Wavelength:* | **n.a.** |
| *Control Program:* | **AS14A ANIONS METHOD** | *Bandwidth:* | **n.a.** |
| *Quantif. Method:* | **AS4A-SC ANION METHOD** | *Dilution Factor:* | **1.0000** |
| *Recording Time:* | **4/21/2006 8:47** | *Sample Weight:* | **1.0000** |
| *Run Time (min):* | **15.00** | *Sample Amount:* | **1.0000** |



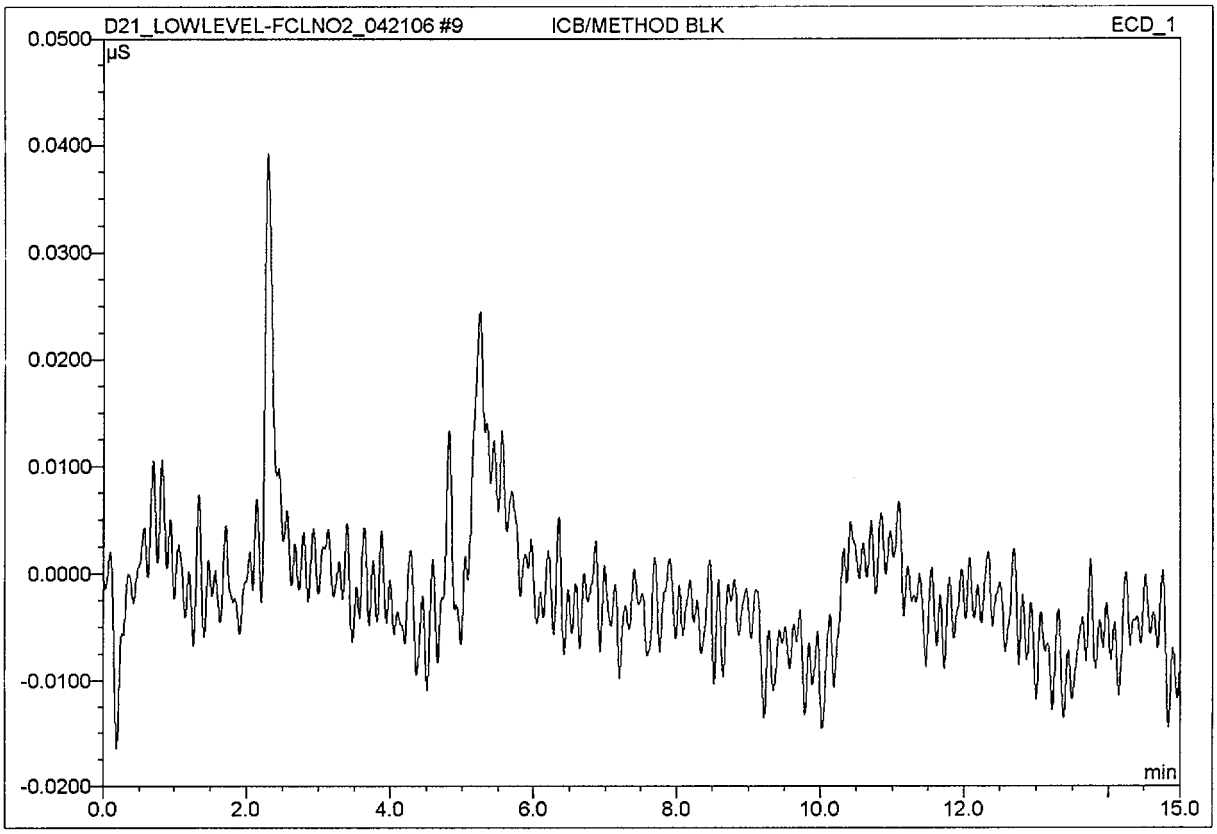

| No. | Ret.Time (min.) | Peak Name | Height (uS) | Area µS*min | Rel.Area (%) | Amount (mg/L) | Peak Type |
|---|---|---|---|---|---|---|---|
| 1 | 3.38 | Fluoride | 1.23558 | 0.211 | 30.86 | 0.4387 | BMB |
| 2 | 4.81 | Chloride | 0.98917 | 0.154 | 22.55 | 0.5044 | BMB |
| 3 | 5.60 | Nitrite-N | 1.77402 | 0.318 | 46.60 | 0.4985 | BMB |

100.9%R

H3XTL1AD

# 9 ICB/METHOD BLK

| | | | |
|---|---|---|---|
| *Sample Name:* | **ICB/METHOD BLK** | *Injection Volume:* | **50.0** |
| *Vial Number:* | **1210** | *Channel:* | **ECD_1** |
| *Sample Type:* | **unknown** | *Wavelength:* | **n.a.** |
| *Control Program:* | **AS14A ANIONS METHOD** | *Bandwidth:* | **n.a.** |
| *Quantif. Method:* | **AS4A-SC ANION METHOD** | *Dilution Factor:* | **1.0000** |
| *Recording Time:* | **4/21/2006 9:04** | *Sample Weight:* | **1.0000** |
| *Run Time (min):* | **15.00** | *Sample Amount:* | **1.0000** |



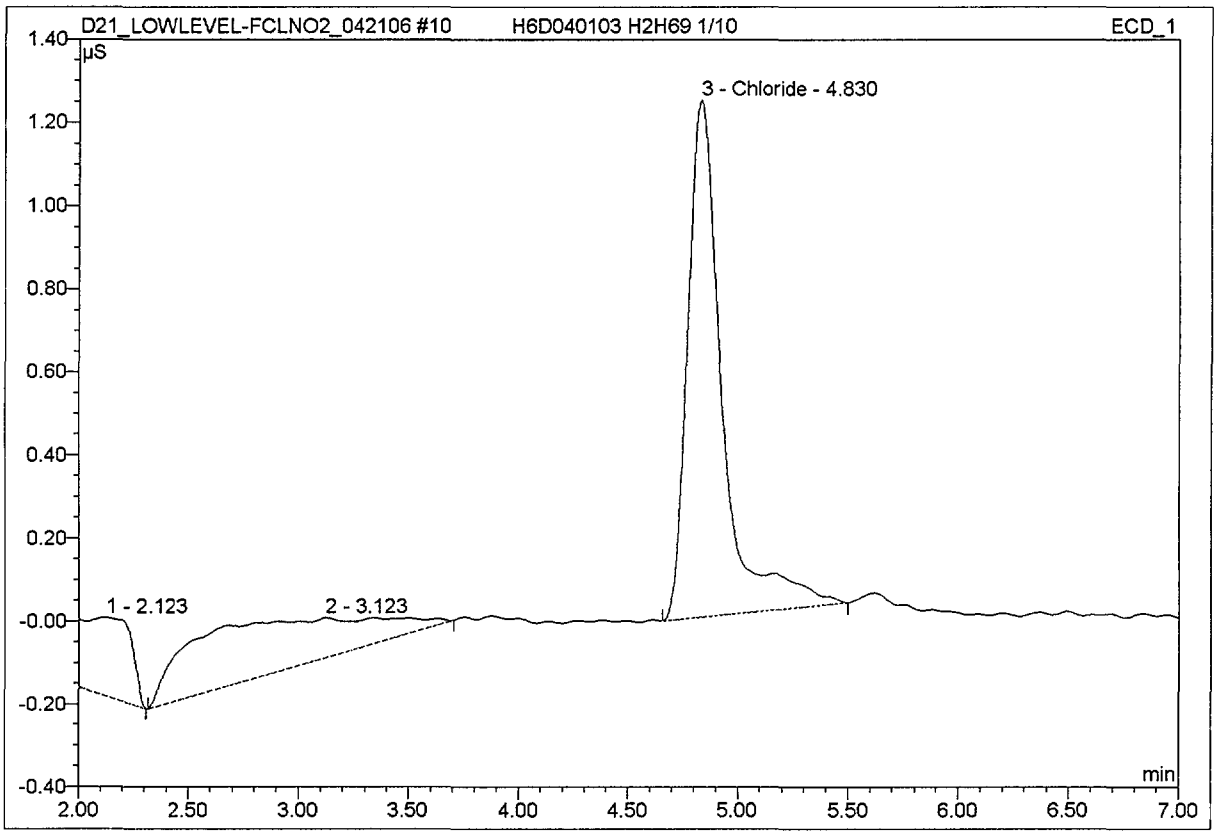

| No. | Ret.Time (min.) | Peak Name | Height (uS) | Area µS*min | Rel.Area (%) | Amount (mg/L) | Peak Type |
|---|---|---|---|---|---|---|---|

H3XTL1AA

ND

# 10 H6D040103 H2H69 1/10

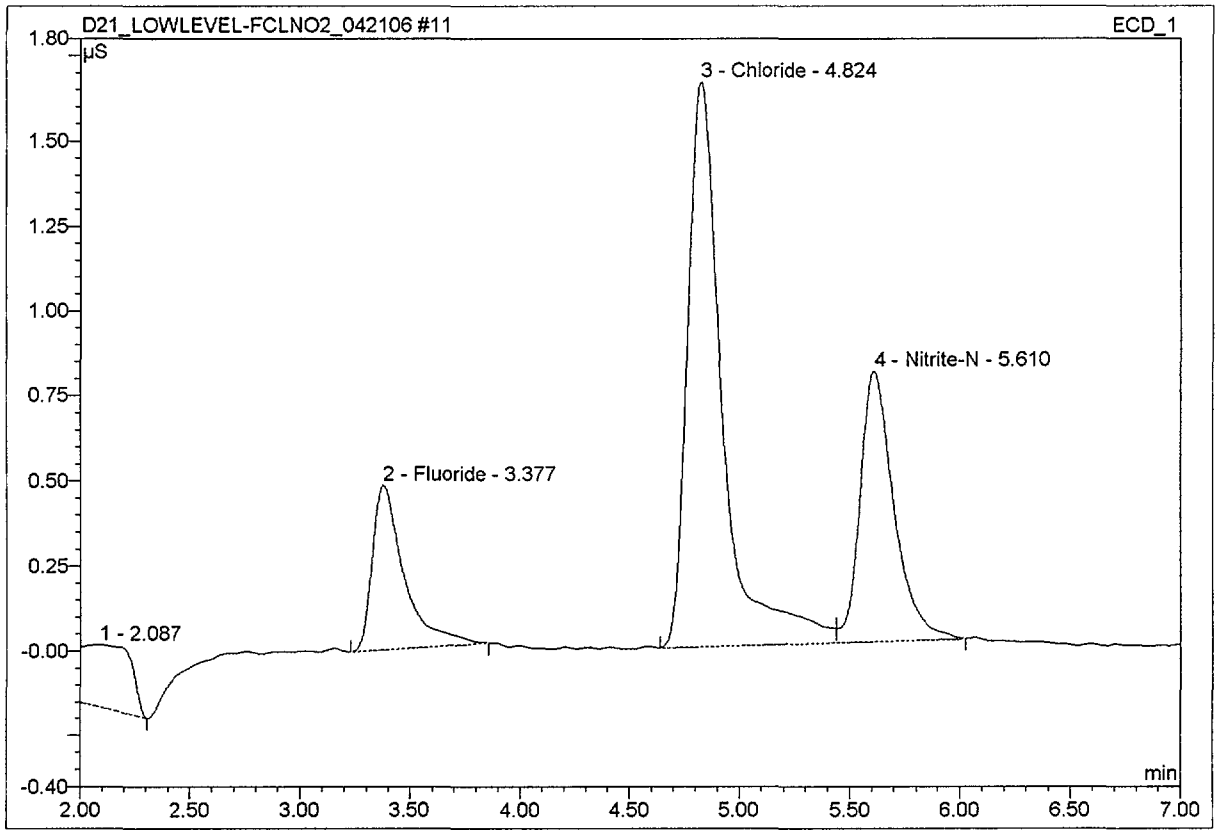
| | | | |
|---|---|---|---|
| *Sample Name:* | **H6D040103 H2H69 1/10** | *Injection Volume:* | **50.0** |
| *Vial Number:* | **1210** | *Channel:* | **ECD_1** |
| *Sample Type:* | **unknown** | *Wavelength:* | **n.a.** |
| *Control Program:* | **AS14A ANIONS METHOD** | *Bandwidth:* | **n.a.** |
| *Quantif. Method:* | **AS4A-SC ANION METHOD** | *Dilution Factor:* | **10.0000** |
| *Recording Time:* | **4/21/2006 9:21** | *Sample Weight:* | **1.0000** |
| *Run Time (min):* | **15.00** | *Sample Amount:* | **1.0000** |




| No. | Ret.Time (min.) | Peak Name | Height (uS) | Area µS*min | Rel.Area (%) | Amount (mg/L) | Peak Type |
|---|---|---|---|---|---|---|---|
| 1 | 2.12 | n.a. | 0.18854 | 0.125 | 0.50 | n.a. | BMB |
| 2 | 3.12 | n.a. | 0.09478 | 0.119 | 0.47 | n.a. | BMB |
| 3 | 4.83 | Chloride | 1.24248 | 0.226 | 0.90 | 6.3424 | BMB |
| 4 | 7.79 | n.a. | 0.44307 | 0.104 | 0.41 | n.a. | BMB |
| 5 | 12.42 | n.a. | 72.73359 | 24.650 | 97.73 | n.a. | BMB |

# 11 H6D040103 H2H69 MS 1/10 0.2 PPM CL

| | | | |
|---|---|---|---|
| *Sample Name:* | **H6D040103 H2H69 MS 1/10 0.2 PPM CL** | *Injection Volume:* | **50.0** |
| *Vial Number:* | **1243** | *Channel:* | **ECD_1** |
| *Sample Type:* | **unknown** | *Wavelength:* | **n.a.** |
| *Control Program:* | **AS14A ANIONS METHOD** | *Bandwidth:* | **n.a.** |
| *Quantif. Method:* | **AS4A-SC ANION METHOD** | *Dilution Factor:* | **10.0000** |
| *Recording Time:* | **4/21/2006 9:51** | *Sample Weight:* | **1.0000** |
| *Run Time (min):* | **15.00** | *Sample Amount:* | **1.0000** |

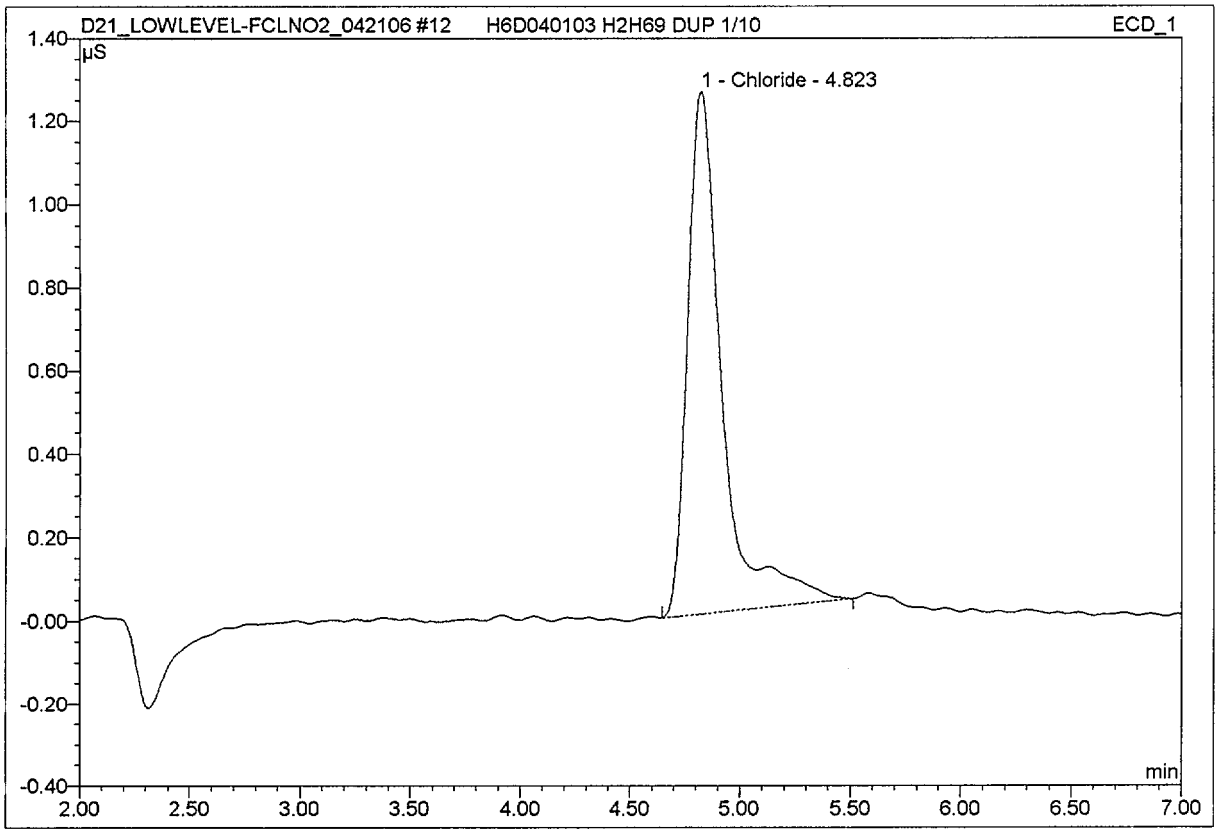



| No. | Ret.Time (min.) | Peak Name | Height (uS) | Area µS*min | Rel.Area (%) | Amount (mg/L) | Peak Type |
|---|---|---|---|---|---|---|---|
| 1 | 2.09 | n.a. | 0.18427 | 0.129 | 0.51 | n.a. | BMB |
| 2 | 3.38 | Fluoride | 0.48324 | 0.081 | 0.32 | 1.7740 | BMB |
| 3 | 4.82 | Chloride | 1.65682 | 0.307 | 1.21 | 8.4583 | BM |
| 4 | 5.61 | Nitrite-N | 0.79193 | 0.141 | 0.55 | 2.2517 | MB |
| 5 | 7.78 | n.a. | 0.43232 | 0.098 | 0.38 | n.a. | BMB |
| 6 | 12.41 | n.a. | 72.68974 | 24.697 | 97.03 | n.a. | BMB |

8.4583 - 6.3424 = 2.1159 / 2 = 105.8%R

# 12 H6D040103 H2H69 DUP 1/10

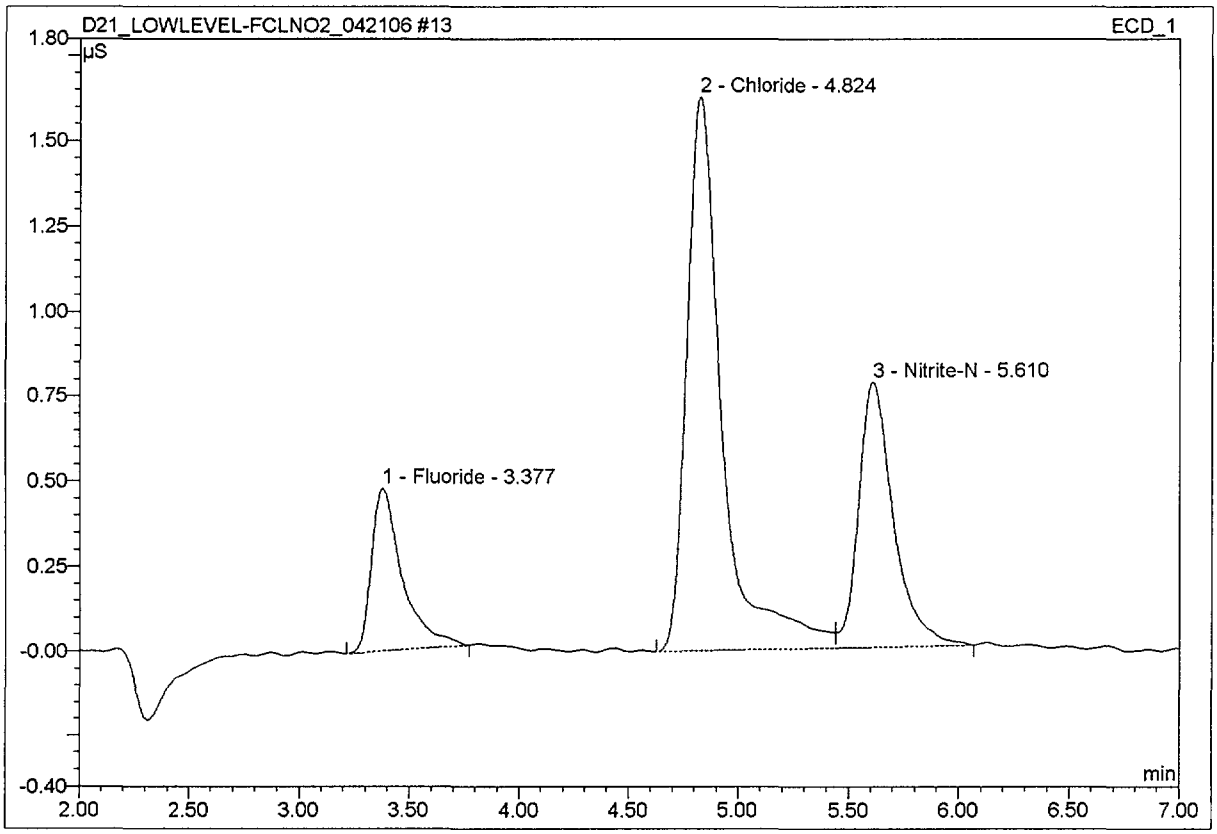
| | | | |
|---|---|---|---|
| *Sample Name:* | **H6D040103 H2H69 DUP 1/10** | *Injection Volume:* | **50.0** |
| *Vial Number:* | **1244** | *Channel:* | **ECD_1** |
| *Sample Type:* | **unknown** | *Wavelength:* | **n.a.** |
| *Control Program:* | **AS14A ANIONS METHOD** | *Bandwidth:* | **n.a.** |
| *Quantif. Method:* | **AS4A-SC ANION METHOD** | *Dilution Factor:* | **10.0000** |
| *Recording Time:* | **4/21/2006 10:23** | *Sample Weight:* | **1.0000** |
| *Run Time (min):* | **15.00** | *Sample Amount:* | **1.0000** |




| No. | Ret.Time (min.) | Peak Name | Height (uS) | Area µS*min | Rel.Area (%) | Amount (mg/L) | Peak Type |
|---|---|---|---|---|---|---|---|
| 1 | 4.82 | Chloride | 1.25329 | 0.229 | 0.90 | 6.3978 | BMB |
| 2 | 7.78 | n.a. | 0.43709 | 0.102 | 0.40 | n.a. | BMB |
| 3 | 12.41 | n.a. | 73.77207 | 25.129 | 98.70 | n.a. | BMB |

# 13 H6D040103 H2H69 MSD 1/10 0.2 PPM CL

| | | | |
|---|---|---|---|
| *Sample Name:* | **H6D040103 H2H69 MSD 1/10 0.2 PPM CL** | *Injection Volume:* | **50.0** |
| *Vial Number:* | **1245** | *Channel:* | **ECD_1** |
| *Sample Type:* | **unknown** | *Wavelength:* | **n.a.** |
| *Control Program:* | **AS14A ANIONS METHOD** | *Bandwidth:* | **n.a.** |
| *Quantif. Method:* | **AS4A-SC ANION METHOD** | *Dilution Factor:* | **10.0000** |
| *Recording Time:* | **4/21/2006 10:40** | *Sample Weight:* | **1.0000** |
| *Run Time (min):* | **15.00** | *Sample Amount:* | **1.0000** |

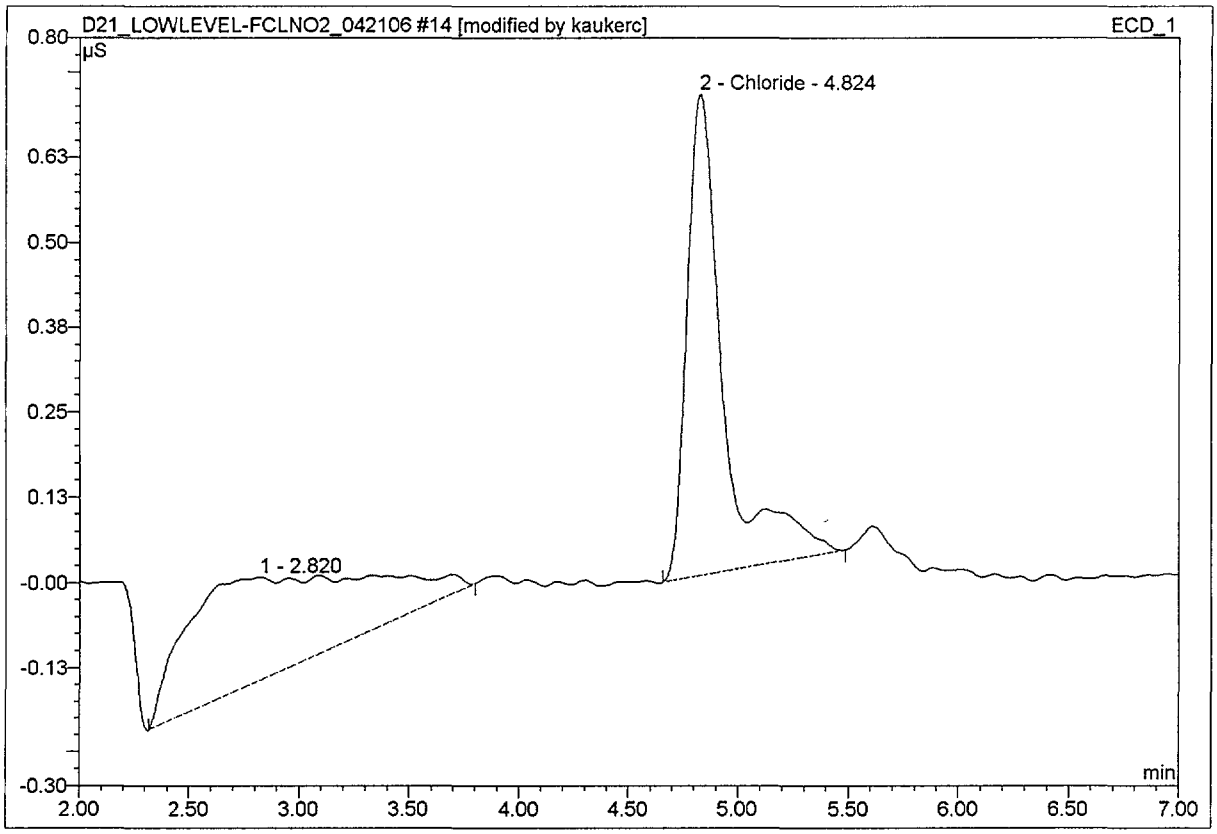



| No. | Ret.Time (min.) | Peak Name | Height (uS) | Area µS*min | Rel.Area (%) | Amount (mg/L) | Peak Type |
|---|---|---|---|---|---|---|---|
| 1 | 3.38 | Fluoride | 0.47914 | 0.078 | 0.31 | 1.7596 | BMB |
| 2 | 4.82 | Chloride | 1.62542 | 0.303 | 1.19 | 8.2982 | BM |
| 3 | 5.61 | Nitrite-N | 0.77838 | 0.143 | 0.56 | 2.2135 | MB |
| 4 | 7.78 | n.a. | 0.44059 | 0.100 | 0.39 | n.a. | BMB |
| 5 | 12.41 | n.a. | 72.79631 | 24.798 | 97.54 | n.a. | BMB |

$8.2982 - 6.3424 = 1.9558 \Big|_2 = 97.8\%$

# 14 H6D040103 H2H7J 1/10

| | | | |
|---|---|---|---|
| *Sample Name:* | **H6D040103 H2H7J 1/10** | *Injection Volume:* | **50.0** |
| *Vial Number:* | **1246** | *Channel:* | **ECD_1** |
| *Sample Type:* | **unknown** | *Wavelength:* | **n.a.** |
| *Control Program:* | **AS14A ANIONS METHOD** | *Bandwidth:* | **n.a.** |
| *Quantif. Method:* | **AS4A-SC ANION METHOD** | *Dilution Factor:* | **10.0000** |
| *Recording Time:* | **4/21/2006 10:58** | *Sample Weight:* | **1.0000** |
| *Run Time (min):* | **15.00** | *Sample Amount:* | **1.0000** |




| No. | Ret.Time (min.) | Peak Name | Height (uS) | Area µS*min | Rel.Area (%) | Amount (mg/L) | Peak Type |
|---|---|---|---|---|---|---|---|
| 1 | 2.82 | n.a. | 0.15194 | 0.142 | 0.61 | n.a. | BMB |
| 2 | 4.82 | Chloride | 0.70547 | 0.136 | 0.58 | 3.5847 | BMB* |
| 3 | 7.78 | n.a. | 0.36414 | 0.080 | 0.34 | n.a. | BMB |
| 4 | 12.42 | n.a. | 67.67685 | 22.968 | 98.47 | n.a. | BMB |

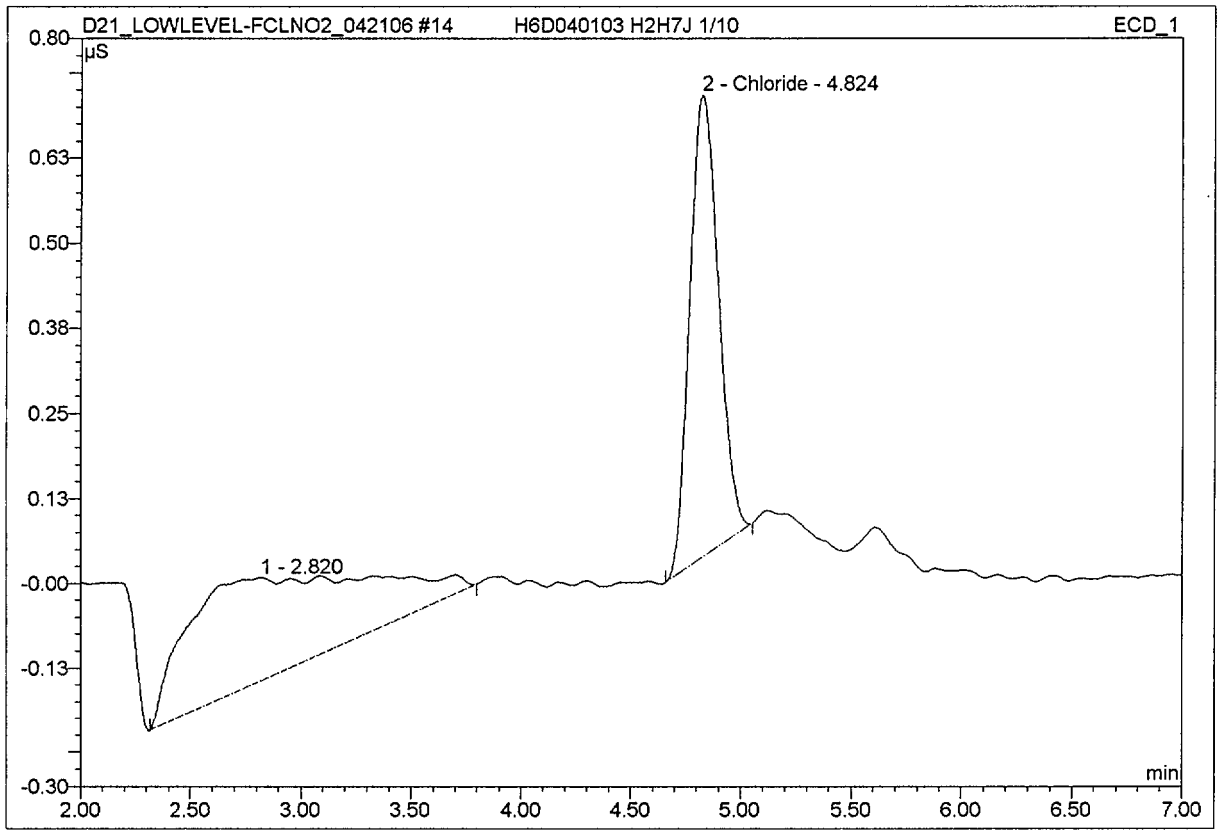
manual integration

(B)

CWK
4/24/06

# 14 H6D040103 H2H7J 1/10

| | | | |
|---|---|---|---|
| *Sample Name:* | **H6D040103 H2H7J 1/10** | *Injection Volume:* | **50.0** |
| *Vial Number:* | **1246** | *Channel:* | **ECD_1** |
| *Sample Type:* | **unknown** | *Wavelength:* | **n.a.** |
| *Control Program:* | **AS14A ANIONS METHOD** | *Bandwidth:* | **n.a.** |
| *Quantif. Method:* | **AS4A-SC ANION METHOD** | *Dilution Factor:* | **10.0000** |
| *Recording Time:* | **4/21/2006 10:58** | *Sample Weight:* | **1.0000** |
| *Run Time (min):* | **15.00** | *Sample Amount:* | **1.0000** |

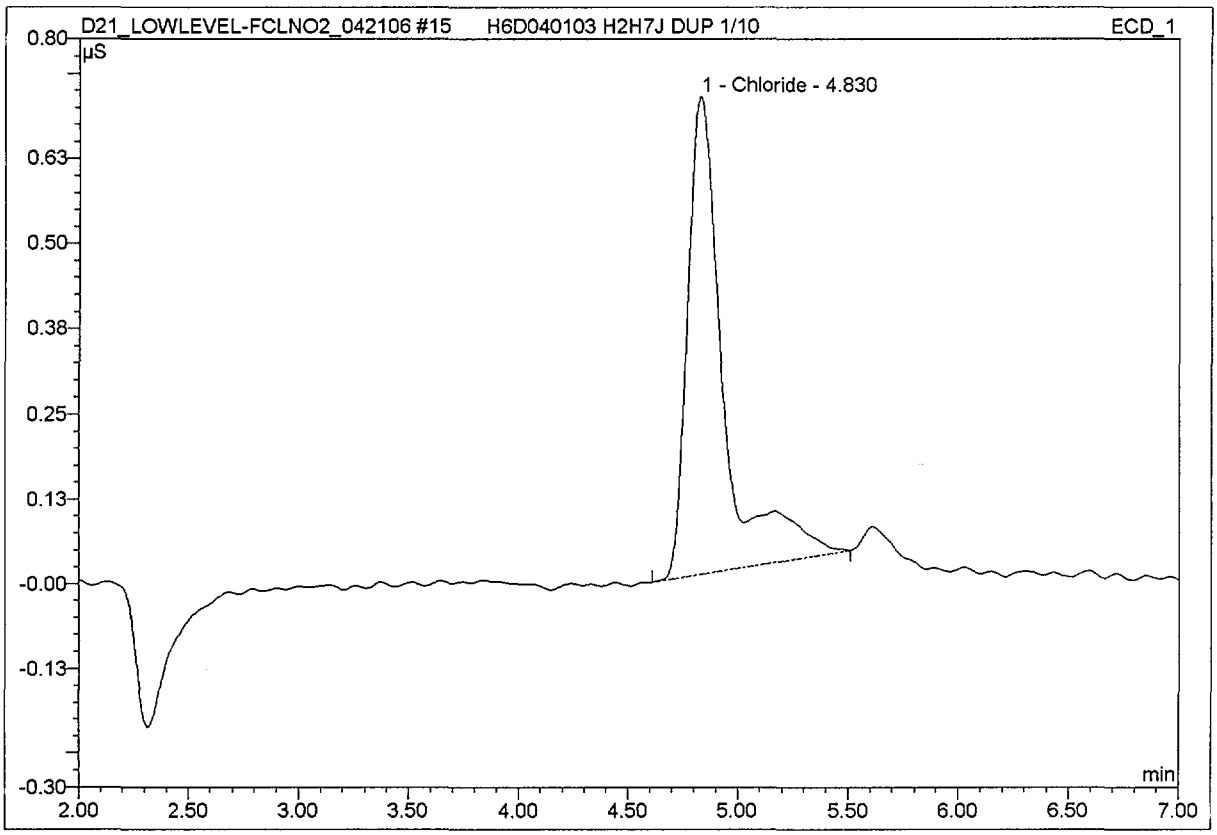



| No. | Ret.Time (min.) | Peak Name | Height (uS) | Area µS*min | Rel.Area (%) | Amount (mg/L) | Peak Type |
|---|---|---|---|---|---|---|---|
| 1 | 2.82 | n.a. | 0.15194 | 0.142 | 0.61 | n.a. | BMB |
| 2 | 4.82 | Chloride | 0.67788 | 0.103 | 0.44 | 3.4426 | BMB |
| 3 | 7.78 | n.a. | 0.36414 | 0.080 | 0.35 | n.a. | BMB |
| 4 | 12.42 | n.a. | 67.67685 | 22.968 | 98.60 | n.a. | BMB |

Original

# 15 H6D040103 H2H7J DUP 1/10

| | | | |
|---|---|---|---|
| *Sample Name:* | **H6D040103 H2H7J DUP 1/10** | *Injection Volume:* | **50.0** |
| *Vial Number:* | **1247** | *Channel:* | **ECD_1** |
| *Sample Type:* | **unknown** | *Wavelength:* | **n.a.** |
| *Control Program:* | **AS14A ANIONS METHOD** | *Bandwidth:* | **n.a.** |
| *Quantif. Method:* | **AS4A-SC ANION METHOD** | *Dilution Factor:* | **10.0000** |
| *Recording Time:* | **4/21/2006 11:15** | *Sample Weight:* | **1.0000** |
| *Run Time (min):* | **15.00** | *Sample Amount:* | **1.0000** |



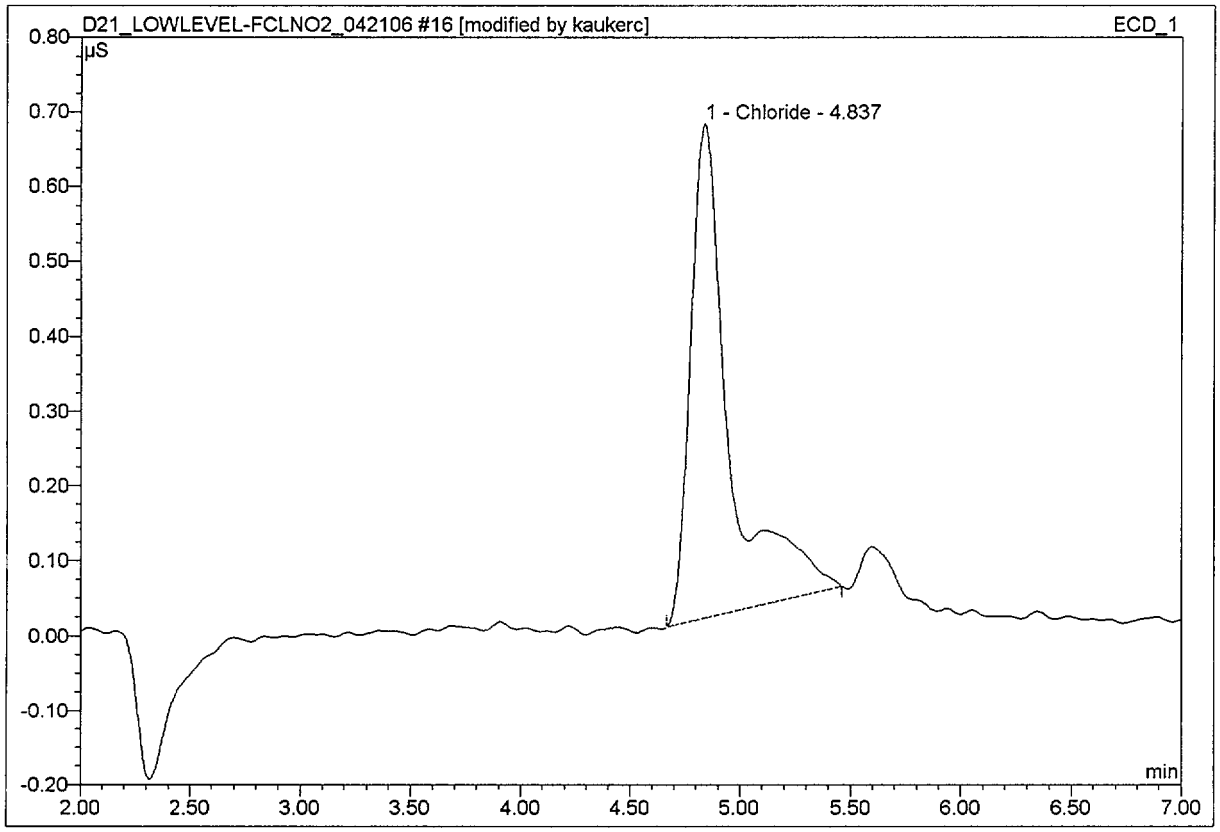

| No. | Ret.Time (min.) | Peak Name | Height (uS) | Area µS*min | Rel.Area (%) | Amount (mg/L) | Peak Type |
|---|---|---|---|---|---|---|---|
| 1 | 4.83 | Chloride | 0.70199 | 0.134 | 0.58 | 3.5668 | BMB |
| 2 | 7.78 | n.a. | 0.37046 | 0.087 | 0.38 | n.a. | BMB |
| 3 | 12.41 | n.a. | 66.81145 | 22.670 | 99.03 | n.a. | BMB |

Operator:kaukerc Timebase:ICS1500 Sequence:D21_LOWLEVEL-FCLNO2_042106


4/24/2006 1:02 PM

## 16 H6D040103 H2H7P 1/10

| | | | |
|---|---|---|---|
| *Sample Name:* | **H6D040103 H2H7P 1/10** | *Injection Volume:* | **50.0** |
| *Vial Number:* | **1248** | *Channel:* | **ECD_1** |
| *Sample Type:* | **unknown** | *Wavelength:* | **n.a.** |
| *Control Program:* | **AS14A ANIONS METHOD** | *Bandwidth:* | **n.a.** |
| *Quantif. Method:* | **AS4A-SC ANION METHOD** | *Dilution Factor:* | **10.0000** |
| *Recording Time:* | **4/21/2006 11:33** | *Sample Weight:* | **1.0000** |
| *Run Time (min):* | **15.00** | *Sample Amount:* | **1.0000** |

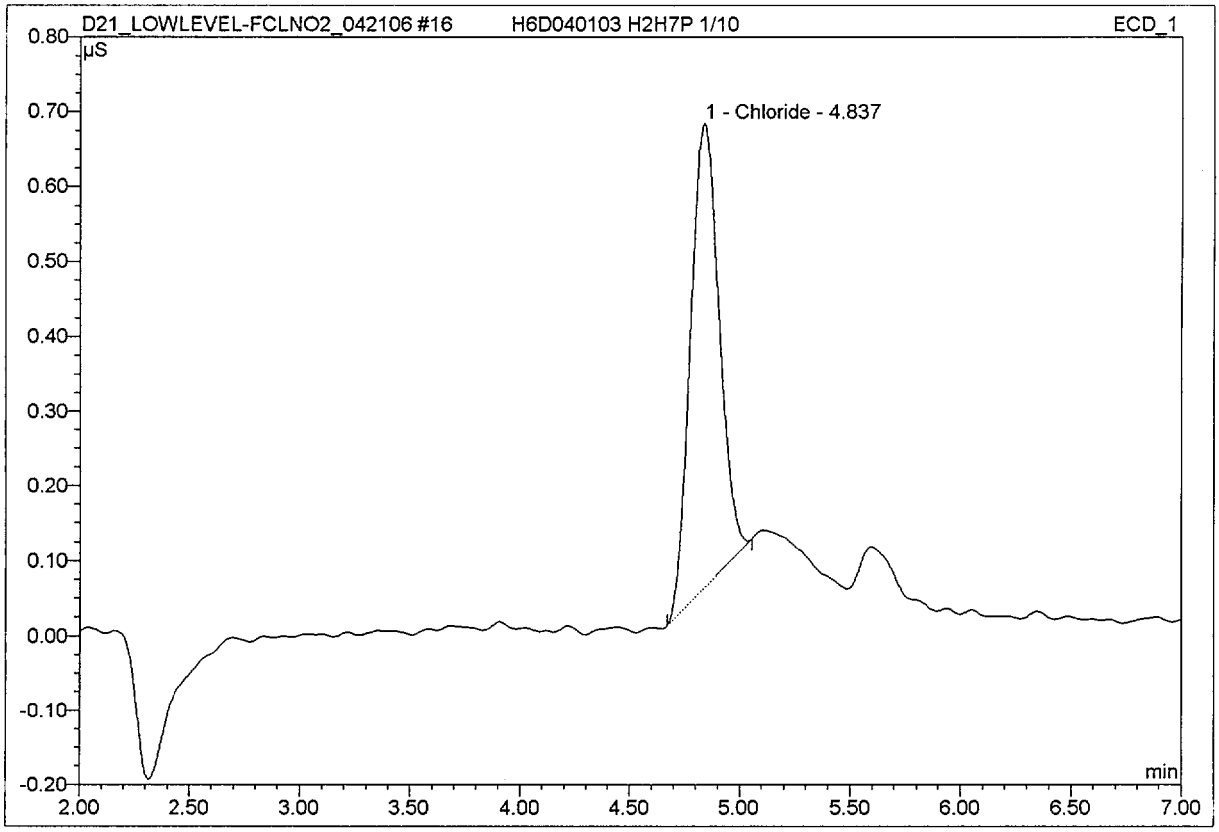



| No. | Ret.Time (min.) | Peak Name | Height (uS) | Area µS*min | Rel.Area (%) | Amount (mg/L) | Peak Type |
|---|---|---|---|---|---|---|---|
| 1 | 4.84 | Chloride | 0.65981 | 0.135 | 0.46 | 3.3494 | BMB* |
| 2 | 7.76 | n.a. | 4.96453 | 1.151 | 3.90 | n.a. | BMB |
| 3 | 12.40 | n.a. | 82.41413 | 28.243 | 95.65 | n.a. | BMB |

manual integration
CWK (B)
4/24/06

# 16 H6D040103 H2H7P 1/10

| | | | |
|---|---|---|---|
| *Sample Name:* | **H6D040103 H2H7P 1/10** | *Injection Volume:* | **50.0** |
| *Vial Number:* | **1248** | *Channel:* | **ECD_1** |
| *Sample Type:* | **unknown** | *Wavelength:* | **n.a.** |
| *Control Program:* | **AS14A ANIONS METHOD** | *Bandwidth:* | **n.a.** |
| *Quantif. Method:* | **AS4A-SC ANION METHOD** | *Dilution Factor:* | **10.0000** |
| *Recording Time:* | **4/21/2006 11:33** | *Sample Weight:* | **1.0000** |
| *Run Time (min):* | **15.00** | *Sample Amount:* | **1.0000** |

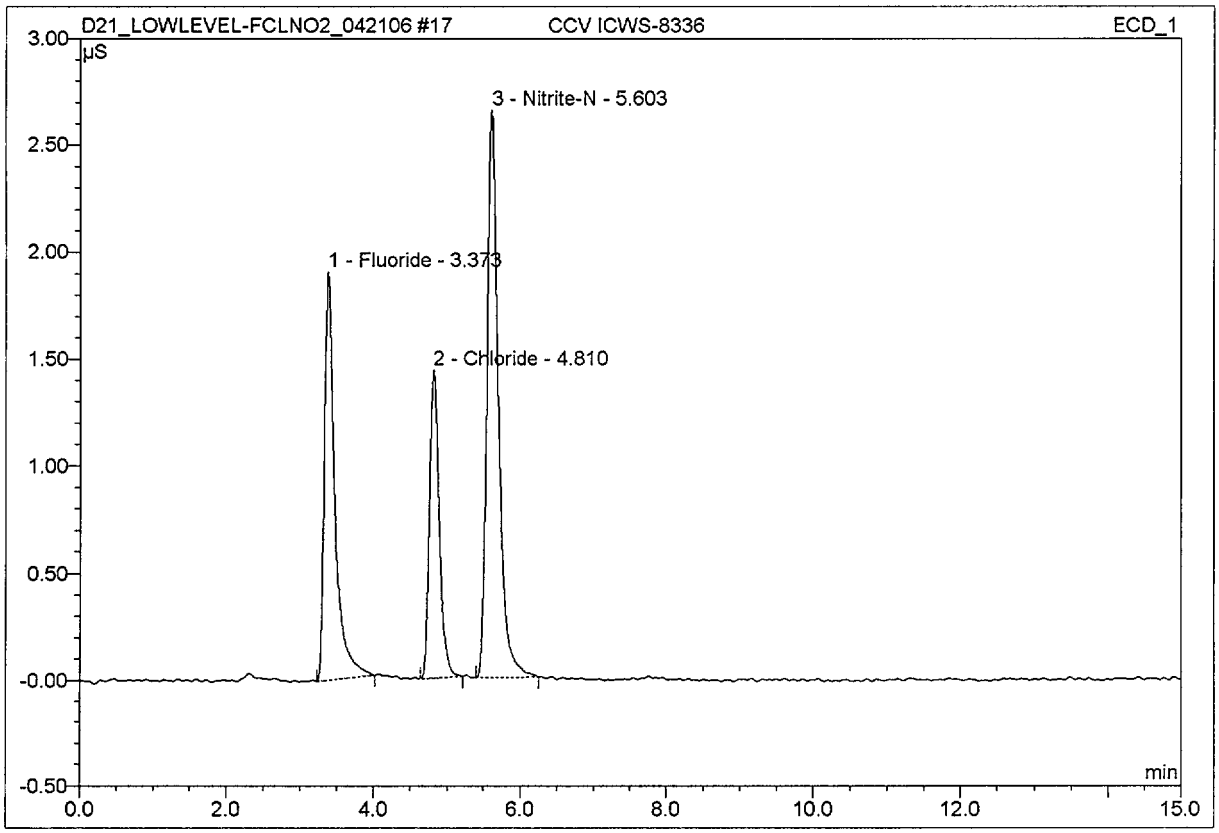



| No. | Ret.Time (min.) | Peak Name | Height (uS) | Area µS*min | Rel.Area (%) | Amount (mg/L) | Peak Type |
|---|---|---|---|---|---|---|---|
| 1 | 4.84 | Chloride | 0.62005 | 0.093 | 0.32 | 3.1444 | BMB |
| 2 | 7.76 | n.a. | 4.96453 | 1.151 | 3.90 | n.a. | BMB |
| 3 | 12.40 | n.a. | 82.41413 | 28.243 | 95.78 | n.a. | BMB |

original

# 17 CCV ICWS-8336

| | | | |
|---|---|---|---|
| *Sample Name:* | **CCV ICWS-8336** | *Injection Volume:* | **50.0** |
| *Vial Number:* | **1249** | *Channel:* | **ECD_1** |
| *Sample Type:* | **unknown** | *Wavelength:* | **n.a.** |
| *Control Program:* | **AS14A ANIONS METHOD** | *Bandwidth:* | **n.a.** |
| *Quantif. Method:* | **AS4A-SC ANION METHOD** | *Dilution Factor:* | **1.0000** |
| *Recording Time:* | **4/21/2006 11:50** | *Sample Weight:* | **1.0000** |
| *Run Time (min):* | **15.00** | *Sample Amount:* | **1.0000** |

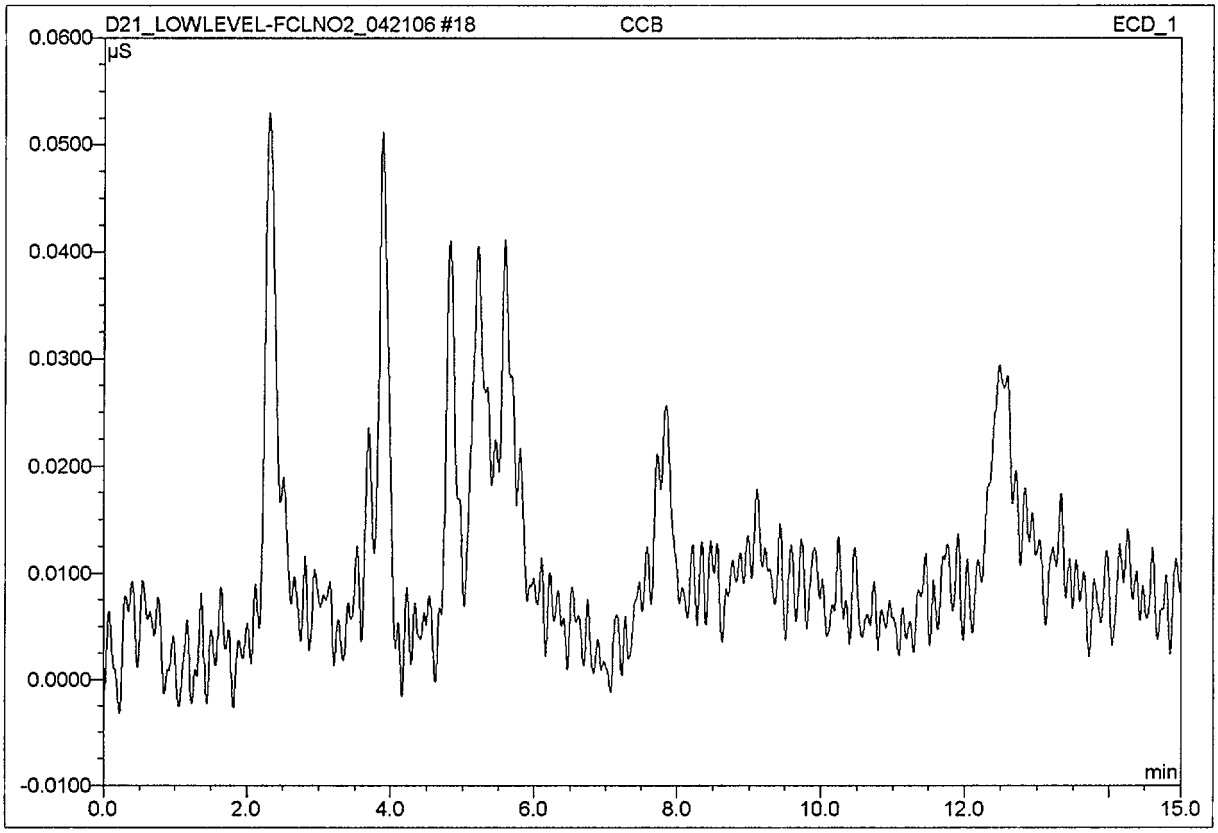



| No. | Ret.Time (min.) | Peak Name | Height (uS) | Area µS*min | Rel.Area (%) | Amount (mg/L) | Peak Type |
|---|---|---|---|---|---|---|---|
| 1 | 3.37 | Fluoride | 1.90669 | 0.313 | 30.70 | 0.6654 | BMB |
| 2 | 4.81 | Chloride | 1.43798 | 0.222 | 21.75 | 0.7342 | BMB |
| 3 | 5.60 | Nitrite-N | 2.64768 | 0.486 | 47.55 | 0.7363 | BMB |

97.9%R

# 18 CCB

| | | | |
|---|---|---|---|
| *Sample Name:* | **CCB** | *Injection Volume:* | **50.0** |
| *Vial Number:* | **1250** | *Channel:* | **ECD_1** |
| *Sample Type:* | **unknown** | *Wavelength:* | **n.a.** |
| *Control Program:* | **AS14A ANIONS METHOD** | *Bandwidth:* | **n.a.** |
| *Quantif. Method:* | **AS4A-SC ANION METHOD** | *Dilution Factor:* | **1.0000** |
| *Recording Time:* | **4/21/2006 12:07** | *Sample Weight:* | **1.0000** |
| *Run Time (min):* | **15.00** | *Sample Amount:* | **1.0000** |

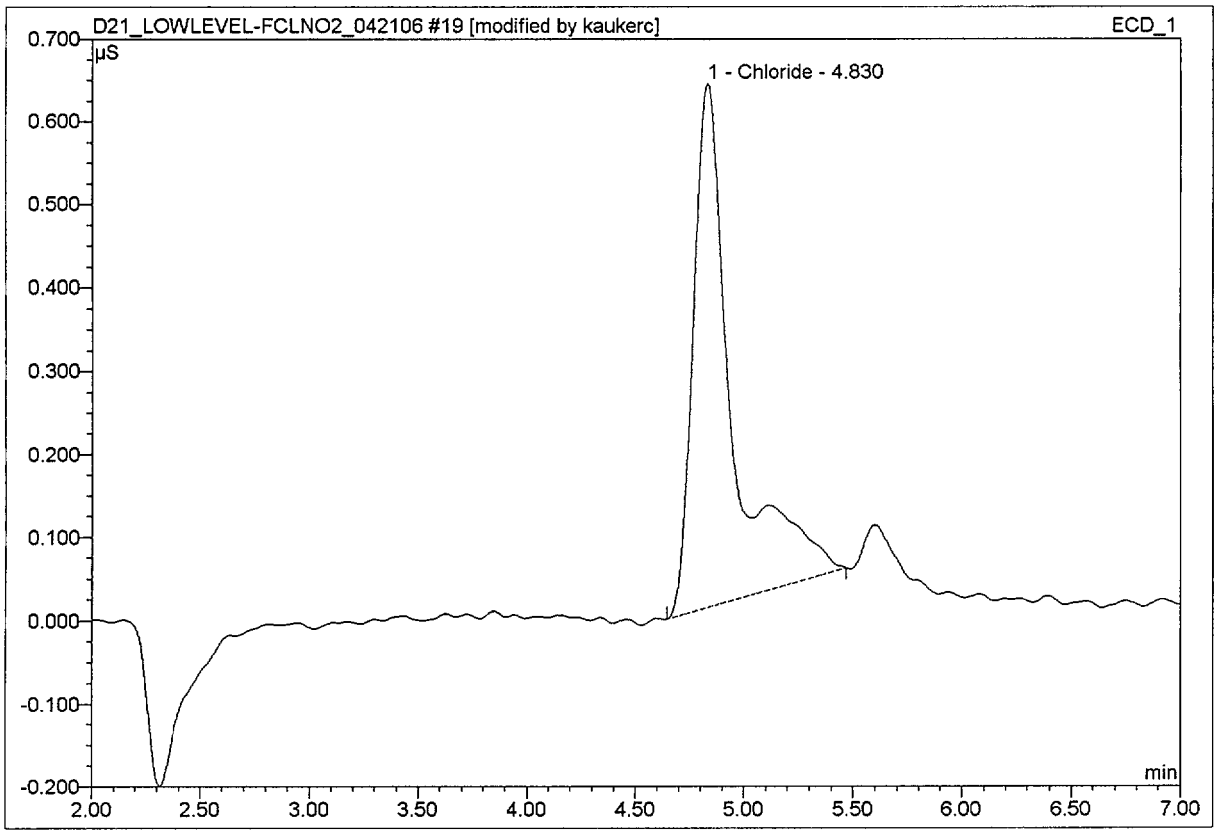



| No. | Ret.Time (min.) | Peak Name | Height (uS) | Area µS*min | Rel.Area (%) | Amount (mg/L) | Peak Type |
|---|---|---|---|---|---|---|---|

ND

# 19 H6D040103 H2H7P DUP 1/10

| | | | |
|---|---|---|---|
| *Sample Name:* | **H6D040103 H2H7P DUP 1/10** | *Injection Volume:* | **50.0** |
| *Vial Number:* | **1251** | *Channel:* | **ECD_1** |
| *Sample Type:* | **unknown** | *Wavelength:* | **n.a.** |
| *Control Program:* | **AS14A ANIONS METHOD** | *Bandwidth:* | **n.a.** |
| *Quantif. Method:* | **AS4A-SC ANION METHOD** | *Dilution Factor:* | **10.0000** |
| *Recording Time:* | **4/21/2006 12:25** | *Sample Weight:* | **1.0000** |
| *Run Time (min):* | **15.00** | *Sample Amount:* | **1.0000** |

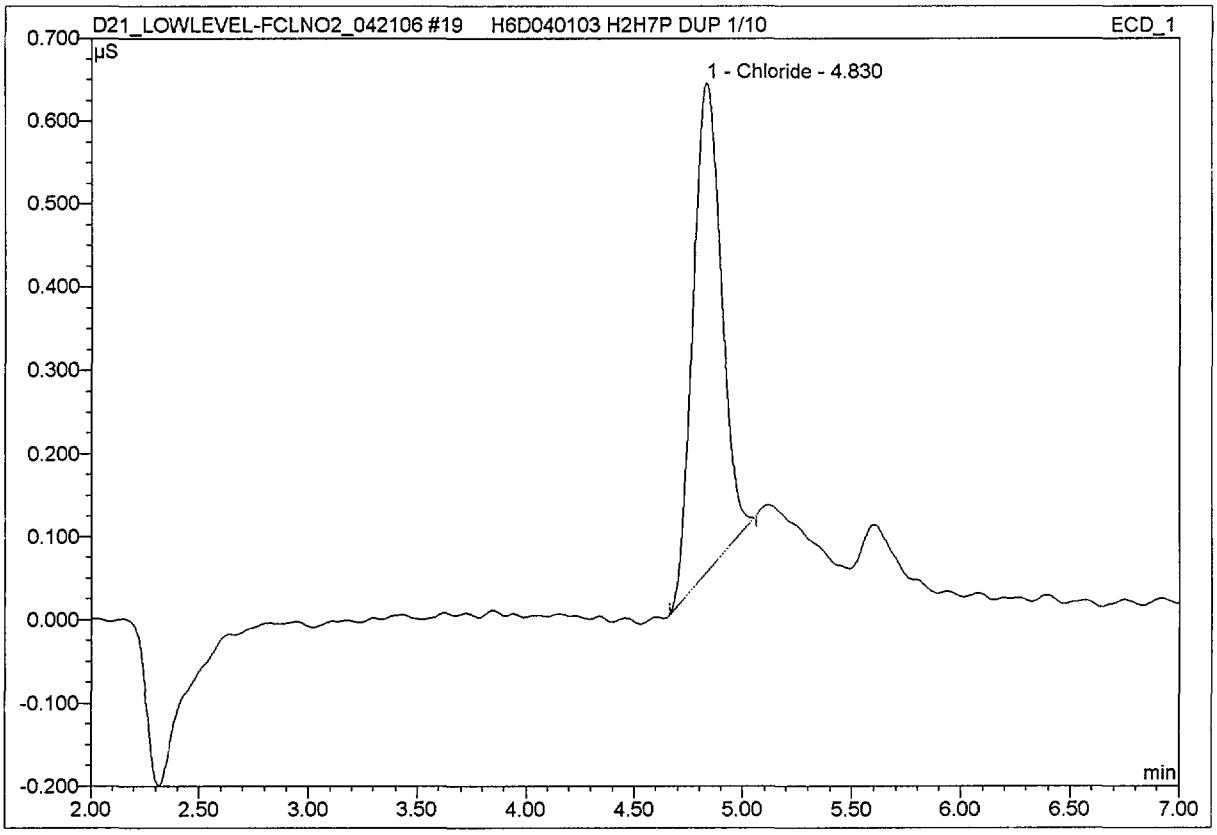



| No. | Ret.Time (min.) | Peak Name | Height (uS) | Area µS*min | Rel.Area (%) | Amount (mg/L) | Peak Type |
|---|---|---|---|---|---|---|---|
| 1 | 4.83 | Chloride | 0.62967 | 0.131 | 0.45 | 3.1940 | BMB* |
| 2 | 7.75 | n.a. | 4.94284 | 1.143 | 3.89 | n.a. | BMB |
| 3 | 12.40 | n.a. | 82.06895 | 28.147 | 95.67 | n.a. | BMB |

manual integration
CWK (B)
9/24/06

# 19 H6D040103 H2H7P DUP 1/10

| | | | |
|---|---|---|---|
| *Sample Name:* | **H6D040103 H2H7P DUP 1/10** | *Injection Volume:* | **50.0** |
| *Vial Number:* | **1251** | *Channel:* | **ECD_1** |
| *Sample Type:* | **unknown** | *Wavelength:* | **n.a.** |
| *Control Program:* | **AS14A ANIONS METHOD** | *Bandwidth:* | **n.a.** |
| *Quantif. Method:* | **AS4A-SC ANION METHOD** | *Dilution Factor:* | **10.0000** |
| *Recording Time:* | **4/21/2006 12:25** | *Sample Weight:* | **1.0000** |
| *Run Time (min):* | **15.00** | *Sample Amount:* | **1.0000** |

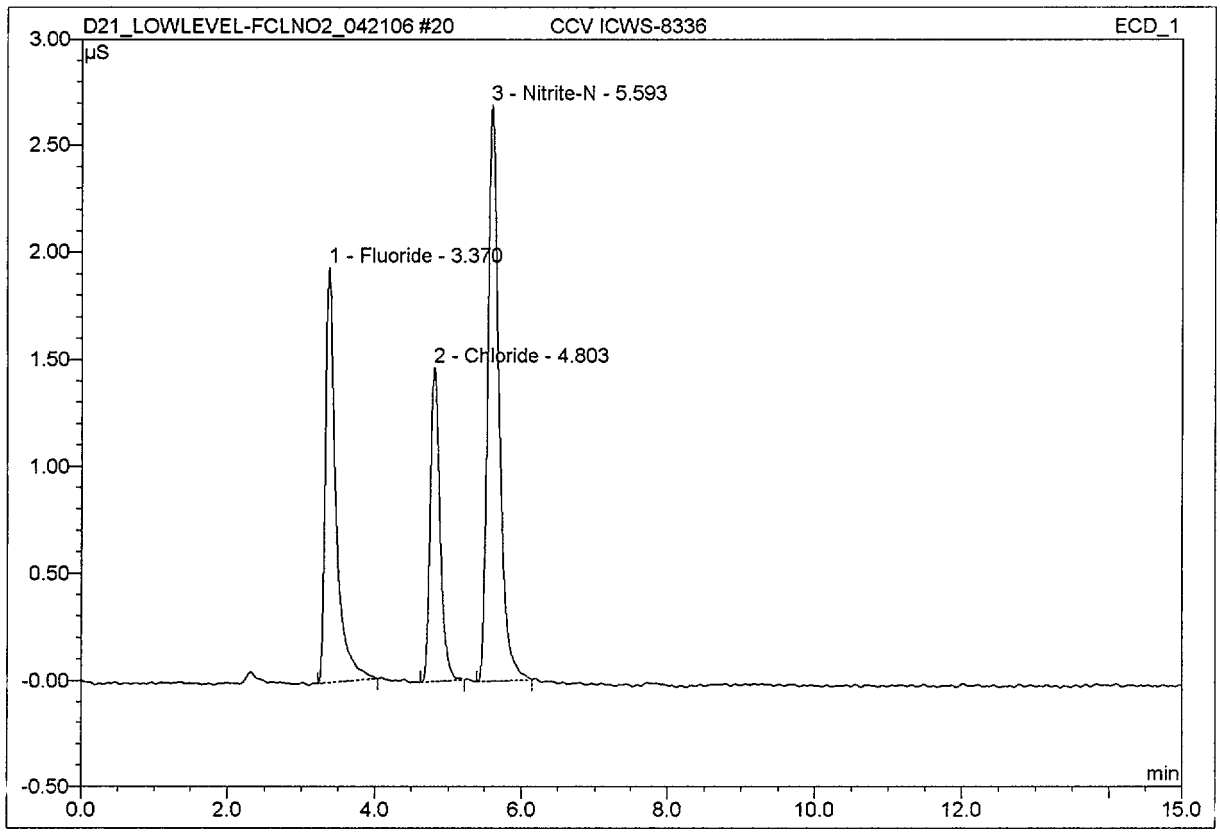



| No. | Ret.Time (min.) | Peak Name | Height (uS) | Area µS*min | Rel.Area (%) | Amount (mg/L) | Peak Type |
|---|---|---|---|---|---|---|---|
| 1 | 4.83 | Chloride | 0.58898 | 0.089 | 0.30 | 2.9842 | BMB |
| 2 | 7.75 | n.a. | 4.94284 | 1.143 | 3.89 | n.a. | BMB |
| 3 | 12.40 | n.a. | 82.06895 | 28.147 | 95.81 | n.a. | BMB |

original

# 20 CCV ICWS-8336

| | | | |
|---|---|---|---|
| *Sample Name:* | **CCV ICWS-8336** | *Injection Volume:* | **50.0** |
| *Vial Number:* | **1258** | *Channel:* | **ECD_1** |
| *Sample Type:* | **unknown** | *Wavelength:* | **n.a.** |
| *Control Program:* | **AS14A ANIONS METHOD** | *Bandwidth:* | **n.a.** |
| *Quantif. Method:* | **AS4A-SC ANION METHOD** | *Dilution Factor:* | **1.0000** |
| *Recording Time:* | **4/21/2006 12:42** | *Sample Weight:* | **1.0000** |
| *Run Time (min):* | **15.00** | *Sample Amount:* | **1.0000** |

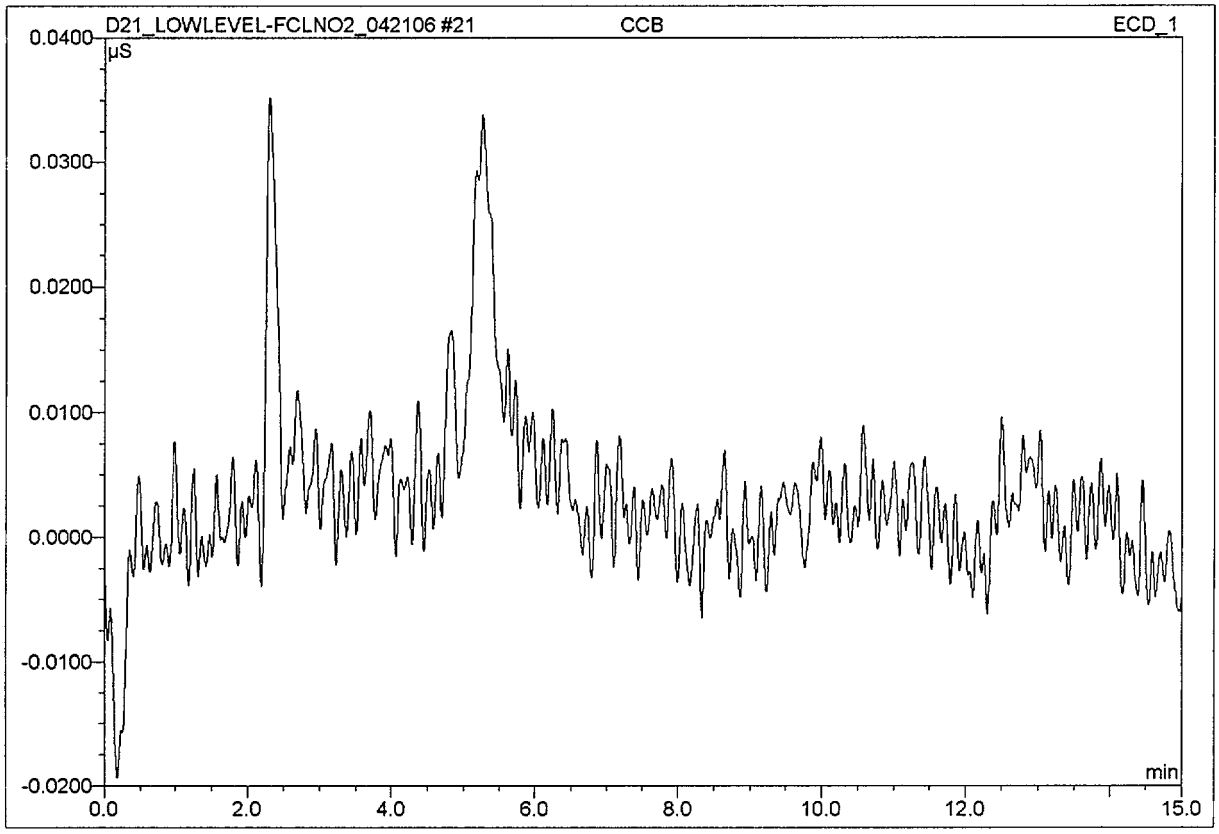



| No. | Ret.Time (min.) | Peak Name | Height (uS) | Area µS*min | Rel.Area (%) | Amount (mg/L) | Peak Type |
|---|---|---|---|---|---|---|---|
| 1 | 3.37 | Fluoride | 1.94056 | 0.320 | 30.93 | 0.6766 | BMB |
| 2 | 4.80 | Chloride | 1.46825 | 0.226 | 21.85 | 0.7497 | BMB |
| 3 | 5.59 | Nitrite-N | 2.69337 | 0.488 | 47.22 | 0.7486 | BMB |

99.9% R

# 21 CCB

| | | | |
|---|---|---|---|
| *Sample Name:* | **CCB** | *Injection Volume:* | **50.0** |
| *Vial Number:* | **1259** | *Channel:* | **ECD_1** |
| *Sample Type:* | **unknown** | *Wavelength:* | **n.a.** |
| *Control Program:* | **AS14A ANIONS METHOD** | *Bandwidth:* | **n.a.** |
| *Quantif. Method:* | **AS4A-SC ANION METHOD** | *Dilution Factor:* | **1.0000** |
| *Recording Time:* | **4/21/2006 13:00** | *Sample Weight:* | **1.0000** |
| *Run Time (min):* | **15.00** | *Sample Amount:* | **1.0000** |




| No. | Ret.Time (min.) | Peak Name | Height (uS) | Area µS*min | Rel.Area (%) | Amount (mg/L) | Peak Type |
|---|---|---|---|---|---|---|---|

WD

# STL Knoxville Anions in Air Data Review / Narrative Checklist for Methods 9056/9057/26A, SOP KNOX-WC-0005, Rev. 5



| Lot Number | H6D100156 H6D040331, H6D040103 | Analysis Date: | 4/25/06 | File ID: | D25 - LOWLEVEL-FCLNO2- 042506 | ICAL File ID: | C23-LOWLEVEL-FCLNO2-032306 |
|---|---|---|---|---|---|---|---|

| Review Items | NA | Yes | No | If No, why is data reportable? | 2nd ✓ |
|---|---|---|---|---|---|
| 1. Were PM checklists (L40), Lot Summary and any applicable QAS reviewed? | | ✓ | | | ✓ |
| 2. ICV within 90-110%R and ICB/CCB < 1/2 RL? | | ✓ | | | ✓ |
| 3. CCVs/CCBs run after every 10 samples, and at end of sequence? | | ✓ | | | ✓ |
| 4. Is %D ≤10% for each CCV? | | ✓ | | | ✓ |
| 5. If CCV failed, was it rerun only once? | ✓ | | | | N/A |
| 6. LCS/LCSD analytes within 90-110%R? *If no, list LCS ID:* | | ✓ | | ☐ **[lcs3] LCS recovery >upper control limit & sample results are <RL.*** | ✓ |
| 7. Method blank < 1/2 RL? *If no, list blank ID:* | | ✓ | | ☐ **[mb3] No analyte > RL in associated samples.*** ☐ [mb7] Sample results > 10x higher than blank. | ✓ |
| 8. Matrix spikes run at required frequency? | | ✓ | | | ✓ |
| 9. Matrix spikes within 75-125% recovery? *If no, list MS ID:* H2H7V - high recovery due to matrix interferences. | | ✓ | ✓ | ☐ [air ms1] MS %R slightly outside limits for 1 sample. ☑ [air ms2] MS %R slightly outside limits for >1 sample. ☑ Air train reagent blank – spike result not reported. | ✓ |
| 10. Were MS run #'s assigned to all matrix spikes except reagent blanks? | | ✓ | | | ✓ |
| 11. Sample analyses done within holding time (HT)? *If no, list samples:* | | ✓ | | ☐ [ht1] HT expired upon receipt. ☐ *[ht2] Analysis requested after HT expired.** | ✓ |
| 12. Were results processed using correct ICAL? | | ✓ | | | ✓ |
| 13. Are positive results within the calibration range? | | ✓ | | | ✓ |
| 14. Is integration acceptable for all samples, QC samples and standards? | | ✓ | | | ✓ |
| 15. For manual integrated standards and QC samples, are before/after chromatograms provided with initials/date/reason? | | ✓ | | Reasons: S=Split peak, U=Undetected peak, I=Incorrect peak integration, B=Baseline correction, W=Wrong peak chosen by data system. | ✓ |
| 16. Calculations checked for error? (Document manual calculation checks.) | | ✓ | | | ✓ |
| 17. Were spreadsheets checked for transcription errors? | | ✓ | | | ✓ |
| 18. Final report/F6 correct? (Verify results, RLs, units, qualifiers, DFs, dates, spikes.) | ✓ | ✓ | | | N/A |
| 19. Are all nonconformances documented and discussed in narrative? | ✓ | | | List NCM #: | N/A |
| 20. Appropriate air train autotext selected for narrative? | | ✓ | | ☑ [air1] $Cl^-$ reported as HCl and $Cl_2$. ☐ [air2] $Cl^-$ reported as HCl only. ☐ [air3] $Cl^-$, $F^-$ reported as HCl, $Cl_2$, HF. ☐ [air4] $Cl^-$, $F^-$, $Br^-$ reported as HCl, $Cl_2$, HF, HBr, $Br_2$. ☐ [air5] $Cl^-$, $F^-$, $NO_2^-$, $NO_3^-$ reported as HCl, $Cl_2$, HF, $HNO_2$, $HNO_3$. ☐ [air6] $Cl^-$, $F^-$, $Br^-$, $I^-$ reported as HCl, $Cl_2$, HF, HBr, $Br_2$, $I^-$. ☐ [air7] $Cl^-$, $F^-$, $NO_2^-$, $NO_3^-$ reported as $Cl^-$, $F^-$, $NO_2^-$, $NO_3^-$. | ✓ |
| 21. Sample pH adjustment included in narrative? | ✓ | | | ☐ [air pH] Sample pH adjusted prior to analysis. | N/A |
| 22. Audit sample results included in narrative? | ✓ | | | ☐ [audit2] Audit results in mg/L. | N/A |

| Analyst: CWK | Date: 4/25/06 | 2nd Level Reviewer: [signature] | Date: 4/27/06 |
|---|---|---|---|
| Comments: H2K9M MS 1150 | | Comments: | |

$y = 0.012524 + 1.92498(0.173218) + 0.022501(0.173218)^2$

$y = 0.012524 + 0.333441186 + 0.000675053$

$y = 0.3466$ ✓

* Such action must be taken in consultation with client.

Nonconformance memos are required for **bold** and *italicized* [autotext] statements: **Bold** = deficiency, *italicized* = anomoly.

# STL Knoxville
# Hydrogen Chloride (HCl) Analysis

Batch No.: 6115303
QuantIMS RL (ug/mL): 1.0
QuantIMS MDL (ug/mL): 0.3
Low Calibration Standard (ug/mL): 0.1

2nd Level Review by: [signature]
Date: 4/27/06
No. of Significant Figures: 3

| Sample Type | Lab ID | Sample Volume (mL) | Bench Dilution | Final Chloride Result (ug/mL) (Corrected for bench dilution) | **Rounded Result ug HCl** | Rounded RL ug HCl | Rounded MDL ug HCl | **QuantIMS Dilution Factor** |
|---|---|---|---|---|---|---|---|---|
| BLANK | H31Q81AA | 100 | 1 | 0.000 | **ND** | 10.3 | 3.09 | **10.3** |
| LCS | H31Q81AC | 100 | 1 | 0.509 | **52.4** | 10.3 | 3.09 | **10.3** |
| LCSD | H31Q81AD | 100 | 1 | 0.503 | **51.7** | 10.3 | 3.09 | **10.3** |
| SPIKE ADDED | | 100 | 1 | 0.500 | **51.4** | 10.3 | 3.09 | **10.3** |
| | H2H7F | 100 | 50 | 0.351 | **ND** | 514 | 154 | **514.2** |
| | H2H7F DUP | 100 | 50 | 0.796 | **ND** | 514 | 154 | **514.2** |
| | H2H7F MS | 100 | 50 | 8.473 | **871** | 514 | 154 | **514.2** |
| SPIKE ADDED | | 100 | 50 | 10.000 | **1,030** | 514 | 154 | **514.2** |

H6D040103

**Rounded Result, ug HCl** = Chloride result (ug/mL) x (MW HCl/MW Cl) x Sample Volume (mL)
**Rounded RL, ug HCl** = Low Calibration Standard (ug/mL) x (MW HCl/MW Cl) x Sample Volume (mL) x Bench Dilution
**Rounded MDL, ug HCl** = QuantIMS MDL (ug/mL) x Low Calibration Standard (ug/mL) / QuantIMS RL (ug/mL) x (MW HCl/MW Cl) x Sample Volume (mL) x Bench Dilution
**QuantIMS Dilution Factor** = Sample Volume (mL) x Bench Dilution x Low Calibration Standard (ug/mL) / QuantIMS RL (ug/mL) x (MW HCl/MW Cl)
**Molecular Weight (MW) HCl** = 1.0079 + 35.453 = 36.4609
**Molecular Weight (MW) Cl** = 35.453

# STL Knoxville
# Chlorine ($Cl_2$) Analysis

Batch No.: 6116088
QuantIMS RL (ug/mL): 1.0
QuantIMS MDL (ug/mL): 0.3
Low Calibration Standard (ug/mL): 0.1

2nd Level Review by: [signature]
Date: 4/27/06
No. of Significant Figures: 3

| Sample Type | Lab ID | Sample Volume (mL) | Bench Dilution | Final Chloride Result (ug/mL) (Corrected for bench dilution) | **Rounded Result ug $Cl_2$** | Rounded RL ug $Cl_2$ | Rounded MDL ug $Cl_2$ | **QuantIMS Dilution Factor** |
|---|---|---|---|---|---|---|---|---|
| BLANK | H33H91AA | 100 | 1 | 0.000 | **ND** | 10.0 | 3.00 | **10.0** |
| LCS | H33H91AC | 100 | 1 | 0.509 | **50.9** | 10.0 | 3.00 | **10.0** |
| LCSD | H33H91AD | 100 | 1 | 0.503 | **50.3** | 10.0 | 3.00 | **10.0** |
| SPIKE ADDED | | 100 | 1 | 0.500 | **50.0** | 10.0 | 3.00 | **10.0** |
| | H2H7V | 305 | 20 | 6.377 | **1,940** | 610 | 183 | **610.0** |
| | H2H7V DUP | 305 | 20 | 6.311 | **1,920** | 610 | 183 | **610.0** |
| | H2H7V MS | 305 | 20 | 12.000 | **3,660** | 610 | 183 | **610.0** |
| | H2H7V MSD | 305 | 20 | 11.942 | **3,640** | 610 | 183 | **610.0** |
| SPIKE ADDED | | 305 | 20 | 4.000 | **1,220** | 610 | 183 | **610.0** |

**Rounded Result, ug $Cl_2$** = Chloride result (ug/mL) x Sample Volume (mL)

**Rounded RL, ug $Cl_2$** = Low Calibration Standard (ug/mL) x Sample Volume (mL) x Bench Dilution

**Rounded MDL, ug $Cl_2$** = QuantIMS MDL (ug/mL) x Low Calibration Standard (ug/mL) / QuantIMS RL (ug/mL) x Sample Volume (mL) x Bench Dilution

**QuantIMS Dilution Factor** = Sample Volume (mL) x Bench Dilution x Low Calibration Standard (ug/mL) / QuantIMS RL (ug/mL)

# STL Knoxville
# Dionex IC Runlog Cover Page

| Analyst: | CWK | Date: | 4/25/06 | Sequence ID: | D25-LOWLEVEL-FCLNO2-042506 |
|---|---|---|---|---|---|

| Instrument: | ☐ DX-600 | Method: | ☐ KNOX-WC-0003, SW-846 0061/7199 |
|---|---|---|---|
| | ☑ ICS-1500 | | ☐ KNOX-WC-0005, ☐ SW-846 9056 ☐ EPA 300.0 ☐ SW-846 9057-Mod ☑ EPA 26A-Mod |
| | ☐ DX-320 | | ☐ KNOX-WC-0014, EPA 314.0 |

| Preventive Maintenance | Instrument Conditions | | |
|---|---|---|---|
| **Daily:** | Flow Rate = | 1.00 | mL/min |
| ☑ Check pump and gas pressure | Pressure = | 2060 | psi |
| ☑ Check all lines for crimping, leaks and discoloration | Conductance = | 24.7 | µS |
| **As Needed:** | Suppressor Current = | 43 | mA |
| ☐ Change column and guard column | Eluent Generator = | — | mM KOH |
| ☐ Change column and/or guard column bed support | | | |
| ☐ Clean conductivity cell | | | |
| ☐ De-gas pump head when flow is erratic | | | |
| ☐ Check/replace eluant end line filter | | | |

**MS/MSD Spike Information**

| WO # | Compound | Spike ID | Parent Conc. | Spike Added (mL) | Final Volume (mL) | Final Conc. |
|---|---|---|---|---|---|---|
| H2H7F | Cl- | ICWI-8262 | 100 ppm | 0.020 mL | 10mL | 0.2 ppm |
| H2K9M | Cl | \| | \| | \| | \| | \| |
| H2XPC | Cl- | ICWI-8262 | 100 ppm | 0.020 mL | 10 mL | 0.2 ppm |
| H2XPV | Cl- | \| | \| | \| | \| | \| |
| H2H7V | Cl- | \| | \| | \| | \| | \| |
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**Comments:**

High recovery due to matrix interferences for sample H2H7V (H6D040103).

☑ Sodium Thiosulfate added to NaOH impinger samples.

Sequence: D25_LOWLEVEL-FCLNO2_042506
Operator: kaukerc


Printed: 4/26/2006 10:15:07 AM

Title:
Datasource: ICS_1500_net
Location: ICS1500
Timebase: ICS1500
#Samples: 42

CWK 4/26/06

Created: 4/25/2006 9:18:45 AM by kaukerc
Last Update: 4/26/2006 10:13:43 AM by kaukerc

| No. | Name | Sample ID | Inj. Vol. | Inj. Date/Time | Dil. Factor | *Multiplier [Liters] | Weight |
|---|---|---|---|---|---|---|---|
| 1 | CAL STD #2 ICWS-8231 | | 50.0 | 3/23/2006 10:51:01 AM | 1.0000 | | 1.0000 |
| 2 | CAL STD #3 ICWS-8232 | | 50.0 | 3/23/2006 11:08:25 AM | 1.0000 | | 1.0000 |
| 3 | CAL STD #4 ICWS-8233 | | 50.0 | 3/23/2006 11:25:49 AM | 1.0000 | | 1.0000 |
| 4 | CAL STD #5 ICWS-8234 | | 50.0 | 3/23/2006 11:43:13 AM | 1.0000 | | 1.0000 |
| 5 | CAL STD #6 ICWS-8235 | | 50.0 | 3/23/2006 12:00:37 PM | 1.0000 | | 1.0000 |
| 6 | CAL STD #1 ICWS-8230 | | 50.0 | 3/23/2006 12:37:04 PM | 1.0000 | | 1.0000 |
| 7 | ICV/LCS ICWS-8346 | | 50.0 | 4/25/2006 9:22:03 AM | 1.0000 | | 1.0000 |
| 8 | ICV/LCSD ICWS-8347 | | 50.0 | 4/25/2006 9:39:27 AM | 1.0000 | | 1.0000 |
| 9 | ICB/METHOD BLK | | 50.0 | 4/25/2006 9:56:51 AM | 1.0000 | | 1.0000 |
| 10 | H6D040331 H2K9M 1/50 | | 50.0 | 4/25/2006 10:14:15 AM | 50.0000 | | 1.0000 |
| 11 | H6D040331 H2K9M MS 1/50 0.2 PPM CL | | 50.0 | 4/25/2006 10:31:40 AM | 50.0000 | | 1.0000 |
| 12 | H6D040331 H2K9M DUP 1/50 | | 50.0 | 4/25/2006 10:49:04 AM | 50.0000 | | 1.0000 |
| 13 | H6D040103 H2H7F 1/50 | | 50.0 | 4/25/2006 11:06:28 AM | 50.0000 | | 1.0000 |
| 14 | H6D040103 H2H7F DUP 1/50 | | 50.0 | 4/25/2006 11:23:53 AM | 50.0000 | | 1.0000 |
| 15 | H6D040103 H2H7F MS 1/50 0.2 PPM CL | | 50.0 | 4/25/2006 11:41:17 AM | 50.0000 | | 1.0000 |
| 16 | H6D100156 H2XPC 1/10 | | 50.0 | 4/25/2006 12:04:07 PM | 10.0000 | | 1.0000 |
| 17 | CCV ICWS-8348 | | 50.0 | 4/25/2006 12:21:31 PM | 1.0000 | | 1.0000 |
| 18 | CCB | | 50.0 | 4/25/2006 12:38:56 PM | 1.0000 | | 1.0000 |
| 19 | H6D100156 H2XPC 1/200 | | 50.0 | 4/25/2006 12:56:20 PM | 200.0000 | | 1.0000 |
| 20 | H6D100156 H2XPC MS 1/200 0.2 PPM CL | | 50.0 | 4/25/2006 1:13:44 PM | 200.0000 | | 1.0000 |
| 21 | H6D100156 H2XPC 1/200 | | 50.0 | 4/25/2006 1:39:14 PM | 200.0000 | | 1.0000 |
| 22 | H6D100156 H2XPC MS 1/200 0.2 PPM CL | | 50.0 | 4/25/2006 1:56:39 PM | 200.0000 | | 1.0000 |
| 23 | H6D100156 H2XPC DUP 1/200 | | 50.0 | 4/25/2006 2:14:03 PM | 200.0000 | | 1.0000 |
| 24 | H6D100156 H2XPP 1/200 | | 50.0 | 4/25/2006 2:40:20 PM | 200.0000 | | 1.0000 |
| 25 | H6D100156 H2XPP DUP 1/200 | | 50.0 | 4/25/2006 2:57:45 PM | 200.0000 | | 1.0000 |
| 26 | H6D100156 H2XPK 1/200 | | 50.0 | 4/25/2006 3:15:10 PM | 200.0000 | | 1.0000 |
| 27 | H6D100156 H2XPK DUP 1/200 | | 50.0 | 4/25/2006 3:32:34 PM | 200.0000 | | 1.0000 |
| 28 | H6D100156 H2XPV 1/50 | | 50.0 | 4/25/2006 3:49:58 PM | 50.0000 | | 1.0000 |
| 29 | CCV ICWS-8348 | | 50.0 | 4/25/2006 4:07:22 PM | 1.0000 | | 1.0000 |
| 30 | CCB | | 50.0 | 4/25/2006 4:24:46 PM | 1.0000 | | 1.0000 |
| 31 | H6D100156 H2XPV DUP 1/50 | | 50.0 | 4/25/2006 4:42:10 PM | 50.0000 | | 1.0000 |
| 32 | H6D100156 H2XPV MS 1/50 0.2 PPM CL | | 50.0 | 4/25/2006 4:59:34 PM | 50.0000 | | 1.0000 |
| 33 | H6D100156 H2XPV 1/100 | | 50.0 | 4/25/2006 5:16:58 PM | 100.0000 | | 1.0000 |
| 34 | H6D100156 H2XPV DUP 1/100 | | 50.0 | 4/25/2006 5:34:23 PM | 100.0000 | | 1.0000 |
| 35 | H6D100156 H2XPV MS 1/100 0.2 PPM CL | | 50.0 | 4/25/2006 5:51:47 PM | 100.0000 | | 1.0000 |
| 36 | H6D040103 H2H7V 1/20 | | 50.0 | 4/25/2006 6:09:11 PM | 20.0000 | | 1.0000 |
| 37 | H6D040103 H2H7V DUP 1/20 | | 50.0 | 4/25/2006 6:41:36 PM | 20.0000 | | 1.0000 |
| 38 | H6D040103 H2H7V MS 1/20 0.2PPM CL | | 50.0 | 4/25/2006 7:14:00 PM | 20.0000 | | 1.0000 |
| 39 | H6D040103 H2H7V MSD 1/20 0.2PPM CL | | 50.0 | 4/25/2006 7:46:24 PM | 20.0000 | | 1.0000 |
| 40 | CCV ICWS-8348 | | 50.0 | 4/25/2006 8:18:49 PM | 1.0000 | | 1.0000 |
| 41 | CCB | | 50.0 | 4/25/2006 8:36:13 PM | 1.0000 | | 1.0000 |

Sequence: D25_LOWLEVEL-FCLNO2_042506
Operator: kaukerc


Printed: 4/26/2006 10:15:07 AM

CWK 4/26/06

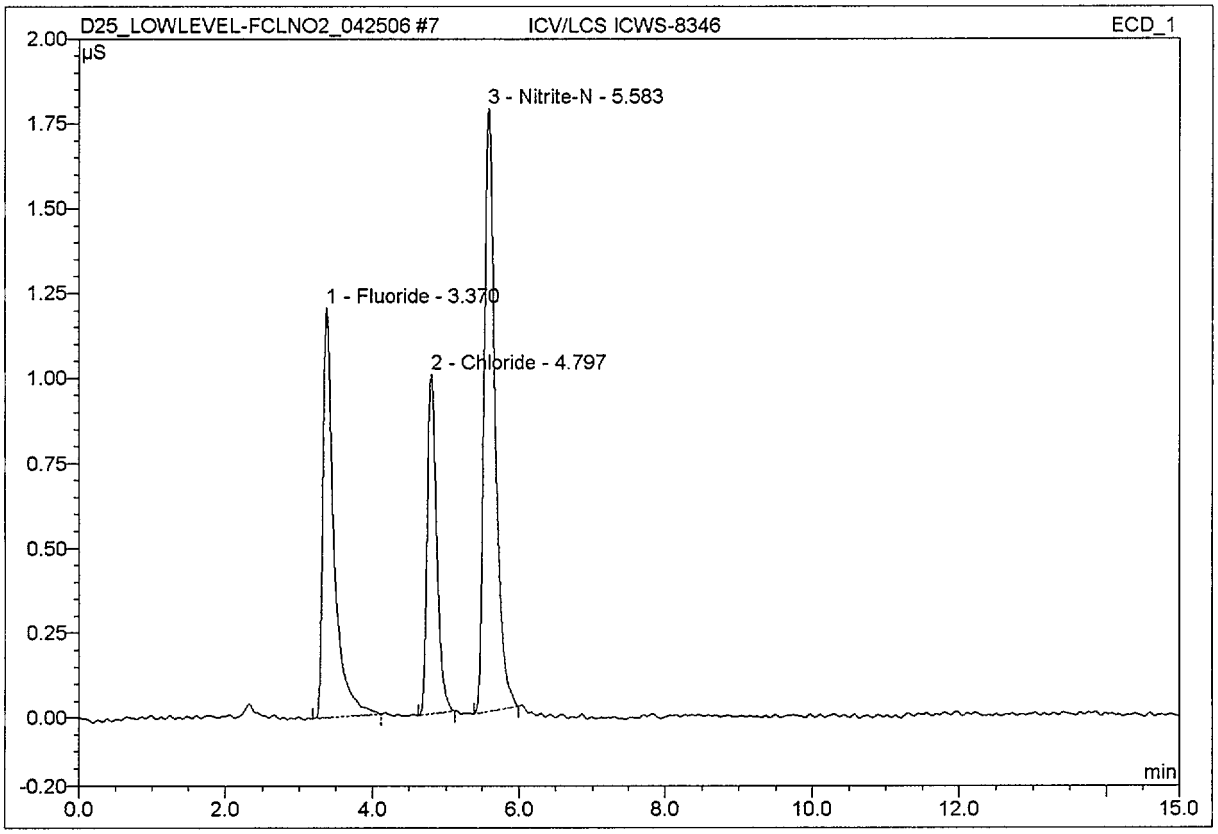
Title:
Datasource: ICS_1500_net
Location: ICS1500
Timebase: ICS1500
#Samples: 42

Created: 4/25/2006 9:18:45 AM by kaukerc
Last Update: 4/26/2006 10:13:43 AM by kaukerc

| No. | Name | Sample ID | Inj. Vol. | Inj. Date/Time | Dil. Factor | *Multiplier [Liters] | Weight |
|---|---|---|---|---|---|---|---|
| 42 | SHUTDOWN | | 50.0 | 4/25/2006 8:53:37 PM | 1.0000 | | 1.0000 |

# 7 ICV/LCS ICWS-8346

| | | | |
|---|---|---|---|
| *Sample Name:* | **ICV/LCS ICWS-8346** | *Injection Volume:* | **50.0** |
| *Vial Number:* | **1207** | *Channel:* | **ECD_1** |
| *Sample Type:* | **unknown** | *Wavelength:* | **n.a.** |
| *Control Program:* | **AS14A ANIONS METHOD** | *Bandwidth:* | **n.a.** |
| *Quantif. Method:* | **AS4A-SC ANION METHOD** | *Dilution Factor:* | **1.0000** |
| *Recording Time:* | **4/25/2006 9:22** | *Sample Weight:* | **1.0000** |
| *Run Time (min):* | **15.00** | *Sample Amount:* | **1.0000** |



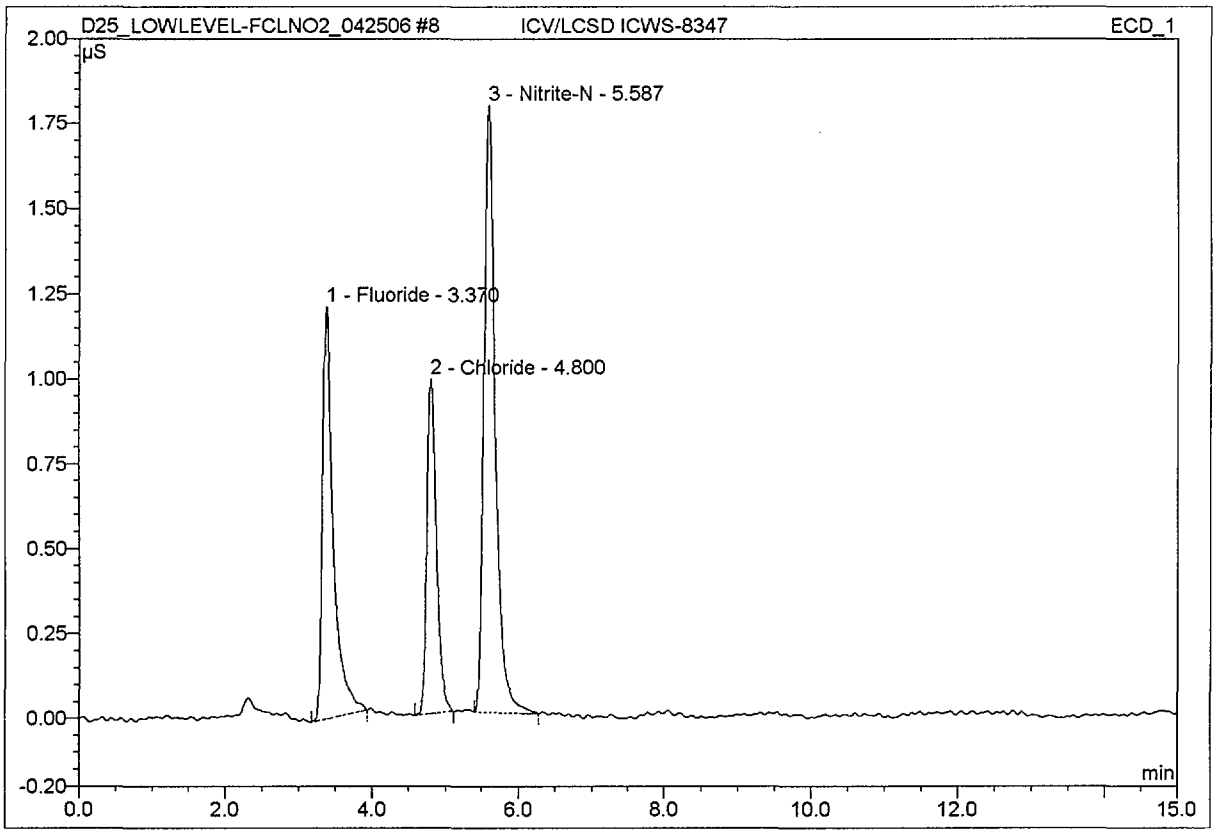

| No. | Ret.Time (min.) | Peak Name | Height (uS) | Area µS*min | Rel.Area (%) | Amount (mg/L) | Peak Type |
|---|---|---|---|---|---|---|---|
| 1 | 3.37 | Fluoride | 1.20690 | 0.210 | 31.13 | 0.4289 | BMB |
| 2 | 4.80 | Chloride | 0.99883 | 0.150 | 22.20 | 0.5093 | BMB |
| 3 | 5.58 | Nitrite-N | 1.77443 | 0.315 | 46.67 | 0.4986 | BMB |

101.9%R

H31Q81AC H33H91AC H33JP1AC
H313G1AC

# 8 ICV/LCSD ICWS-8347

| | | | |
|---|---|---|---|
| *Sample Name:* | **ICV/LCSD ICWS-8347** | *Injection Volume:* | **50.0** |
| *Vial Number:* | **1207** | *Channel:* | **ECD_1** |
| *Sample Type:* | **unknown** | *Wavelength:* | **n.a.** |
| *Control Program:* | **AS14A ANIONS METHOD** | *Bandwidth:* | **n.a.** |
| *Quantif. Method:* | **AS4A-SC ANION METHOD** | *Dilution Factor:* | **1.0000** |
| *Recording Time:* | **4/25/2006 9:39** | *Sample Weight:* | **1.0000** |
| *Run Time (min):* | **15.00** | *Sample Amount:* | **1.0000** |




| No. | Ret.Time (min.) | Peak Name | Height (uS) | Area µS*min | Rel.Area (%) | Amount (mg/L) | Peak Type |
|---|---|---|---|---|---|---|---|
| 1 | 3.37 | Fluoride | 1.21362 | 0.206 | 30.34 | 0.4312 | BMB |
| 2 | 4.80 | Chloride | 0.98592 | 0.149 | 21.94 | 0.5027 | BMB |
| 3 | 5.59 | Nitrite-N | 1.78392 | 0.324 | 47.72 | 0.5013 | BMB |

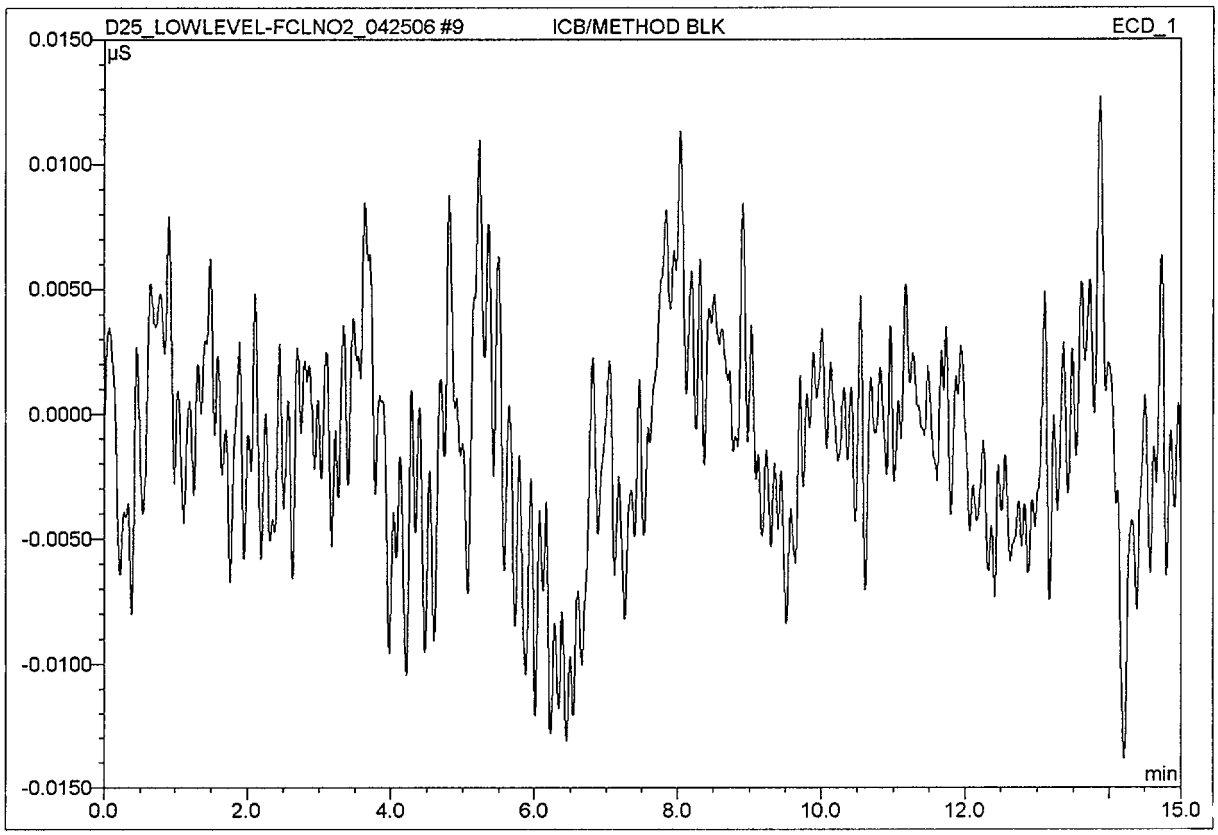
100.5%R

H31Q81AD H33H91AD H33J91AD

H313G1AD

# 9 ICB/METHOD BLK

| | | | |
|---|---|---|---|
| *Sample Name:* | **ICB/METHOD BLK** | *Injection Volume:* | **50.0** |
| *Vial Number:* | **1210** | *Channel:* | **ECD_1** |
| *Sample Type:* | **unknown** | *Wavelength:* | **n.a.** |
| *Control Program:* | **AS14A ANIONS METHOD** | *Bandwidth:* | **n.a.** |
| *Quantif. Method:* | **AS4A-SC ANION METHOD** | *Dilution Factor:* | **1.0000** |
| *Recording Time:* | **4/25/2006 9:56** | *Sample Weight:* | **1.0000** |
| *Run Time (min):* | **15.00** | *Sample Amount:* | **1.0000** |



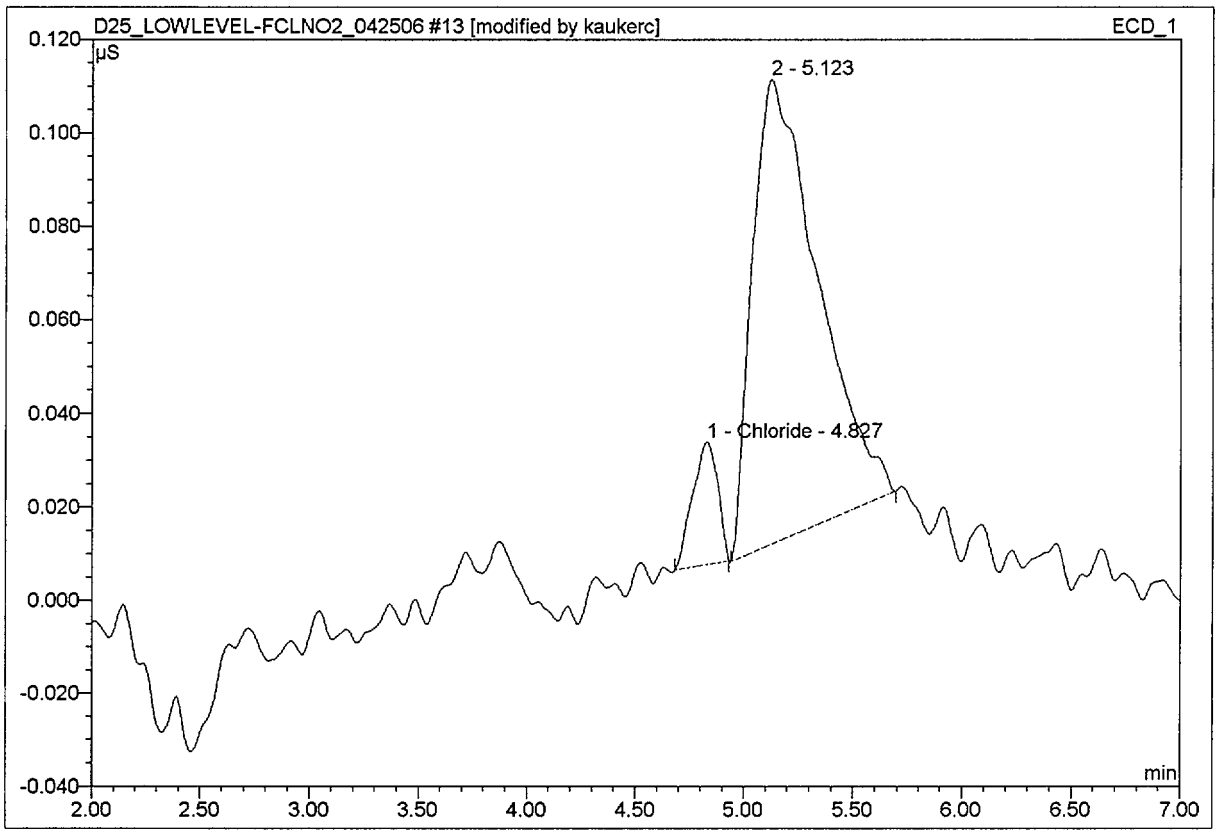

| No. | Ret.Time (min.) | Peak Name | Height (uS) | Area µS*min | Rel.Area (%) | Amount (mg/L) | Peak Type |
|---|---|---|---|---|---|---|---|

H31Q81AA H33H91AA ND

H313G1AA H33J91AA

## 13 H6D040103 H2H7F 1/50

| | | | |
|---|---|---|---|
| *Sample Name:* | **H6D040103 H2H7F 1/50** | *Injection Volume:* | **50.0** |
| *Vial Number:* | **1245** | *Channel:* | **ECD_1** |
| *Sample Type:* | **unknown** | *Wavelength:* | **n.a.** |
| *Control Program:* | **AS14A ANIONS METHOD** | *Bandwidth:* | **n.a.** |
| *Quantif. Method:* | **AS4A-SC ANION METHOD** | *Dilution Factor:* | **50.0000** |
| *Recording Time:* | **4/25/2006 11:06** | *Sample Weight:* | **1.0000** |
| *Run Time (min):* | **15.00** | *Sample Amount:* | **1.0000** |




| No. | Ret.Time (min.) | Peak Name | Height (uS) | Area µS*min | Rel.Area (%) | Amount (mg/L) | Peak Type |
|---|---|---|---|---|---|---|---|
| 1 | 4.83 | Chloride | 0.02603 | 0.003 | 0.01 | 0.3507 | BMB* |
| 2 | 5.12 | n.a. | 0.09927 | 0.034 | 0.10 | n.a. | BMB |
| 3 | 12.27 | n.a. | 98.84110 | 33.175 | 99.89 | n.a. | BMB |

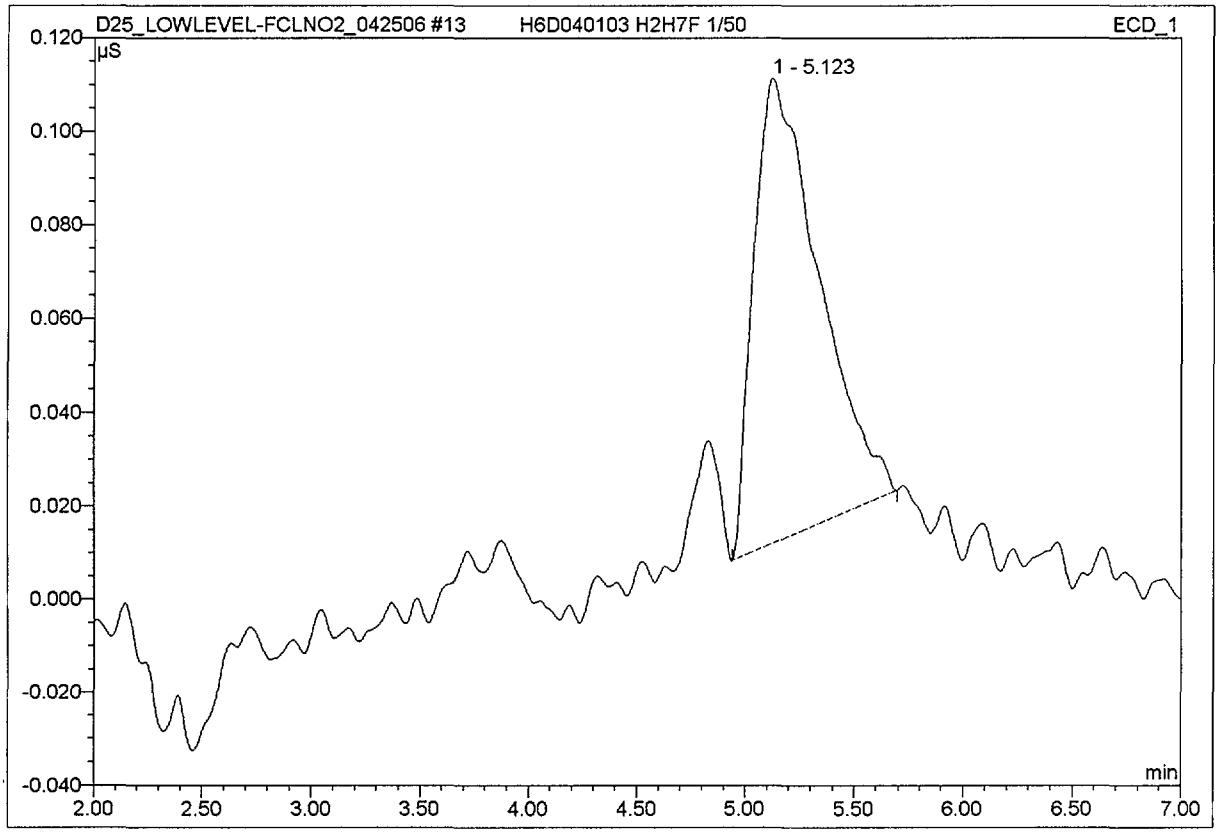
< MDL

manual integration
Peak indentified
CWK 4/25/06

Analyzed @ 1/50 to separate matrix interference (RT 5.123) from $Cl^-$ peak.
RJW 4/27/06 1/20 & 1/10 dilutions did not provide separation.

# 13 H6D040103 H2H7F 1/50

| | | | |
|---|---|---|---|
| *Sample Name:* | **H6D040103 H2H7F 1/50** | *Injection Volume:* | **50.0** |
| *Vial Number:* | **1245** | *Channel:* | **ECD_1** |
| *Sample Type:* | **unknown** | *Wavelength:* | **n.a.** |
| *Control Program:* | **AS14A ANIONS METHOD** | *Bandwidth:* | **n.a.** |
| *Quantif. Method:* | **AS4A-SC ANION METHOD** | *Dilution Factor:* | **50.0000** |
| *Recording Time:* | **4/25/2006 11:06** | *Sample Weight:* | **1.0000** |
| *Run Time (min):* | **15.00** | *Sample Amount:* | **1.0000** |

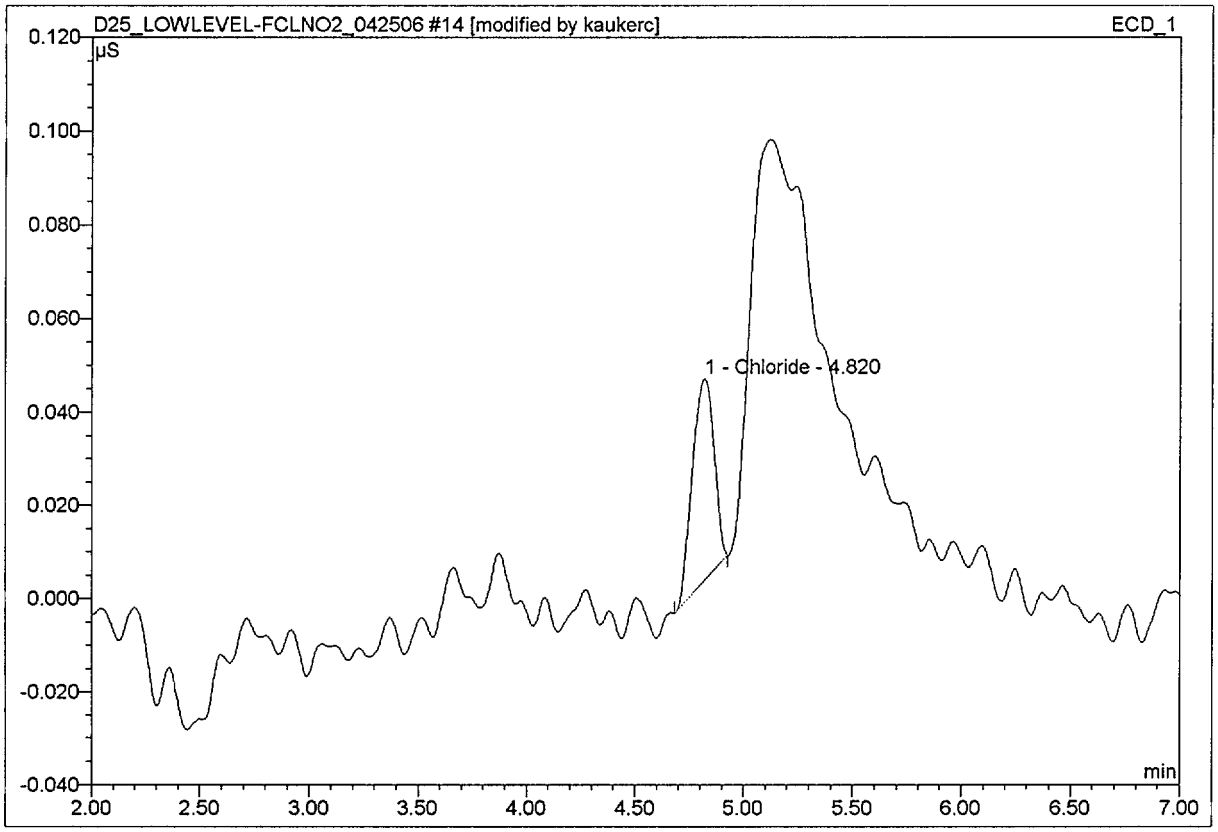



| No. | Ret.Time (min.) | Peak Name | Height (uS) | Area µS*min | Rel.Area (%) | Amount (mg/L) | Peak Type |
|---|---|---|---|---|---|---|---|
| 1 | 5.12 | n.a. | 0.09927 | 0.034 | 0.10 | n.a. | BMB |
| 2 | 12.27 | n.a. | 98.84110 | 33.175 | 99.90 | n.a. | BMB |

original

## 14 H6D040103 H2H7F DUP 1/50

| | | | |
|---|---|---|---|
| *Sample Name:* | **H6D040103 H2H7F DUP 1/50** | *Injection Volume:* | **50.0** |
| *Vial Number:* | **1246** | *Channel:* | **ECD_1** |
| *Sample Type:* | **unknown** | *Wavelength:* | **n.a.** |
| *Control Program:* | **AS14A ANIONS METHOD** | *Bandwidth:* | **n.a.** |
| *Quantif. Method:* | **AS4A-SC ANION METHOD** | *Dilution Factor:* | **50.0000** |
| *Recording Time:* | **4/25/2006 11:23** | *Sample Weight:* | **1.0000** |
| *Run Time (min):* | **15.00** | *Sample Amount:* | **1.0000** |



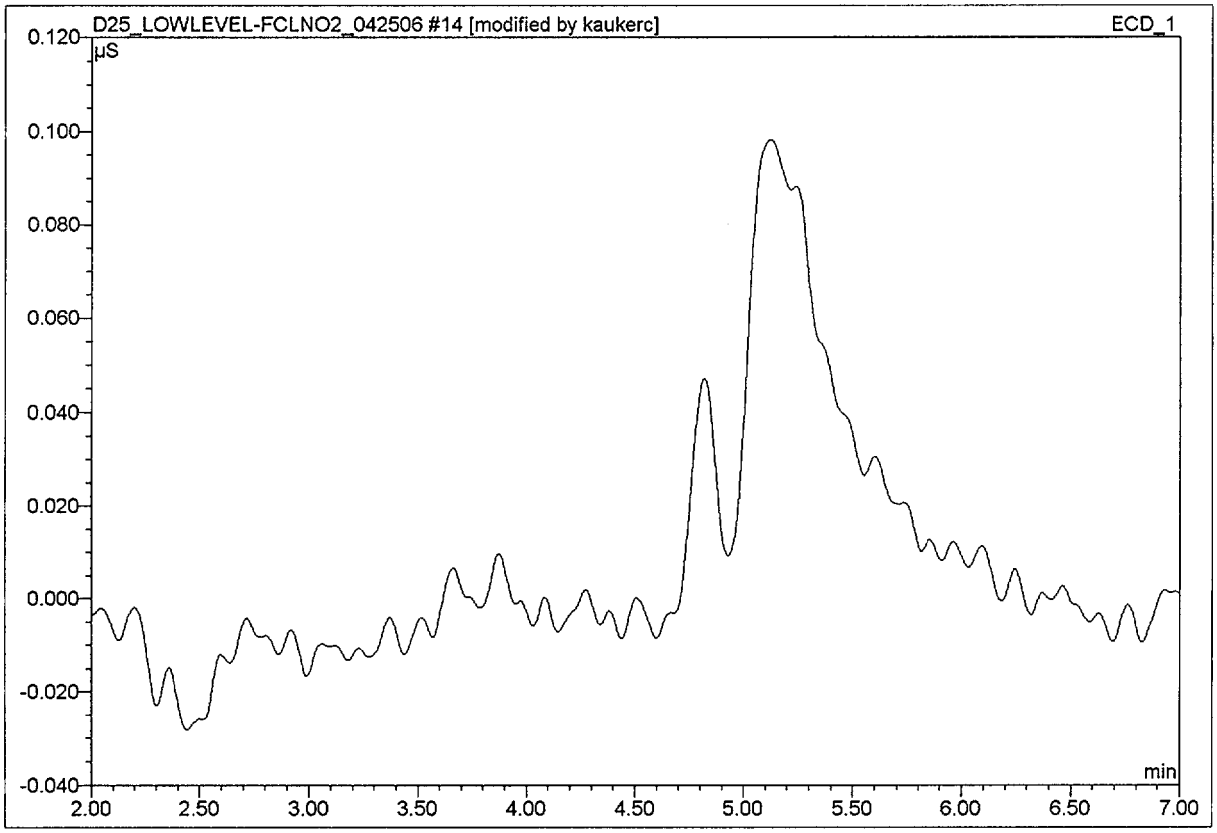

| No. | Ret.Time (min.) | Peak Name | Height (uS) | Area µS*min | Rel.Area (%) | Amount (mg/L) | Peak Type |
|---|---|---|---|---|---|---|---|
| 1 | 4.82 | Chloride | 0.04316 | 0.005 | 0.02 | 0.7955 | BMB* |
| 2 | 12.25 | n.a. | 98.85907 | 33.190 | 99.98 | n.a. | BMB |

< MDL

manual integration
Peak unidentified
CWK 4/25/06

## 14 H6D040103 H2H7F DUP 1/50

| | | | |
|---|---|---|---|
| *Sample Name:* | **H6D040103 H2H7F DUP 1/50** | *Injection Volume:* | **50.0** |
| *Vial Number:* | **1246** | *Channel:* | **ECD_1** |
| *Sample Type:* | **unknown** | *Wavelength:* | **n.a.** |
| *Control Program:* | **AS14A ANIONS METHOD** | *Bandwidth:* | **n.a.** |
| *Quantif. Method:* | **AS4A-SC ANION METHOD** | *Dilution Factor:* | **50.0000** |
| *Recording Time:* | **4/25/2006 11:23** | *Sample Weight:* | **1.0000** |
| *Run Time (min):* | **15.00** | *Sample Amount:* | **1.0000** |

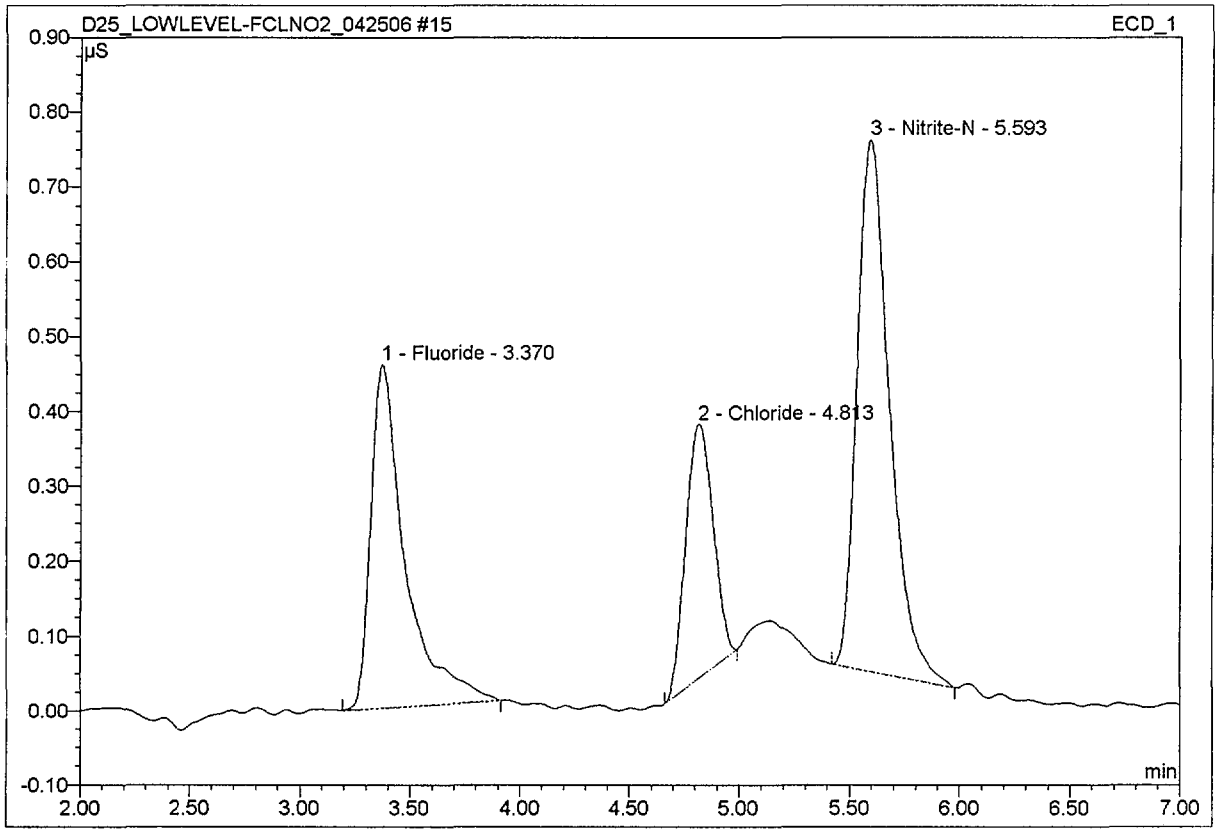



| No. | Ret.Time (min.) | Peak Name | Height (uS) | Area µS*min | Rel.Area (%) | Amount (mg/L) | Peak Type |
|---|---|---|---|---|---|---|---|
| 1 | 12.25 | n.a. | 98.85907 | 33.190 | 100.00 | n.a. | BMB |

original

# 15 H6D040103 H2H7F MS 1/50 0.2 PPM CL

| | | | |
|---|---|---|---|
| *Sample Name:* | **H6D040103 H2H7F MS 1/50 0.2 PPM CL** | *Injection Volume:* | **50.0** |
| *Vial Number:* | **1247** | *Channel:* | **ECD_1** |
| *Sample Type:* | **unknown** | *Wavelength:* | **n.a.** |
| *Control Program:* | **AS14A ANIONS METHOD** | *Bandwidth:* | **n.a.** |
| *Quantif. Method:* | **AS4A-SC ANION METHOD** | *Dilution Factor:* | **50.0000** |
| *Recording Time:* | **4/25/2006 11:41** | *Sample Weight:* | **1.0000** |
| *Run Time (min):* | **15.00** | *Sample Amount:* | **1.0000** |

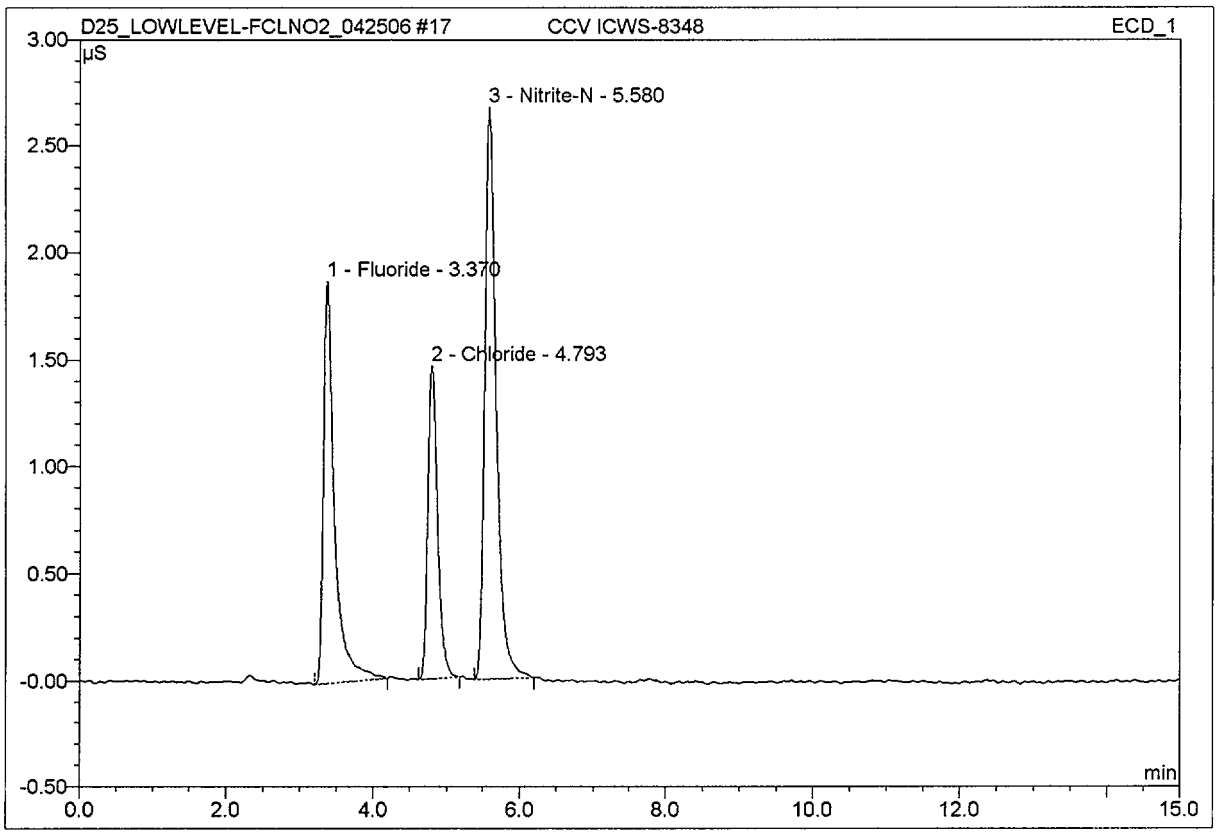



| No. | Ret.Time (min.) | Peak Name | Height (uS) | Area µS*min | Rel.Area (%) | Amount (mg/L) | Peak Type |
|---|---|---|---|---|---|---|---|
| 1 | 3.37 | Fluoride | 0.45870 | 0.083 | 0.25 | 8.4371 | BMB |
| 2 | 4.81 | Chloride | 0.33936 | 0.049 | 0.15 | 8.4726 | BMB |
| 3 | 5.59 | Nitrite-N | 0.70986 | 0.121 | 0.36 | 10.1011 | BMB |
| 4 | 12.26 | n.a. | 98.96616 | 33.177 | 99.24 | n.a. | BMB |

85 % R

# 17 CCV ICWS-8348

| | | | |
|---|---|---|---|
| *Sample Name:* | **CCV ICWS-8348** | *Injection Volume:* | **50.0** |
| *Vial Number:* | **1249** | *Channel:* | **ECD_1** |
| *Sample Type:* | **unknown** | *Wavelength:* | **n.a.** |
| *Control Program:* | **AS14A ANIONS METHOD** | *Bandwidth:* | **n.a.** |
| *Quantif. Method:* | **AS4A-SC ANION METHOD** | *Dilution Factor:* | **1.0000** |
| *Recording Time:* | **4/25/2006 12:21** | *Sample Weight:* | **1.0000** |
| *Run Time (min):* | **15.00** | *Sample Amount:* | **1.0000** |

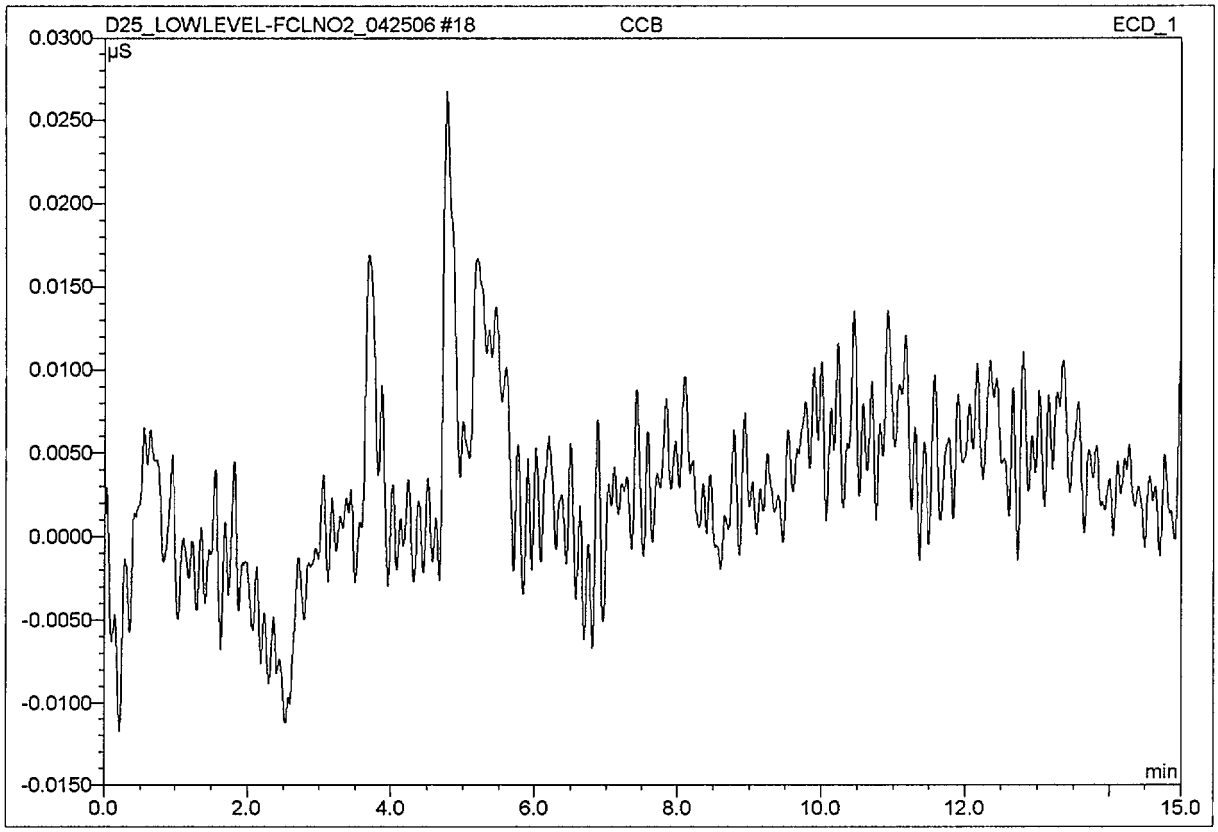



| No. | Ret.Time (min.) | Peak Name | Height (uS) | Area µS*min | Rel.Area (%) | Amount (mg/L) | Peak Type |
|---|---|---|---|---|---|---|---|
| 1 | 3.37 | Fluoride | 1.87893 | 0.323 | 31.31 | 0.6561 | BMB |
| 2 | 4.79 | Chloride | 1.45953 | 0.222 | 21.57 | 0.7452 | BMB |
| 3 | 5.58 | Nitrite-N | 2.67123 | 0.486 | 47.12 | 0.7427 | BMB |

99.4%LK

# 18 CCB

| | | | |
|---|---|---|---|
| *Sample Name:* | **CCB** | *Injection Volume:* | **50.0** |
| *Vial Number:* | **1250** | *Channel:* | **ECD_1** |
| *Sample Type:* | **unknown** | *Wavelength:* | **n.a.** |
| *Control Program:* | **AS14A ANIONS METHOD** | *Bandwidth:* | **n.a.** |
| *Quantif. Method:* | **AS4A-SC ANION METHOD** | *Dilution Factor:* | **1.0000** |
| *Recording Time:* | **4/25/2006 12:38** | *Sample Weight:* | **1.0000** |
| *Run Time (min):* | **15.00** | *Sample Amount:* | **1.0000** |

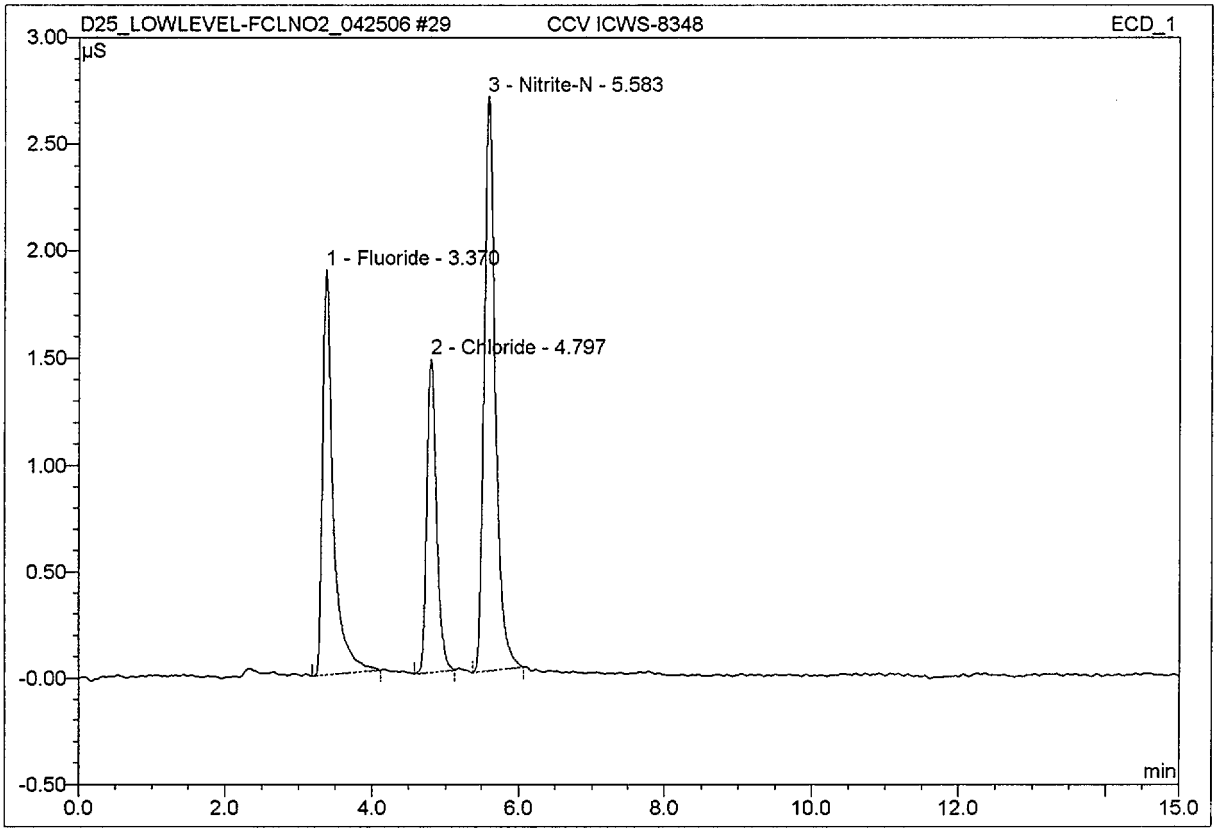



| No. | Ret.Time (min.) | Peak Name | Height (uS) | Area µS*min | Rel.Area (%) | Amount (mg/L) | Peak Type |
|---|---|---|---|---|---|---|---|

ND

# 29 CCV ICWS-8348

| | | | |
|---|---|---|---|
| *Sample Name:* | **CCV ICWS-8348** | *Injection Volume:* | **50.0** |
| *Vial Number:* | **1258** | *Channel:* | **ECD_1** |
| *Sample Type:* | **unknown** | *Wavelength:* | **n.a.** |
| *Control Program:* | **AS14A ANIONS METHOD** | *Bandwidth:* | **n.a.** |
| *Quantif. Method:* | **AS4A-SC ANION METHOD** | *Dilution Factor:* | **1.0000** |
| *Recording Time:* | **4/25/2006 16:07** | *Sample Weight:* | **1.0000** |
| *Run Time (min):* | **15.00** | *Sample Amount:* | **1.0000** |

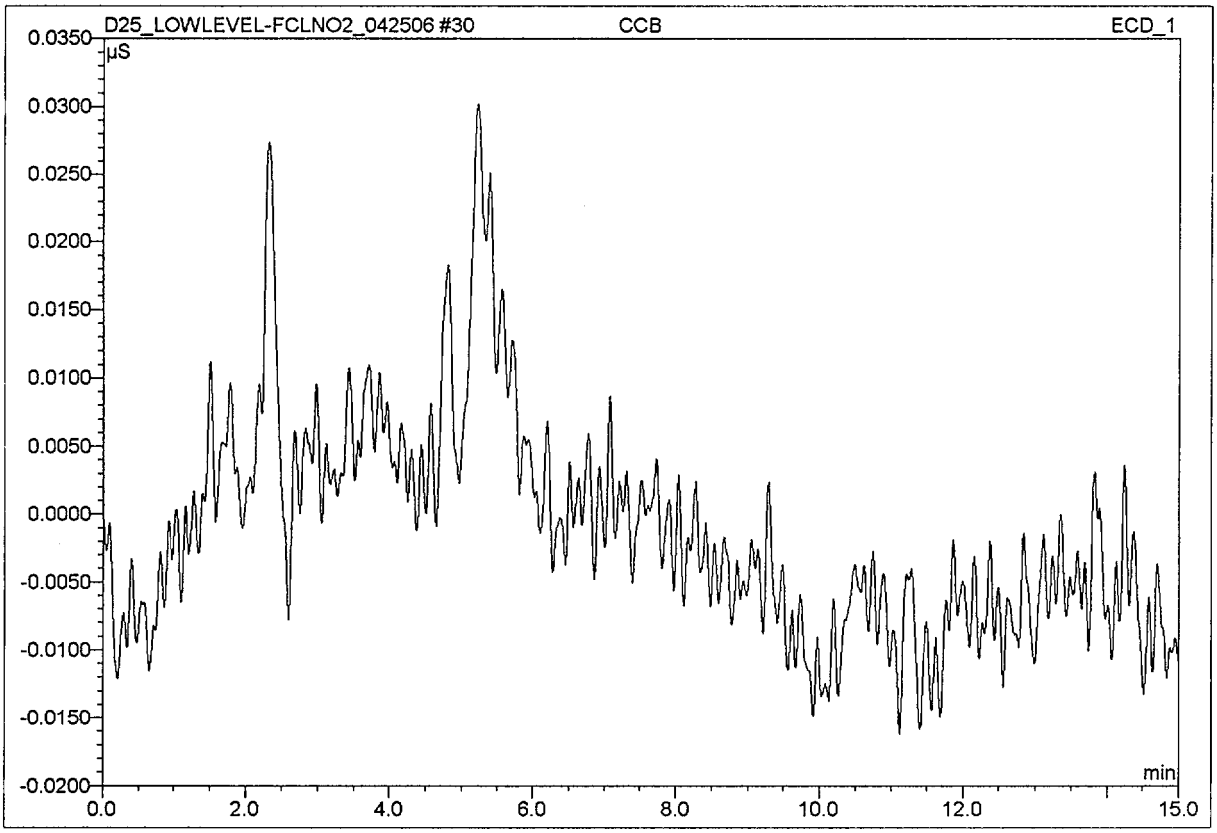



| No. | Ret.Time (min.) | Peak Name | Height (uS) | Area µS*min | Rel.Area (%) | Amount (mg/L) | Peak Type |
|---|---|---|---|---|---|---|---|
| 1 | 3.37 | Fluoride | 1.89490 | 0.317 | 30.97 | 0.6614 | BMB |
| 2 | 4.80 | Chloride | 1.46666 | 0.224 | 21.89 | 0.7488 | BMB |
| 3 | 5.58 | Nitrite-N | 2.68964 | 0.483 | 47.14 | 0.7476 | BMB |

99.8% w/w

# 30 CCB

| | | | |
|---|---|---|---|
| *Sample Name:* | **CCB** | *Injection Volume:* | **50.0** |
| *Vial Number:* | **1259** | *Channel:* | **ECD_1** |
| *Sample Type:* | **unknown** | *Wavelength:* | **n.a.** |
| *Control Program:* | **AS14A ANIONS METHOD** | *Bandwidth:* | **n.a.** |
| *Quantif. Method:* | **AS4A-SC ANION METHOD** | *Dilution Factor:* | **1.0000** |
| *Recording Time:* | **4/25/2006 16:24** | *Sample Weight:* | **1.0000** |
| *Run Time (min):* | **15.00** | *Sample Amount:* | **1.0000** |

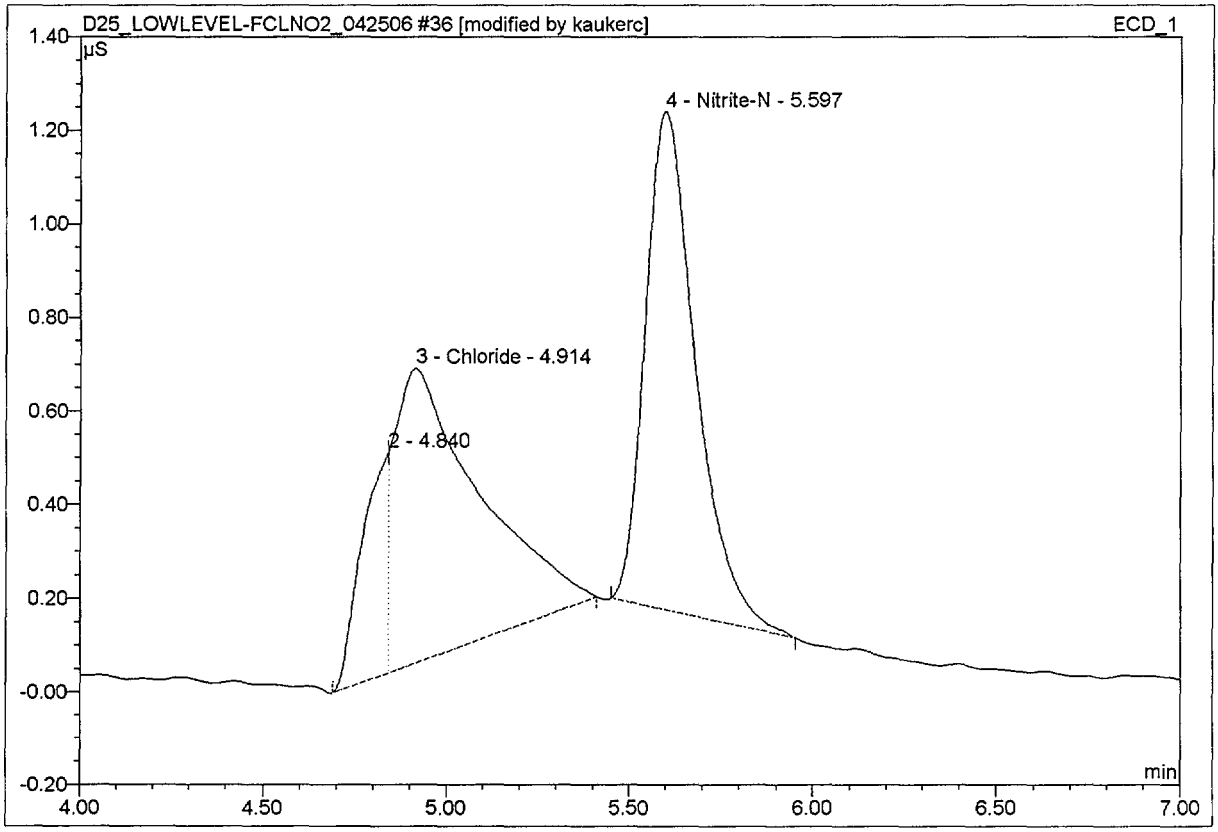



| No. | Ret.Time (min.) | Peak Name | Height (uS) | Area µS*min | Rel.Area (%) | Amount (mg/L) | Peak Type |
|---|---|---|---|---|---|---|---|

ND

# 36 H6D040103 H2H7V 1/20

| | | | |
|---|---|---|---|
| *Sample Name:* | **H6D040103 H2H7V 1/20** | *Injection Volume:* | **50.0** |
| *Vial Number:* | **1277** | *Channel:* | **ECD_1** |
| *Sample Type:* | **unknown** | *Wavelength:* | **n.a.** |
| *Control Program:* | **AS14A ANIONS_CI2 METHOD** | *Bandwidth:* | **n.a.** |
| *Quantif. Method:* | **AS4A-SC ANION METHOD** | *Dilution Factor:* | **20.0000** |
| *Recording Time:* | **4/25/2006 18:09** | *Sample Weight:* | **1.0000** |
| *Run Time (min):* | **30.00** | *Sample Amount:* | **1.0000** |



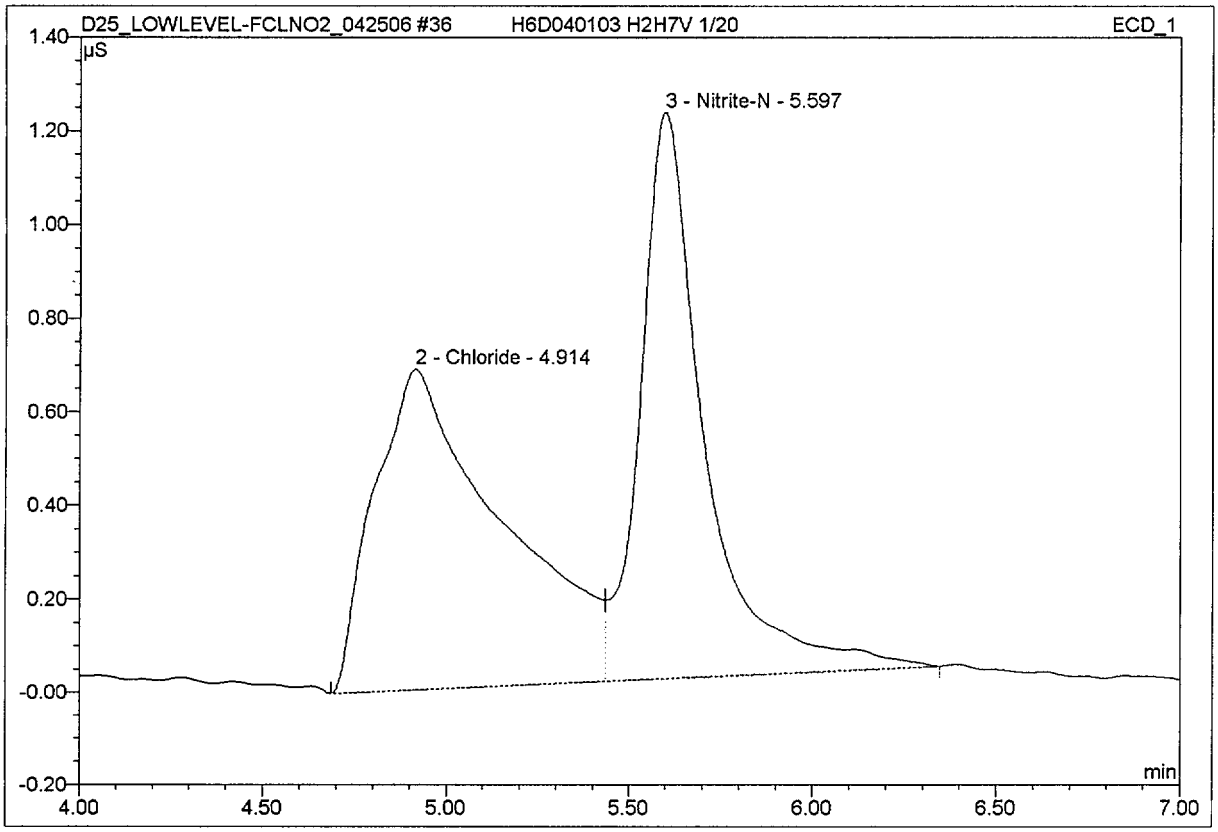

| No. | Ret.Time (min.) | Peak Name | Height (uS) | Area µS*min | Rel.Area (%) | Amount (mg/L) | Peak Type |
|---|---|---|---|---|---|---|---|
| 1 | 2.31 | n.a. | 3.58636 | 0.631 | 1.01 | n.a. | BMB |
| 2 | 4.84 | n.a. | 0.47049 | 0.039 | 0.06 | n.a. | BM * |
| 3 | 4.91 | Chloride | 0.62854 | 0.167 | 0.27 | 6.3765 | MB* |
| 4 | 5.60 | Nitrite-N | 1.06243 | 0.169 | 0.27 | 6.0227 | BMB* |
| 5 | 7.74 | n.a. | 0.10984 | 0.025 | 0.04 | n.a. | BMB |
| 6 | 12.31 | n.a. | 5.65034 | 1.866 | 2.99 | n.a. | BMB |
| 7 | 22.23 | n.a. | 63.42883 | 59.542 | 95.36 | n.a. | BMB |

✓

Manual integration / Baseline / Split Peak
CWK 4/26/06

# 36 H6D040103 H2H7V 1/20

| | | | |
|---|---|---|---|
| *Sample Name:* | **H6D040103 H2H7V 1/20** | *Injection Volume:* | **50.0** |
| *Vial Number:* | **1277** | *Channel:* | **ECD_1** |
| *Sample Type:* | **unknown** | *Wavelength:* | **n.a.** |
| *Control Program:* | **AS14A ANIONS_CI2 METHOD** | *Bandwidth:* | **n.a.** |
| *Quantif. Method:* | **AS4A-SC ANION METHOD** | *Dilution Factor:* | **20.0000** |
| *Recording Time:* | **4/25/2006 18:09** | *Sample Weight:* | **1.0000** |
| *Run Time (min):* | **30.00** | *Sample Amount:* | **1.0000** |

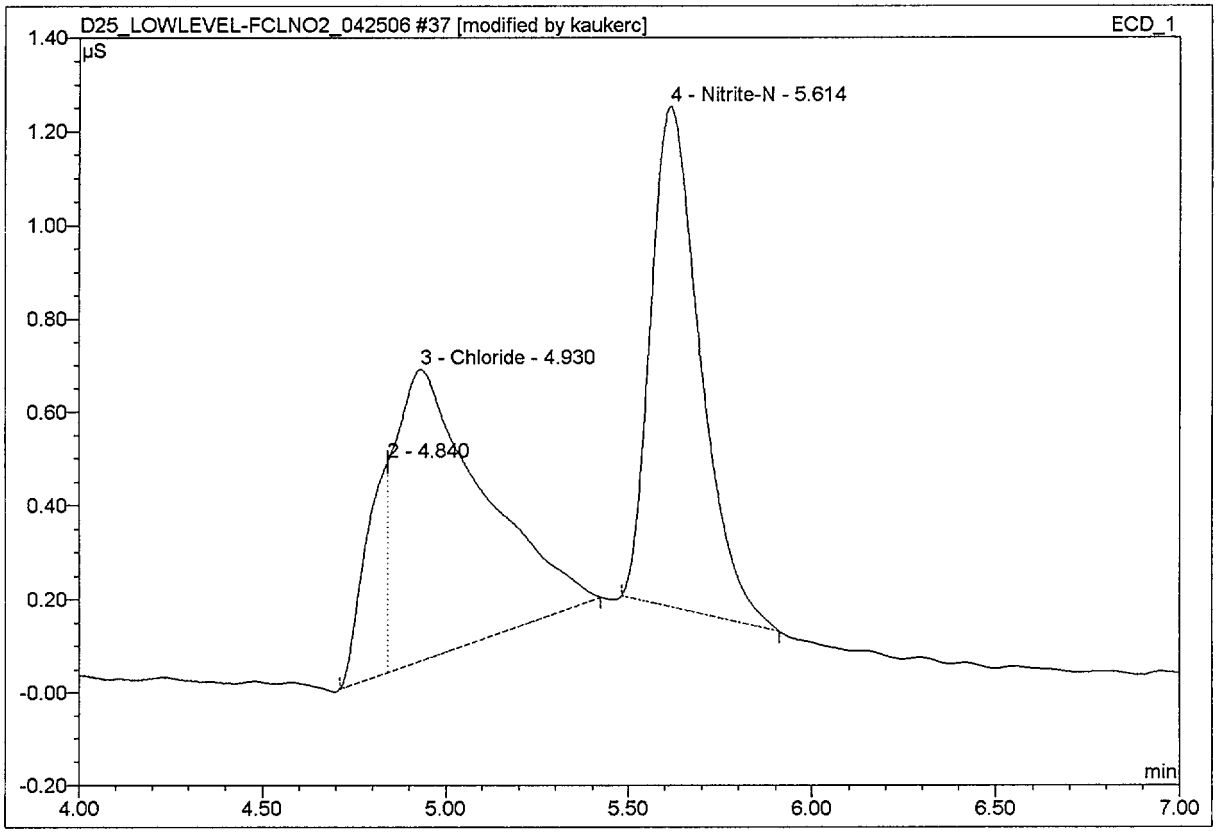



| No. | Ret.Time (min.) | Peak Name | Height (uS) | Area µS*min | Rel.Area (%) | Amount (mg/L) | Peak Type |
|---|---|---|---|---|---|---|---|
| 1 | 2.31 | n.a. | 3.58636 | 0.631 | 1.01 | n.a. | BMB |
| 2 | 4.91 | Chloride | 0.68513 | 0.275 | 0.44 | 6.9598 | BM |
| 3 | 5.60 | Nitrite-N | 1.20933 | 0.249 | 0.40 | 6.8434 | MB |
| 4 | 7.74 | n.a. | 0.10984 | 0.025 | 0.04 | n.a. | BMB |
| 5 | 12.31 | n.a. | 5.65034 | 1.866 | 2.98 | n.a. | BMB |
| 6 | 22.23 | n.a. | 63.42883 | 59.542 | 95.13 | n.a. | BMB |

original

# 37 H6D040103 H2H7V DUP 1/20

| | | | |
|---|---|---|---|
| *Sample Name:* | **H6D040103 H2H7V DUP 1/20** | *Injection Volume:* | **50.0** |
| *Vial Number:* | **1278** | *Channel:* | **ECD_1** |
| *Sample Type:* | **unknown** | *Wavelength:* | **n.a.** |
| *Control Program:* | **AS14A ANIONS_CI2 METHOD** | *Bandwidth:* | **n.a.** |
| *Quantif. Method:* | **AS4A-SC ANION METHOD** | *Dilution Factor:* | **20.0000** |
| *Recording Time:* | **4/25/2006 18:41** | *Sample Weight:* | **1.0000** |
| *Run Time (min):* | **30.00** | *Sample Amount:* | **1.0000** |

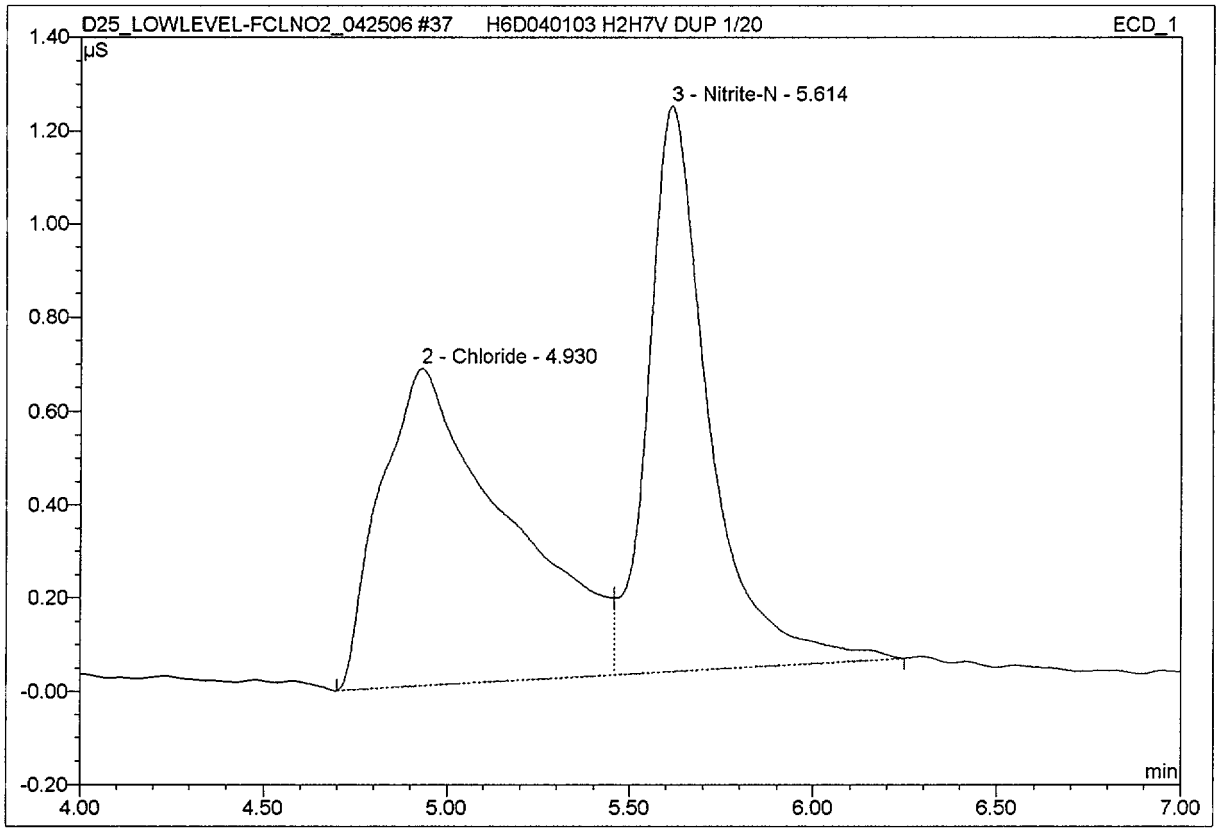



| No. | Ret.Time (min.) | Peak Name | Height (uS) | Area µS*min | Rel.Area (%) | Amount (mg/L) | Peak Type |
|---|---|---|---|---|---|---|---|
| 1 | 2.31 | n.a. | 3.61945 | 0.692 | 1.10 | n.a. | BMB |
| 2 | 4.84 | n.a. | 0.44819 | 0.032 | 0.05 | n.a. | BM * |
| 3 | 4.93 | Chloride | 0.62217 | 0.173 | 0.27 | 6.3108 | MB* |
| 4 | 5.61 | Nitrite-N | 1.06740 | 0.167 | 0.27 | 6.0505 | BMB* |
| 5 | 7.76 | n.a. | 0.10939 | 0.026 | 0.04 | n.a. | BMB |
| 6 | 12.32 | n.a. | 5.71531 | 1.869 | 2.97 | n.a. | BMB |
| 7 | 22.24 | n.a. | 63.76434 | 59.954 | 95.30 | n.a. | BMB |

manual integration
Split Peak / Baseline
CWK 4/26/06

# 37 H6D040103 H2H7V DUP 1/20

| | | | |
|---|---|---|---|
| *Sample Name:* | **H6D040103 H2H7V DUP 1/20** | *Injection Volume:* | **50.0** |
| *Vial Number:* | **1278** | *Channel:* | **ECD_1** |
| *Sample Type:* | **unknown** | *Wavelength:* | **n.a.** |
| *Control Program:* | **AS14A ANIONS_CI2 METHOD** | *Bandwidth:* | **n.a.** |
| *Quantif. Method:* | **AS4A-SC ANION METHOD** | *Dilution Factor:* | **20.0000** |
| *Recording Time:* | **4/25/2006 18:41** | *Sample Weight:* | **1.0000** |
| *Run Time (min):* | **30.00** | *Sample Amount:* | **1.0000** |

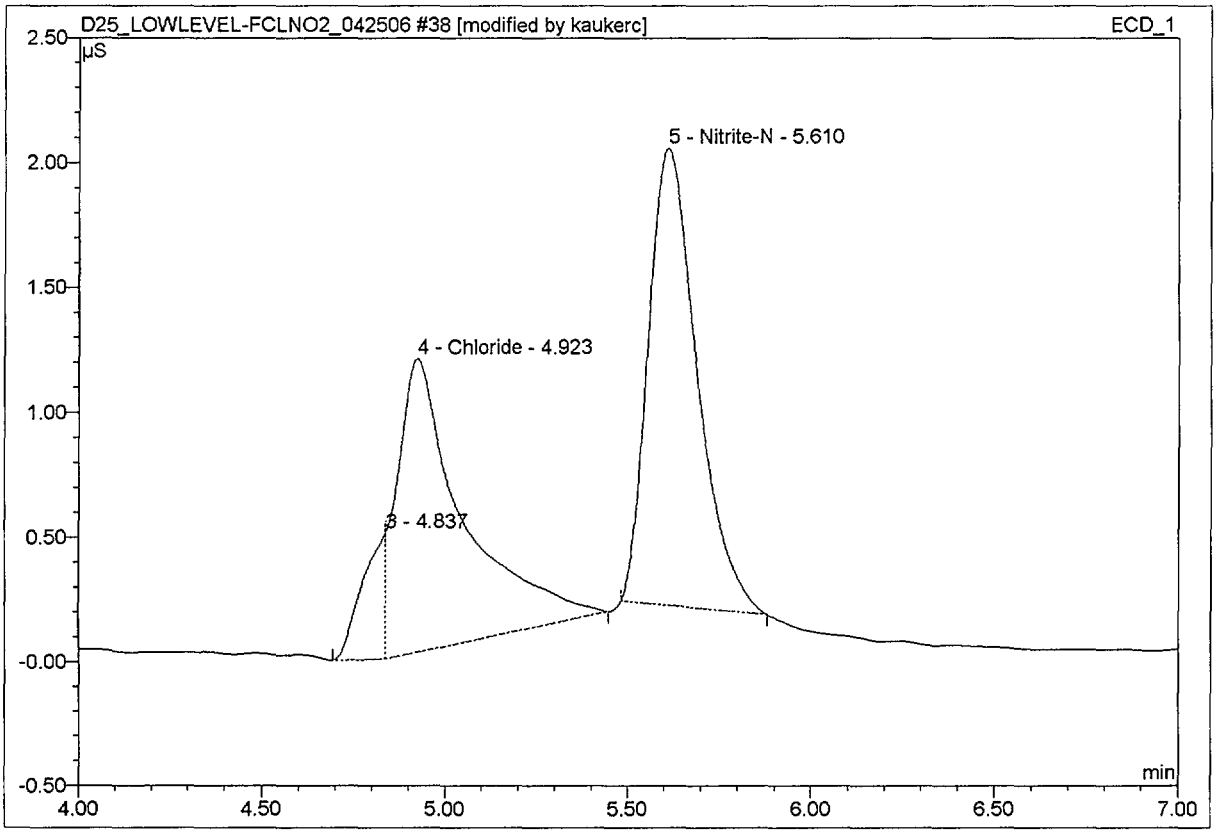



| No. | Ret.Time (min.) | Peak Name | Height (uS) | Area µS*min | Rel.Area (%) | Amount (mg/L) | Peak Type |
|---|---|---|---|---|---|---|---|
| 1 | 2.31 | n.a. | 3.61945 | 0.692 | 1.10 | n.a. | BMB |
| 2 | 4.93 | Chloride | 0.67817 | 0.272 | 0.43 | 6.8882 | BM |
| 3 | 5.61 | Nitrite-N | 1.20857 | 0.235 | 0.37 | 6.8391 | MB |
| 4 | 7.76 | n.a. | 0.10939 | 0.026 | 0.04 | n.a. | BMB |
| 5 | 12.32 | n.a. | 5.71531 | 1.869 | 2.96 | n.a. | BMB |
| 6 | 22.24 | n.a. | 63.76434 | 59.954 | 95.09 | n.a. | BMB |

orginal

# 38 H6D040103 H2H7V MS 1/20 0.2PPM CL

| | | | |
|---|---|---|---|
| *Sample Name:* | **H6D040103 H2H7V MS 1/20 0.2PPM CL** | *Injection Volume:* | **50.0** |
| *Vial Number:* | **1278** | *Channel:* | **ECD_1** |
| *Sample Type:* | **unknown** | *Wavelength:* | **n.a.** |
| *Control Program:* | **AS14A ANIONS_CI2 METHOD** | *Bandwidth:* | **n.a.** |
| *Quantif. Method:* | **AS4A-SC ANION METHOD** | *Dilution Factor:* | **20.0000** |
| *Recording Time:* | **4/25/2006 19:14** | *Sample Weight:* | **1.0000** |
| *Run Time (min):* | **30.00** | *Sample Amount:* | **1.0000** |



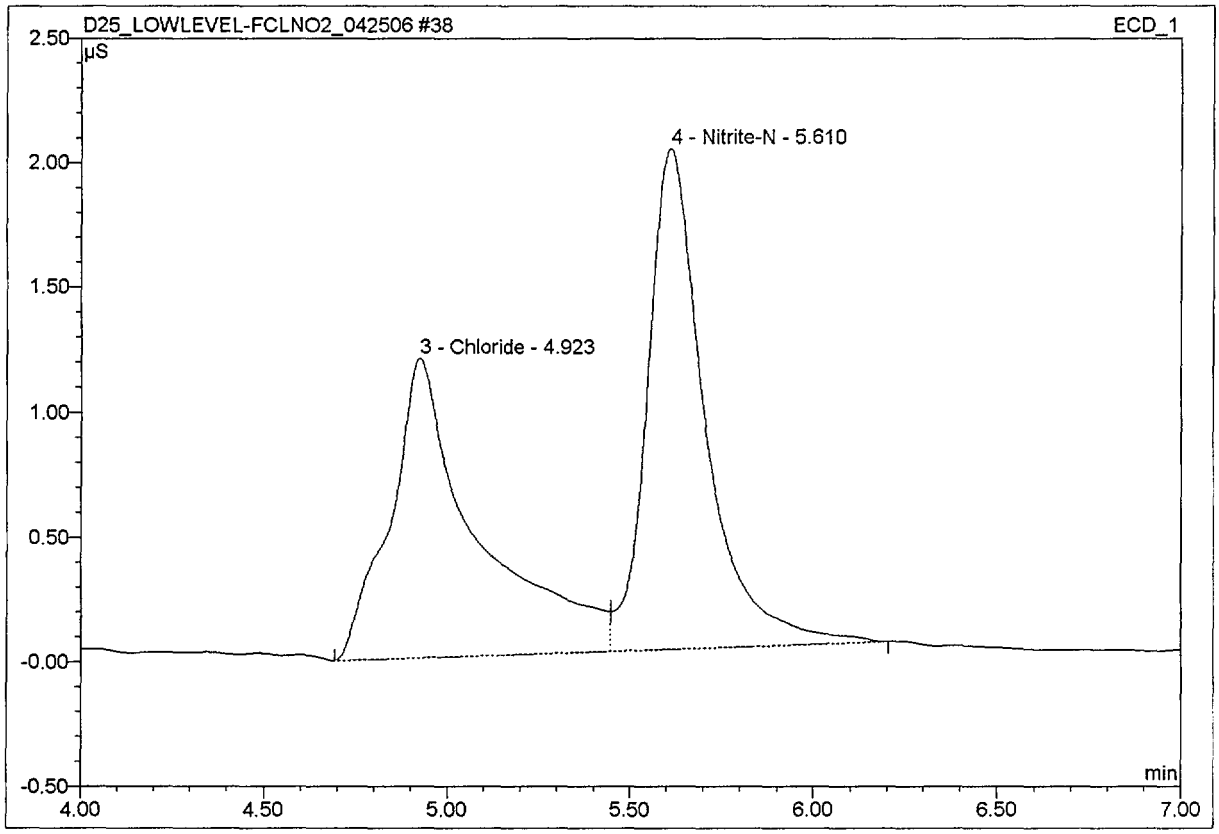

| No. | Ret.Time (min.) | Peak Name | Height (uS) | Area µS*min | Rel.Area (%) | Amount (mg/L) | Peak Type |
|---|---|---|---|---|---|---|---|
| 1 | 2.31 | n.a. | 3.62937 | 0.685 | 1.08 | n.a. | BMB |
| 2 | 3.37 | Fluoride | 0.39211 | 0.083 | 0.13 | 2.9039 | Rd |
| 3 | 4.84 | n.a. | 0.50566 | 0.036 | 0.06 | n.a. | BM * |
| 4 | 4.92 | Chloride | 1.17557 | 0.248 | 0.39 | 11.9995 | MB* |
| 5 | 5.61 | Nitrite-N | 1.82987 | 0.283 | 0.45 | 10.2777 | BMB* |
| 6 | 7.74 | n.a. | 0.11546 | 0.025 | 0.04 | n.a. | BMB |
| 7 | 12.33 | n.a. | 5.74529 | 1.889 | 2.99 | n.a. | BMB |
| 8 | 22.24 | n.a. | 63.66195 | 59.909 | 94.86 | n.a. | BMB |

✓

Manual integration
Split Peak | Baseline
CWK 4/26/06

# 38 H6D040103 H2H7V MS 1/20 0.2PPM CL

| | | | |
|---|---|---|---|
| *Sample Name:* | **H6D040103 H2H7V MS 1/20 0.2PPM CL** | *Injection Volume:* | **50.0** |
| *Vial Number:* | **1278** | *Channel:* | **ECD_1** |
| *Sample Type:* | **unknown** | *Wavelength:* | **n.a.** |
| *Control Program:* | **AS14A ANIONS_CI2 METHOD** | *Bandwidth:* | **n.a.** |
| *Quantif. Method:* | **AS4A-SC ANION METHOD** | *Dilution Factor:* | **20.0000** |
| *Recording Time:* | **4/25/2006 19:14** | *Sample Weight:* | **1.0000** |
| *Run Time (min):* | **30.00** | *Sample Amount:* | **1.0000** |

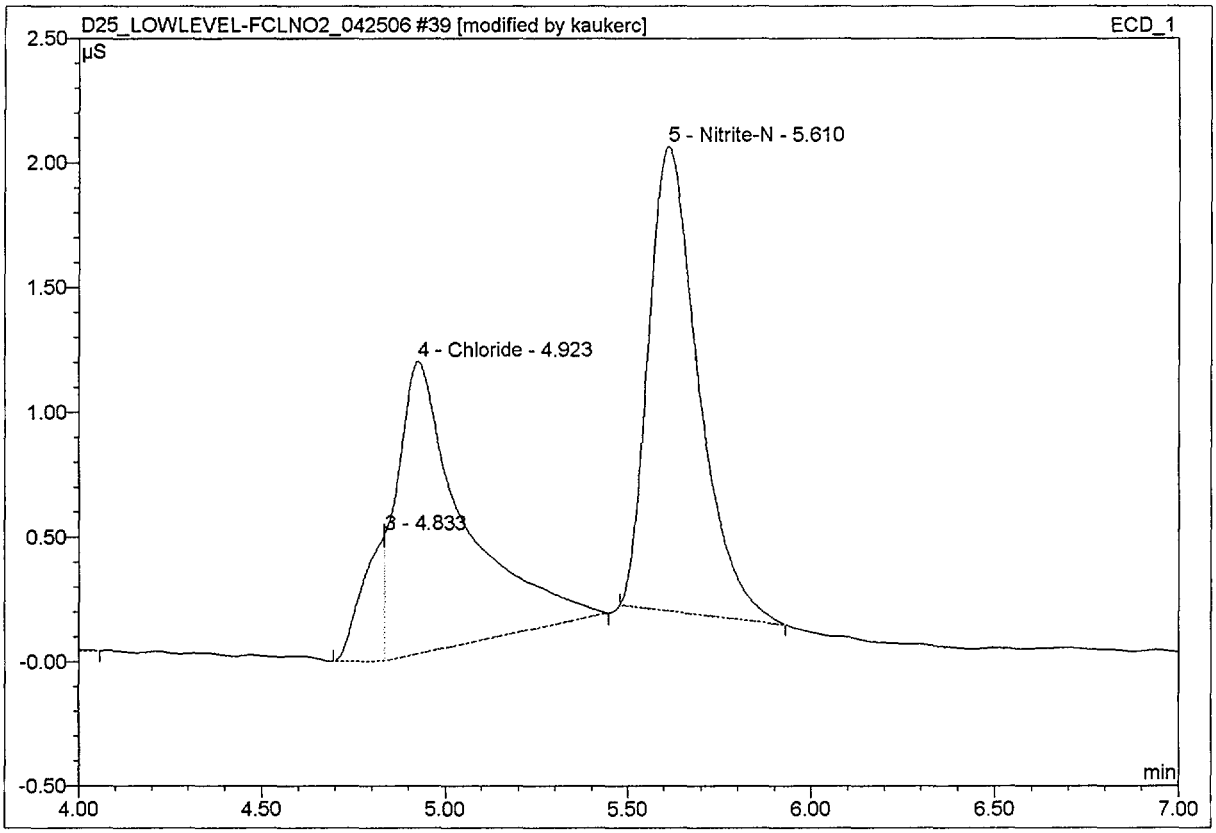



| No. | Ret.Time (min.) | Peak Name | Height (uS) | Area µS*min | Rel.Area (%) | Amount (mg/L) | Peak Type |
|---|---|---|---|---|---|---|---|
| 1 | 2.31 | n.a. | 3.62937 | 0.685 | 1.08 | n.a. | BMB |
| 2 | 3.37 | Fluoride | 0.39211 | 0.083 | 0.13 | 2.9039 | Rd |
| 3 | 4.92 | Chloride | 1.19822 | 0.333 | 0.53 | 12.2316 | BM |
| 4 | 5.61 | Nitrite-N | 2.00673 | 0.369 | 0.58 | 11.2471 | MB |
| 5 | 7.74 | n.a. | 0.11546 | 0.025 | 0.04 | n.a. | BMB |
| 6 | 12.33 | n.a. | 5.74529 | 1.889 | 2.99 | n.a. | BMB |
| 7 | 22.24 | n.a. | 63.66195 | 59.909 | 94.65 | n.a. | BMB |

original

# 39 H6D040103 H2H7V MSD 1/20 0.2PPM CL

| | | | |
|---|---|---|---|
| *Sample Name:* | **H6D040103 H2H7V MSD 1/20 0.2PPM CL** | *Injection Volume:* | **50.0** |
| *Vial Number:* | **1279** | *Channel:* | **ECD_1** |
| *Sample Type:* | **unknown** | *Wavelength:* | **n.a.** |
| *Control Program:* | **AS14A ANIONS_CI2 METHOD** | *Bandwidth:* | **n.a.** |
| *Quantif. Method:* | **AS4A-SC ANION METHOD** | *Dilution Factor:* | **20.0000** |
| *Recording Time:* | **4/25/2006 19:46** | *Sample Weight:* | **1.0000** |
| *Run Time (min):* | **30.00** | *Sample Amount:* | **1.0000** |

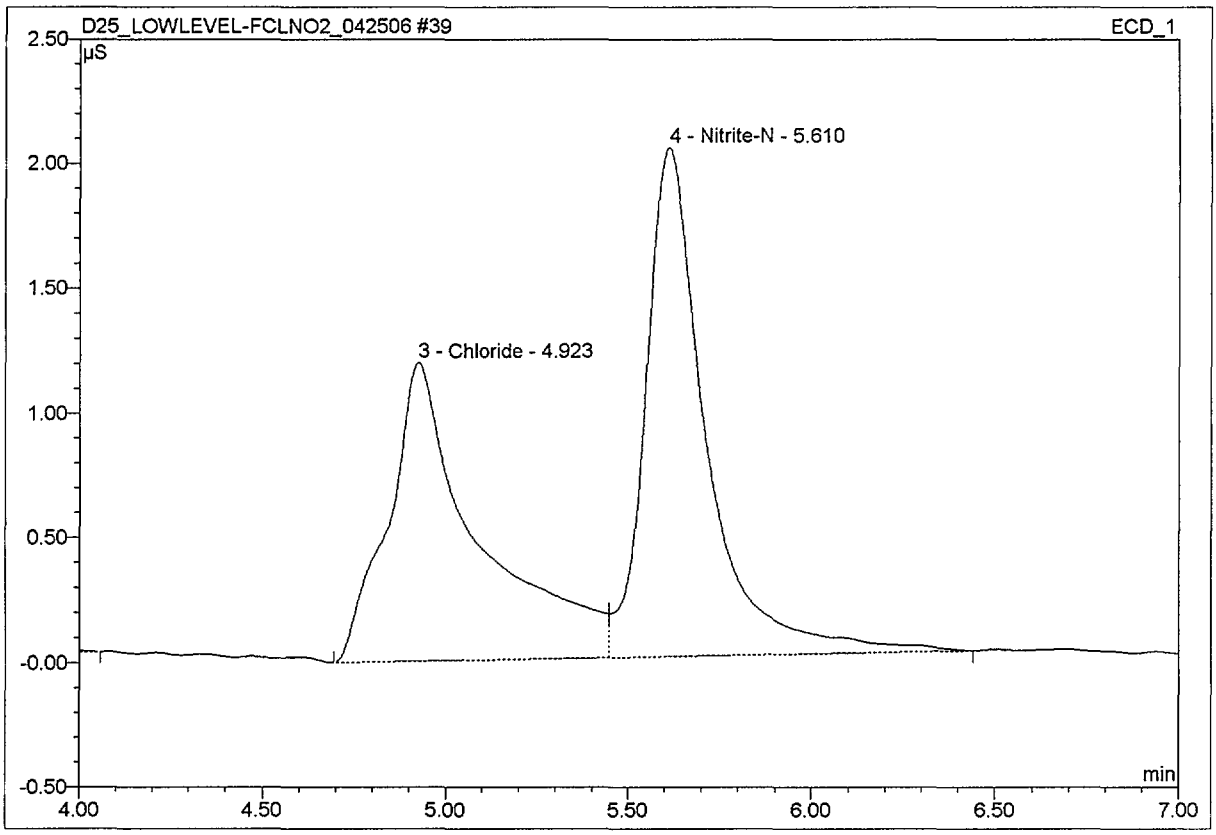



| No. | Ret.Time (min.) | Peak Name | Height (uS) | Area µS*min | Rel.Area (%) | Amount (mg/L) | Peak Type |
|---|---|---|---|---|---|---|---|
| 1 | 2.31 | n.a. | 3.55115 | 0.678 | 1.23 | n.a. | BMB |
| 2 | 3.36 | Fluoride | 0.39181 | 0.080 | 0.14 | 2.9018 | Rd |
| 3 | 4.83 | n.a. | 0.50319 | 0.035 | 0.06 | n.a. | BM * |
| 4 | 4.92 | Chloride | 1.16994 | 0.251 | 0.45 | 11.9418 | MB* |
| 5 | 5.61 | Nitrite-N | 1.86039 | 0.294 | 0.53 | 10.4453 | BMB* |
| 6 | 7.76 | n.a. | 0.11340 | 0.029 | 0.05 | n.a. | BMB |
| 7 | 12.34 | n.a. | 5.68163 | 1.874 | 3.39 | n.a. | BMB |
| 8 | 22.34 | n.a. | 57.65884 | 52.059 | 94.14 | n.a. | BMB |

manual integration
CWK Split Peak / Baseline
4/26/06

# 39 H6D040103 H2H7V MSD 1/20 0.2PPM CL

| | | | |
|---|---|---|---|
| *Sample Name:* | **H6D040103 H2H7V MSD 1/20 0.2PPM CL** | *Injection Volume:* | **50.0** |
| *Vial Number:* | **1279** | *Channel:* | **ECD_1** |
| *Sample Type:* | **unknown** | *Wavelength:* | **n.a.** |
| *Control Program:* | **AS14A ANIONS_CI2 METHOD** | *Bandwidth:* | **n.a.** |
| *Quantif. Method:* | **AS4A-SC ANION METHOD** | *Dilution Factor:* | **20.0000** |
| *Recording Time:* | **4/25/2006 19:46** | *Sample Weight:* | **1.0000** |
| *Run Time (min):* | **30.00** | *Sample Amount:* | **1.0000** |

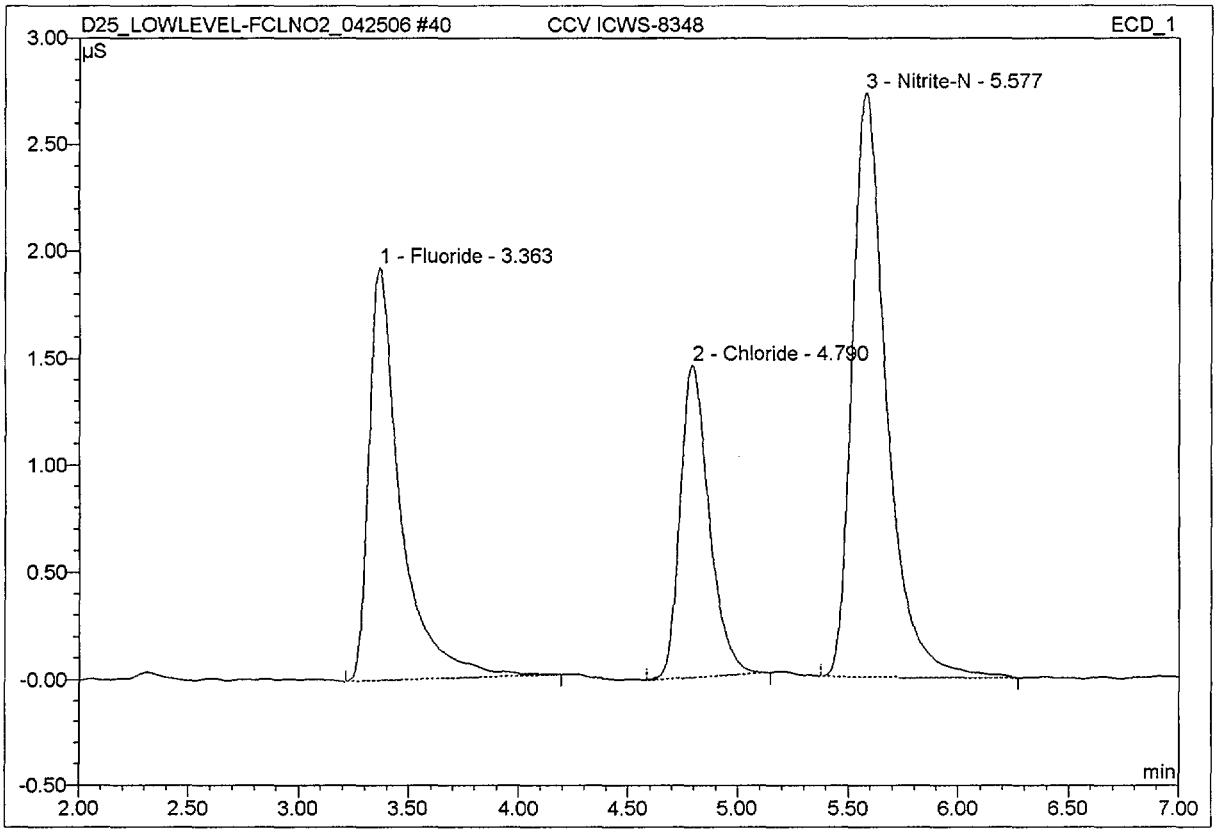



| No. | Ret.Time (min.) | Peak Name | Height (uS) | Area µS*min | Rel.Area (%) | Amount (mg/L) | Peak Type |
|---|---|---|---|---|---|---|---|
| 1 | 2.31 | n.a. | 3.55115 | 0.678 | 1.22 | n.a. | BMB |
| 2 | 3.36 | Fluoride | 0.39181 | 0.080 | 0.14 | 2.9018 | Rd |
| 3 | 4.92 | Chloride | 1.19548 | 0.339 | 0.61 | 12.2035 | BM |
| 4 | 5.61 | Nitrite-N | 2.03714 | 0.392 | 0.71 | 11.4133 | MB |
| 5 | 7.76 | n.a. | 0.11340 | 0.029 | 0.05 | n.a. | BMB |
| 6 | 12.34 | n.a. | 5.68163 | 1.874 | 3.38 | n.a. | BMB |
| 7 | 22.34 | n.a. | 57.65884 | 52.059 | 93.88 | n.a. | BMB |

original

# 40 CCV ICWS-8348

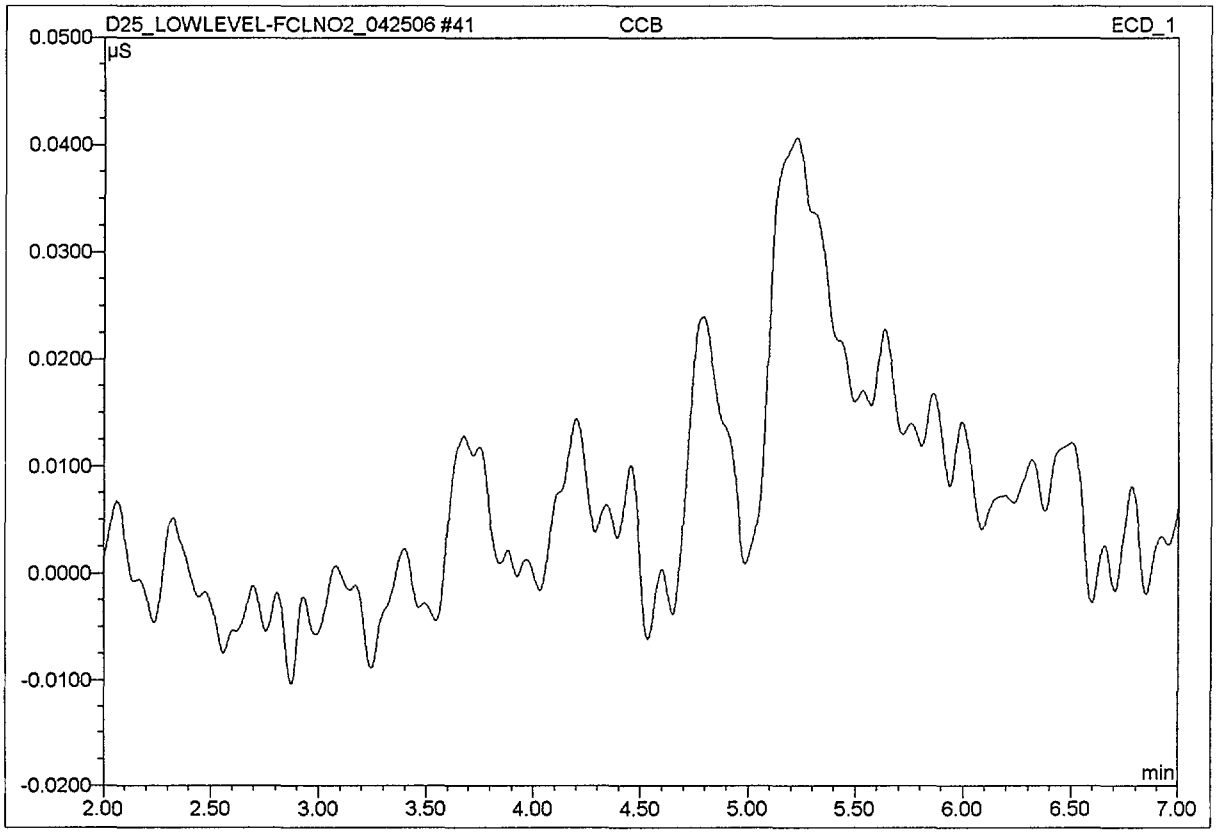
| | | | |
|---|---|---|---|
| *Sample Name:* | **CCV ICWS-8348** | *Injection Volume:* | **50.0** |
| *Vial Number:* | **1280** | *Channel:* | **ECD_1** |
| *Sample Type:* | **unknown** | *Wavelength:* | **n.a.** |
| *Control Program:* | **AS14A ANIONS METHOD** | *Bandwidth:* | **n.a.** |
| *Quantif. Method:* | **AS4A-SC ANION METHOD** | *Dilution Factor:* | **1.0000** |
| *Recording Time:* | **4/25/2006 20:18** | *Sample Weight:* | **1.0000** |
| *Run Time (min):* | **15.00** | *Sample Amount:* | **1.0000** |




| No. | Ret.Time (min.) | Peak Name | Height (uS) | Area µS*min | Rel.Area (%) | Amount (mg/L) | Peak Type |
|---|---|---|---|---|---|---|---|
| 1 | 3.36 | Fluoride | 1.92763 | 0.321 | 30.99 | 0.6723 | BMB |
| 2 | 4.79 | Chloride | 1.45737 | 0.222 | 21.44 | 0.7441 | BMB |
| 3 | 5.58 | Nitrite-N | 2.72698 | 0.492 | 47.57 | 0.7577 | BMB |

# 41 CCB

| | | | |
|---|---|---|---|
| *Sample Name:* | **CCB** | *Injection Volume:* | **50.0** |
| *Vial Number:* | **1281** | *Channel:* | **ECD_1** |
| *Sample Type:* | **unknown** | *Wavelength:* | **n.a.** |
| *Control Program:* | **AS14A ANIONS METHOD** | *Bandwidth:* | **n.a.** |
| *Quantif. Method:* | **AS4A-SC ANION METHOD** | *Dilution Factor:* | **1.0000** |
| *Recording Time:* | **4/25/2006 20:36** | *Sample Weight:* | **1.0000** |
| *Run Time (min):* | **15.00** | *Sample Amount:* | **1.0000** |




| No. | Ret.Time (min.) | Peak Name | Height (uS) | Area µS*min | Rel.Area (%) | Amount (mg/L) | Peak Type |
|---|---|---|---|---|---|---|---|

ND

## STL Knoxville
## Source Air Analysis Sample Information

| Analyst | Date | Lot # | Work Order # | FH or BH | Impinger Volume (mL) | Impinger pH as received | Impinger pH after adjustment | Amount added to adjust pH |
|---|---|---|---|---|---|---|---|---|
| CWK | 4/17/06 | H6D040103 | H2H7E | BH | 305 ml | pH 10 | — | — |
| | | | H2H7G | BH | 250 ml | pH 14 | — | — |
| | | | H2H7K | BH | 360 ml | pH 10 | — | — |
| | | | H2H7V | BH | 305 ml | pH 10 | — | — |
| CWK | 4/21/06 | H6D040103 | H2H69 | FH | 1805 | pH ≤ 2 | — | — |
| | | | H2H7J | FH | 1885 | pH ≤ 2 | — | — |
| | | | H2H7P | FH | 1885 | pH ≤ 2 | — | — |
| | | | H2H7F | FH (BH) | 160 ml | pH ≤ 2 | — | — |

Comments: H2H69 - 980 ml + 825 = 1805 ml
H2H7J - 940 ml + 500 ml + 445 ml = 1885 ml
H2H7P - 1000 ml + 410 ml + 475 = 1885 ml
H2H7F - 160 ml

**STL KNOXVILLE**
**PREPARATION OF FINAL WORKING STANDARD SOLUTIONS FROM VENDOR PREPARED STOCKS**
**WET CHEMISTRY**

Date: 4/17/06 Chemist: CWK Expiration Date: 4/18/06

| ID Number | Compound Name | Parent Lot Number | Parent Source | Parent Exp. Date | Parent Conc. | Aliquot Volume (ml) | Dilution Volume (ml) | Final Conc. |
|---|---|---|---|---|---|---|---|---|
| 1. ICWS 8305 | F- | ICWI- | 8262 | July 4, 2006 | 100 ppm | 0.500 | 100 ml | 0.50 ppm |
| 2. (ICV/LCS) | Cl- | \| | \| | \| | \| | \| | \| | \| |
| 3. | $NO_2$-N | \| | \| | \| | \| | \| | \| | \| |
| 4. ICWS8306 | F- | \| | \| | \| | \| | \| | \| | \| |
| 5. (ICV/LCSD) | Cl- | \| | \| | \| | \| | \| | \| | \| |
| 6. | $NO_2$-N | \| | \| | \| | \| | \| | \| | \| |
| 7. ICWS 8307 | F- | ICWI- | 8261 | July 4, 2006 | 100 ppm | 0.750 | 100 | 0.75 ppm |
| 8. (CCV) | Cl- | \| | \| | \| | \| | \| | \| | \| |
| 9. | $NO_2$-N | \| | \| | \| | \| | \| | \| | \| |
| 10. | | | | | | | | |
| 11. | | | | | | | | |
| 12. | | | | | | | | |
| 13. | | | | | | | | |
| 14. | | | | | | | | |

Reviewed By: _____

**STL KNOXVILLE**
**PREPARATION OF FINAL WORKING STANDARD SOLUTIONS FROM VENDOR PREPARED STOCKS**
**WET CHEMISTRY**

Date: 4/21/06 Chemist: CWK Expiration Date: 4/22/06

| ID Number | Compound Name | Parent Lot Number | Parent Source | Parent Exp. Date | Parent Conc. | Aliquot Volume (ml) | Dilution Volume (ml) | Final Conc. |
|---|---|---|---|---|---|---|---|---|
| 1. ICWS8334 | $F^-$ | ICWI- | 8262 | July 4, 2006 | 100 ppm | 0.500 | 100 ml | 0.50 ppm |
| 2. (ICV/LCS) | $Cl^-$ | " | " | " | " | " | " | " |
| 3. | $NO_2$-N | " | " | " | " | " | " | " |
| 4. ICWS8335 | $F^-$ | " | " | " | " | " | " | " |
| 5. (ICV/LCSD) | $Cl^-$ | " | " | " | " | " | " | " |
| 6. | $NO_2$-N | " | " | " | " | " | " | " |
| 7. ICWS8336 | $F^-$ | ICWI- | 8261 | " | " | 0.750 | " | 0.75 ppm |
| 8. (CCV) | $Cl^-$ | " | " | " | " | " | " | " |
| 9. | $NO_2$-N | " | " | " | " | " | " | " |
| 10. | | | | | | | | |
| 11. | | | | | | | | |
| 12. | | | | | | | | |
| 13. | | | | | | | | |
| 14. | | | | | | | | |

Reviewed By: _____

**STL KNOXVILLE**
**PREPARATION OF FINAL WORKING STANDARD SOLUTIONS FROM VENDOR PREPARED STOCKS**
**WET CHEMISTRY**

Date: 4/25/06 Chemist: CWK Expiration Date: 4/26/06

| ID Number | Compound Name | Parent Lot Number | Parent Source | Parent Exp. Date | Parent Conc. | Aliquot Volume (ml) | Dilution Volume (ml) | Final Conc. |
|---|---|---|---|---|---|---|---|---|
| 1. ICWS 8346 | F- | ICWI- | 8262 | July 4 2006 | 100 ppm | 0.500 | 100 ml | 0.500 ppm |
| 2. (ICV/LCS) | Cl- | | | | | | | |
| 3. | $NO_2$-N | | | | | | | |
| 4. ICWS 8347 | F- | | | | | | | |
| 5. (ICV/LCSD) | Cl- | | | | | | | |
| 6. | $NO_2$-N | | | | | | | |
| 7. ICWS 8348 | F- | ICWI- | 8261 | | | 0.750 | | 0.75 |
| 8. (CCV) | Cl- | | | | | | | |
| 9. | $NO_2$-N | | | | | | | |
| 10. | | | | | | | | |
| 11. | | | | | | | | |
| 12. | | | | | | | | |
| 13. | | | | | | | | |
| 14. | | | | | | | | |

Reviewed By: _____

# Sample Receipt Documentation

# Request for Analysis/Chain-of-Custody – RFA/COC #023 [Method 0050/26A Train]
# Focus/US Filter Westates Carbon
# Comprehensive Performance Test at Parker, Arizona

**STL Knoxville Lot Number:** H6D040103
**STL Knoxville Project Number: 142541**

***NOTE: After Log-In, please give the original completed RFA/COC to Patti Carswell.***

| **Project Identification:** | **Westates Carbon CPT** |
|---|---|
| STL Knoxville Project Number: | 142541 |
| STL Contact: | Ms. Patti Carswell (865) 291-3010 |
| STL - ACS Project Manager: | Dr. William C. Anderson (865) 291-3080 |

| **Laboratory Deliverable Turnaround Requirements:** | |
|---|---|
| Analytical Due Date: (Review-Released Data) | 14 Days from Lab Receipt |
| Data Package Due Date: | 14 Days from Lab Receipt |
| **Laboratory Destination:** | STL Knoxville 5815 Middlebrook Pike Knoxville, Tennessee 37921 (865) 291-3000 |
| **Courier:** | Federal Express |

**Analytical Testing QC Requirements:**
The Legend for Project-Specific Quality Control Testing is designated in the "QC" column as follows:
"MS" = Matrix Spike, "MSD" = Matrix Spike Duplicate,
"DUP" = Duplicate, and "PDS" = Post Digestion Spike

**Project Deliverables:**
Report analytical results on R-02 Reports and in data packages.
Include "Field Number", "Sample Type", and "Run Number" on all R-02 Reports.

| **Holding Time Requirements:** | |
|---|---|
| Anions (Chloride/Chlorine) | 30 Days to Analysis. |

| **Field Sample No./ Sample Coding ID** | **Sample Collection Date** | **Project QC Require-ments** | **Sample Bottle/ Container** | **Sample Type/Analysis** | **Analytical Specifications** |
|---|---|---|---|---|---|
| G-2978-R1-M5 0.1N $H_2SO_4$ Impinger Solution | 3-28-06 | **DUP/ MS/MSD** | 2+Liter Amber Boston Round 3-30-06 | **0.1N $H_2SO_4$ Impinger Solution, Run #1** Method 0050/26A Train Chloride Analysis | Analyze for HCl by ion chromatography (Method SW-9056/9057). |
| G-2979-R1-M5 0.1N NaOH Impinger Solution | 3-28-06 | **DUP/ MS/MSD** | 500 mL High Density Polyethylene Bottle | **0.1N NaOH Impinger Solution, Run #1** Method 0050/26A Train Chlorine Analysis | Analyze for $Cl_2$ by ion chromatography (Method SW-9056/9057). |
| G-2982-R1-M5 0.1N $H_2SO_4$ Impinger Solution RB | 3-28-06 | **Reagent Blank** | 250 mL Amber Boston Round | **0.1N $H_2SO_4$ Impinger Solution Reagent Blank Run #1** Method 0050/26A Train Chloride Analysis | Analyze for HCl by ion chromatography (Method SW-9056/9057). |
| G-2983-R1-M5 0.1N NaOH Impinger Solution RB | 3-28-06 | **Reagent Blank** | 250 mL High Density Poly-ethylene Bottle | **0.1N NaOH Impinger Solution Reagent Blank Run #1** M5 HCl/$Cl_2$ Train Chlorine Analysis | Analyze for $Cl_2$ by ion chromatography (Method SW-9056/9057). |
| G-3065-R2-M5 0.1N $H_2SO_4$ Impinger Solution | 3-29-06 | **DUP** | 3500 mL High Density Polyethylene Bottle | **0.1N $H_2SO_4$ Impinger Solution, Run #2** Method 0050/26A Train Chloride Analysis | Analyze for HCl by ion chromatography (Method SW-9056/9057). |

# Request for Analysis/Chain-of-Custody – RFA/COC #023 [Method 0050/26A Train]
# Focus/US Filter Westates Carbon
# Comprehensive Performance Test at Parker, Arizona

| Field Sample No./ Sample Coding ID | Sample Collection Date | Project QC Requirements | Sample Bottle/ Container | Sample Type/Analysis | Analytical Specifications |
|---|---|---|---|---|---|
| G-3066-R2-M5 0.1N NaOH Impinger Solution | 3-29-06 | DUP | 500 mL High Density Polyethylene Bottle | **0.1N NaOH Impinger Solution, Run #2**<br><br>Method 0050/26A Train<br><br>Chlorine Analysis | Analyze for $Cl_2$ by ion chromatography (Method SW-9056/9057). |
| G-3149-R3-M5 0.1N $H_2SO_4$ Impinger Solution | 3-30-06 | DUP | 3 500 mL High Density Polyethylene Bottle | **0.1N $H_2SO_4$ Impinger Solution, Run #3**<br><br>Method 0050/26A Train<br><br>Chloride Analysis | Analyze for HCl by ion chromatography (Method SW-9056/9057). |
| G-3150-R3-M5 0.1N NaOH Impinger Solution | 3-30-06 | DUP | 500 mL High Density Polyethylene Bottle | **0.1N NaOH Impinger Solution, Run #3**<br><br>Method 0050/26A Train<br><br>Chlorine Analysis | Analyze for $Cl_2$ by ion chromatography (Method SW-9056/9057). |

# Request for Analysis/Chain-of-Custody – RFA/COC #023 [Method 0050/26A Train]
# Focus/US Filter Westates Carbon
# Comprehensive Performance Test at Parker, Arizona

H1dDH0103

## Sample Receipt Log and Condition of the Samples Upon Receipt:

| Please fill in the following information: | Comments (Please write "NONE" if no comment applicable) |
|---|---|
| (1) Record the identities of any samples that were listed on the RFA but were not found in the sample shipment. | N/A |
| (2) Record the sample shipping cooler temperature of all coolers transporting samples listed on this RFA: | 5.0°C |
| (3) Record any apparent sample loss/breakage. | N/A |
| (4) Record any unidentified samples transported with this shipment of samples: | N/A |
| (5) Indicate if all samples were received according to the project's required specifications (i.e. no nonconformances): | N/A |

## Custody Transfer:

Hand delivered

| | Name | Company | Date/Time |
|---|---|---|---|
| Relinquished By: | | | |
| Accepted By: | [signature] | STL-Knoxville | 4/2/06 16:25 |
| Relinquished By: | | | |
| Accepted By: | | | |
| Relinquished By: | | | |
| Accepted By: | | | |
| Relinquished By: | | | |
| Accepted By: | | | |

# STL KNOXVILLE SAMPLE RECEIPT/CONDITION UPON RECEIPT ANOMALY CHECKLIST

**Client:** Focus **Project:** WesTAtes Carbon **Lot Number:** HL0040103

| Review Items | Yes | No | NA | If No, what was the problem? | Comments/Actions Taken |
|---|---|---|---|---|---|
| 1. Do sample container labels match COC? (IDs, Dates, Times) | ✓ | | | ☐ **1a** Do not match COC<br>☐ **1b** Incomplete information<br>☐ **1c** Marking smeared<br>☐ **1d** Label torn<br>☐ **1e** No label<br>☐ **1f** COC not received<br>☐ **1g** Other: | ~~5b - Sample G3149-K3 MS was listed on COC, only received with~~ M.E. 4/3/06<br>MA - COC - was not relinquished (signed, DATE, or time) |
| 2. Is the cooler temperature within limits? (> freezing temp. of water to 6 °C; NC, 1668, 1613B: 0-4°C; VOST: 10°C; MA: 2-6 °C) | ✓ | | | ☐ **2a** Temp Blank = _____<br>☐ **2b** Cooler Temp = _____ | |
| 3. Were samples received with correct chemical preservative (excluding Encore)? | | | ✓ | ☐ **3a** Sample preservative = | |
| 4. Were custody seals present/intact on cooler and/or containers? | | ✓ | | ☑ **4a** Not present<br>☐ **4b** Not intact<br>☐ **4c** Other: | |
| 5. Were all of the samples listed on the COC received? | ✓ | ~~✗~~ ✓ M.E. 4/3/06 | | ☐ **5a** Samples received-not on COC<br>☐ **5b** Samples not received on COC M.E. 4/3/06 | |
| 6. Were all of the sample containers received intact? | ✓ | | | ☐ **6a** Leaking<br>☐ **6b** Broken | |
| 7. Were VOA samples received without headspace? | | | ✓ | ☐ **7a** Headspace (VOA only) | |
| 8. Were samples received in appropriate containers? | ✓ | | | ☐ **8a** Improper container | |
| 9. Did you check for residual chlorine, if necessary? | | | ✓ | ☐ **9a** Could not be determined due to matrix interference | |
| 10. Were samples received within holding time? | ✓ | | | ☐ **10a** Holding time expired | |
| 11. For rad samples, was sample activity info. provided? | | | ✓ | ☐ Incomplete information | |
| 12. For SOG water samples (1613B, 1668A, 8290, LR PAHs), do samples have visible solids present? | | | ✓ | If yes & appears to be >1%, was SOG notified? _____ | |
| 13. Are the shipping containers intact? | ✓ | | | ☐ **13a** Leaking<br>☐ **13b** Other: | |
| 14. Was COC relinquished? (Signed/Dated/Timed) | | ✓ | | ☐ **14a** Not relinquished | |
| 15. Are tests/parameters listed for each sample? | ✓ | | | ☐ **15a** Incomplete information | |
| 16. Is the matrix of the samples noted? | ✓ | | | ☐ **15a** Incomplete information | |
| 17. Is the date/time of sample collection noted? | ✓ | | | ☐ **15a** Incomplete information | |
| 18. Is the client and project name/# identified? | ✓ | | | ☐ **15a** Incomplete information | |
| 19. Was the sampler identified on the COC? | | | ✓ | | |

Quote #: _____ PM Instructions: _____

Sample Receiving Associate: _____ Date: 4/3/06

QA026R18.doc, 1/30/06