



Analytica Group, LLC-Anchorage
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8/6/2014

Kenai Watershed Forum
44129 Sterling Highway
Soldotna, AK 99669
Attn: Branden Bornemann

Work Order #: A1407461
Date: 8/6/2014
Work ID: KWF Baseline Monitoring 2014
Date Received: 7/22/2014
Proj #: None

Sample Identification

| Lab Sample Number | Client Description | Lab Sample Number | Client Description |
|-------------------|------------------------------|-------------------|-----------------------------|
| A1407461-01 | RM 40 - Bing's Landing | A1407461-02 | RM 43 - Upstream of Dow Isl |
| A1407461-03 | RM 44 - Mouth of Kiley River | A1407461-04 | RM 50 - Skilak Lake Outflow |
| A1407461-05 | Trip Blank | | |

Enclosed are the analytical results for the submitted sample(s). Please review the CASE NARRATIVE for a discussion of any data and/or quality control issues. Listings of data qualifiers, analytical codes, key dates, and QC relationships are provided at the end of the report.

Sincerely,

Claire Toon
Project Manager

"The Science of Analysis, The Art of Service"

Case Narrative

Analytica Group, LLC - Anchorage

Work Order: A1407461

Samples were prepared and analyzed according to EPA or equivalent methods outlined in the following references:

Methods for the Determination of Metals in Environmental Samples, EPA/600/R-94/111, May 1994.

Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater, EPA 600/4-82-057, July 1982.

Standard Methods for the Examination of Water and Wastewater, 21st Edition, 2005.

SAMPLE RECEIPT:

Five (5) samples were received on 7/22/2014 4:35:00 PM, at a temperature of 6.6°C, at Analytica-Anchorage. The samples were received in good condition and in order per chain of custody.

Comments: The samples were transported to the lab by Analytica staff. The samples were received on ice on the collection date.

The samples were transferred for various analyses to Analytica Environmental Laboratories (AEL), 12189 Pennsylvania St., Thornton, Colorado 80241, where they were received at a temperature of 2.2°C, in good condition and in order per chain of custody on 7/25/2014.

REVIEW FOR COMPLIANCE WITH ANALYTICA QA PLAN

A summary of our review is shown below.

All analytical results contained in this report have been reviewed under Analytica's internal quality assurance and quality control program. Any deviations in quality control parameters for specific analyses are noted in the following text. A complete quality assurance report, including laboratory control, matrix spike, and sample duplicate recoveries is kept on file in our office and is available upon request.

All method specifications were met for the following tests, unless otherwise noted:

Test Method: 200.7 - Metals by ICP - Total/TR - Aqueous

Test Method: 624 - Purgeable Organics by GC/MS - VOC - Aqueous

Test Method: SM4500-NO3E - Nitrogen (Nitrate), Cadmium Reduction Method - Nitrate+Nitrite pres - Aqueous

Test Method: SM4500-PE - Total Phos - Aqueous

Detailed Analytical Report

Analytica Group, LLC - Anchorage

Workorder (SDG): A1407461

Project: KWF Baseline Monitoring 2014

Client: Kenai Watershed Forum

Client Project Number: None

Report Section: Client Sample Report

Client Sample Name: **RM 40 - Bing's Landing**

Matrix: Aqueous

Collection Date: 7/22/2014 11:11:00AM

The following test was conducted by: Analytica - Anchorage

Lab Sample Number: A1407461-01A

Analysis Date: 7/31/2014 12:25:00PM

Prep Date: 07-31-2014 12:07

Instrument: Thermospectr

Analytical Method ID: SM4500-NO3E - Nitrogen (Nitrate), Cadmium Reduction Method - N

File Name:

Prep Method ID:

Dilution Factor: 1

Prep Batch Number: A140801001

Report Basis: As Received

Analyst Initials: MC

Sample prep wt./vol: 25.00 ml

Prep Extract Vol: 25.00 ml

| <u>Analyte</u> | <u>CASNo</u> | <u>Result</u> | <u>Flags</u> | <u>Units</u> | <u>PQL</u> | <u>MDL</u> | <u>run #:</u> |
|-----------------------------|--------------|---------------|--------------|--------------|------------|------------|---------------|
| Nitrate-Nitrite as Nitrogen | | 0.139 | | mg/L | 0.10 | 0.015 | 1 |

The following test was conducted by: Analytica - Thornton

Lab Sample Number: A1407461-01B

Analysis Date: 7/31/2014 2:48:09PM

Prep Date: 07-31-2014 11:07

Instrument: Optima7300Icp

Analytical Method ID: 200. 7 - Metals by ICP - Total/TR

File Name: 073114.csv

Prep Method ID: 200.7

Dilution Factor: 1

Prep Batch Number: T140731012

Report Basis: As Received

Analyst Initials: AC

Sample prep wt./vol: 50.00 ml

Prep Extract Vol: 50.00 ml

| <u>Analyte</u> | <u>CASNo</u> | <u>Result</u> | <u>Flags</u> | <u>Units</u> | <u>PQL</u> | <u>MDL</u> | <u>run #:</u> |
|----------------|--------------|---------------|--------------|--------------|------------|------------|---------------|
| Calcium | 7440-70-2 | 10.0 | | mg/L | 0.10 | 0.0020 | 1 |
| Iron | 7439-89-6 | 0.249 | | mg/L | 0.050 | 0.0070 | |
| Magnesium | 7439-96-4 | 0.896 | | mg/L | 0.10 | 0.010 | |

The following test was conducted by: Analytica - Thornton

Lab Sample Number: A1407461-01D

Analysis Date: 7/28/2014 4:23:00PM

Prep Date: 07-28-2014 10:07

Instrument: Nanook

Analytical Method ID: 624 - Purgeable Organics by GC/MS - VOC

File Name: 14072813.D

Prep Method ID:

Dilution Factor: 1

Prep Batch Number: T140729001

Report Basis: As Received

Analyst Initials: CK

Sample prep wt./vol: 5.00 ml

Prep Extract Vol: 5.00 ml

| <u>Analyte</u> | <u>CASNo</u> | <u>Result</u> | <u>Flags</u> | <u>Units</u> | <u>PQL</u> | <u>MDL</u> | <u>Spike</u> | <u>% Recov</u> | <u>LCL</u> | <u>UCL</u> | <u>run #:</u> |
|-----------------------|---------------|---------------|--------------|--------------|------------|------------|--------------|----------------|------------|------------|---------------|
| Benzene | 71-43-2 | ND | | ug/L | 1.0 | 0.30 | | | | | 1 |
| Ethylbenzene | 100-41-4 | ND | | ug/L | 1.0 | 0.30 | | | | | |
| m&p Xylenes | 108-38-3/106- | ND | | ug/L | 1.0 | 0.50 | | | | | |
| O-Xylene | 95-47-6 | ND | | ug/L | 1.0 | 0.20 | | | | | |
| Toluene | 108-88-3 | ND | | ug/L | 1.0 | 0.30 | | | | | |
| <u>Surrogate</u> | <u>CASNo</u> | <u>Result</u> | <u>Flags</u> | <u>Units</u> | <u>PQL</u> | <u>MDL</u> | <u>Spike</u> | <u>% Recov</u> | <u>LCL</u> | <u>UCL</u> | <u>run #:</u> |
| 1,2-Dichloroethane-d4 | 17060-07-0 | 51 | | ug/L | 2.0 | 0.50 | 50 | 101 | 76 | 133 | 1 |
| Dibromofluoromethane | 1868-53-7 | 51 | | ug/L | 2.0 | 0.20 | 50 | 102 | 77 | 141 | |
| p-Bromofluorobenzene | 460-00-4 | 49 | | ug/L | 2.0 | 0.50 | 50 | 97.5 | 80 | 120 | |

Detailed Analytical Report

Analytica Group, LLC - Anchorage

Workorder (SDG): A1407461

Project: KWF Baseline Monitoring 2014

Client: Kenai Watershed Forum

Client Project Number: None

Report Section: Client Sample Report

Client Sample Name: **RM 40 - Bing's Landing**

| | | | |
|-----------------------|-----------------------------------------|-------------------|-------------------------------|
| Matrix: | Aqueous | Collection Date: | 7/22/2014 11:11:00AM |
| Lab Sample Number: | A1407461-01D | Analysis Date: | 7/28/2014 4:23:00PM |
| Prep Date: | 07-28-2014 10:07 | Instrument: | Nanook |
| Analytical Method ID: | 624 - Purgeable Organics by GC/MS - VOC | File Name: | 14072813.D |
| Prep Method ID: | | Dilution Factor: | 1 |
| Prep Batch Number: | T140729001 | Analyst Initials: | CK |
| Report Basis: | As Received | Prep Extract Vol: | 5.00 ml |
| Sample prep wt./vol: | 5.00 ml | | |
| Toluene D-8 | 108-88-3D | 50 | ug/L 2.0 0.22 50 101 81 129 1 |

The following test was conducted by: Analytica - Thornton

| | | | |
|-----------------------|------------------------|-------------------|--------------------|
| Lab Sample Number: | A1407461-01C | Analysis Date: | 8/5/2014 2:44:00PM |
| Prep Date: | 08-05-2014 11:08 | Instrument: | Hach DR 3900 |
| Analytical Method ID: | SM4500-PE - Total Phos | File Name: | |
| Prep Method ID: | 4500-PB | Dilution Factor: | 1 |
| Prep Batch Number: | T140804020 | Analyst Initials: | jkk |
| Report Basis: | As Received | Prep Extract Vol: | 10.00 ml |
| Sample prep wt./vol: | 10.00 ml | | |

| <u>Analyte</u> | <u>CASNo</u> | <u>Result</u> | <u>Flags</u> | <u>Units</u> | <u>PQL</u> | <u>MDL</u> | <u>run #:</u> |
|-----------------------------|--------------|---------------|--------------|--------------|------------|------------|---------------|
| Phosphorus, Total and Ortho | | ND | | mg/L | 0.051 | 0.026 | 1 |

Detailed Analytical Report

Analytica Group, LLC - Anchorage

Workorder (SDG): A1407461

Project: KWF Baseline Monitoring 2014

Client: Kenai Watershed Forum

Client Project Number: None

Report Section: Client Sample Report

Client Sample Name: **RM 43 - Upstream of Dow Island**

Matrix: Aqueous

Collection Date: 7/22/2014 10:18:00AM

The following test was conducted by: Analytica - Anchorage

Lab Sample Number: A1407461-02A

Analysis Date: 7/31/2014 12:25:00PM

Prep Date: 07-31-2014 12:07

Instrument: Thermospectr

Analytical Method ID: SM4500-NO3E - Nitrogen (Nitrate), Cadmium Reduction Method - N

File Name:

Prep Method ID:

Dilution Factor: 1

Prep Batch Number: A140801001

Report Basis: As Received

Analyst Initials: MC

Sample prep wt./vol: 25.00 ml

Prep Extract Vol: 25.00 ml

| <u>Analyte</u> | <u>CASNo</u> | <u>Result</u> | <u>Flags</u> | <u>Units</u> | <u>PQL</u> | <u>MDL</u> | <u>run #:</u> |
|-----------------------------|--------------|---------------|--------------|--------------|------------|------------|---------------|
| Nitrate-Nitrite as Nitrogen | | 0.137 | | mg/L | 0.10 | 0.015 | 1 |

The following test was conducted by: Analytica - Thornton

Lab Sample Number: A1407461-02B

Analysis Date: 7/31/2014 2:50:46PM

Prep Date: 07-31-2014 11:07

Instrument: Optima7300Icp

Analytical Method ID: 200. 7 - Metals by ICP - Total/TR

File Name: 073114.csv

Prep Method ID: 200.7

Dilution Factor: 1

Prep Batch Number: T140731012

Report Basis: As Received

Analyst Initials: AC

Sample prep wt./vol: 50.00 ml

Prep Extract Vol: 50.00 ml

| <u>Analyte</u> | <u>CASNo</u> | <u>Result</u> | <u>Flags</u> | <u>Units</u> | <u>PQL</u> | <u>MDL</u> | <u>run #:</u> |
|----------------|--------------|---------------|--------------|--------------|------------|------------|---------------|
| Calcium | 7440-70-2 | 9.76 | | mg/L | 0.10 | 0.0020 | 1 |
| Iron | 7439-89-6 | 0.304 | | mg/L | 0.050 | 0.0070 | |
| Magnesium | 7439-96-4 | 0.898 | | mg/L | 0.10 | 0.010 | |

The following test was conducted by: Analytica - Thornton

Lab Sample Number: A1407461-02D

Analysis Date: 7/28/2014 4:56:00PM

Prep Date: 07-28-2014 10:07

Instrument: Nanook

Analytical Method ID: 624 - Purgeable Organics by GC/MS - VOC

File Name: 14072814.D

Prep Method ID:

Dilution Factor: 1

Prep Batch Number: T140729001

Report Basis: As Received

Analyst Initials: CK

Sample prep wt./vol: 5.00 ml

Prep Extract Vol: 5.00 ml

| <u>Analyte</u> | <u>CASNo</u> | <u>Result</u> | <u>Flags</u> | <u>Units</u> | <u>PQL</u> | <u>MDL</u> | <u>Spike</u> | <u>% Recov</u> | <u>LCL</u> | <u>UCL</u> | <u>run #:</u> |
|-----------------------|---------------|---------------|--------------|--------------|------------|------------|--------------|----------------|------------|------------|---------------|
| Benzene | 71-43-2 | ND | | ug/L | 1.0 | 0.30 | | | | | 1 |
| Ethylbenzene | 100-41-4 | ND | | ug/L | 1.0 | 0.30 | | | | | |
| m&p Xylenes | 108-38-3/106- | ND | | ug/L | 1.0 | 0.50 | | | | | |
| O-Xylene | 95-47-6 | ND | | ug/L | 1.0 | 0.20 | | | | | |
| Toluene | 108-88-3 | ND | | ug/L | 1.0 | 0.30 | | | | | |
| <u>Surrogate</u> | <u>CASNo</u> | <u>Result</u> | <u>Flags</u> | <u>Units</u> | <u>PQL</u> | <u>MDL</u> | <u>Spike</u> | <u>% Recov</u> | <u>LCL</u> | <u>UCL</u> | <u>run #:</u> |
| 1,2-Dichloroethane-d4 | 17060-07-0 | 50 | | ug/L | 2.0 | 0.50 | 50 | 99.7 | 76 | 133 | 1 |
| Dibromofluoromethane | 1868-53-7 | 51 | | ug/L | 2.0 | 0.20 | 50 | 102 | 77 | 141 | |
| p-Bromofluorobenzene | 460-00-4 | 49 | | ug/L | 2.0 | 0.50 | 50 | 97.7 | 80 | 120 | |

Detailed Analytical Report

Analytica Group, LLC - Anchorage

Workorder (SDG): A1407461

Project: KWF Baseline Monitoring 2014

Client: Kenai Watershed Forum

Client Project Number: None

Report Section: Client Sample Report

Client Sample Name: **RM 43 - Upstream of Dow Island**

| | | | |
|-----------------------|-----------------------------------------|-------------------|--------------------------------|
| Matrix: | Aqueous | Collection Date: | 7/22/2014 10:18:00AM |
| Lab Sample Number: | A1407461-02D | Analysis Date: | 7/28/2014 4:56:00PM |
| Prep Date: | 07-28-2014 10:07 | Instrument: | Nanook |
| Analytical Method ID: | 624 - Purgeable Organics by GC/MS - VOC | File Name: | 14072814.D |
| Prep Method ID: | | Dilution Factor: | 1 |
| Prep Batch Number: | T140729001 | Analyst Initials: | CK |
| Report Basis: | As Received | Prep Extract Vol: | 5.00 ml |
| Sample prep wt./vol: | 5.00 ml | | |
| Toluene D-8 | 108-88-3D | 50 | ug/L 2.0 0.22 50 99.6 81 129 1 |

The following test was conducted by: Analytica - Thornton

| | | | |
|-----------------------|------------------------|-------------------|--------------------|
| Lab Sample Number: | A1407461-02C | Analysis Date: | 8/5/2014 2:44:00PM |
| Prep Date: | 08-05-2014 11:08 | Instrument: | Hach DR 3900 |
| Analytical Method ID: | SM4500-PE - Total Phos | File Name: | |
| Prep Method ID: | 4500-PB | Dilution Factor: | 1 |
| Prep Batch Number: | T140804020 | Analyst Initials: | jkk |
| Report Basis: | As Received | Prep Extract Vol: | 10.00 ml |
| Sample prep wt./vol: | 10.00 ml | | |

| <u>Analyte</u> | <u>CASNo</u> | <u>Result</u> | <u>Flags</u> | <u>Units</u> | <u>PQL</u> | <u>MDL</u> | <u>run #:</u> |
|-----------------------------|--------------|---------------|--------------|--------------|------------|------------|---------------|
| Phosphorus, Total and Ortho | | ND | | mg/L | 0.051 | 0.026 | 1 |

Detailed Analytical Report

Analytica Group, LLC - Anchorage

Workorder (SDG): A1407461

Project: KWF Baseline Monitoring 2014

Client: Kenai Watershed Forum

Client Project Number: None

Report Section: Client Sample Report

Client Sample Name: **RM 44 - Mouth of Kiley River**

Matrix: Aqueous

Collection Date: 7/22/2014 9:26:00AM

The following test was conducted by: Analytica - Anchorage

Lab Sample Number: A1407461-03A

Analysis Date: 7/31/2014 12:25:00PM

Prep Date: 07-31-2014 12:07

Instrument: Thermospectr

Analytical Method ID: SM4500-NO3E - Nitrogen (Nitrate), Cadmium Reduction Method - N

File Name:

Prep Method ID:

Dilution Factor: 1

Prep Batch Number: A140801001

Report Basis: As Received

Analyst Initials: MC

Sample prep wt./vol: 25.00 ml

Prep Extract Vol: 25.00 ml

| <u>Analyte</u> | <u>CASNo</u> | <u>Result</u> | <u>Flags</u> | <u>Units</u> | <u>PQL</u> | <u>MDL</u> | <u>run #:</u> |
|-----------------------------|--------------|---------------|--------------|--------------|------------|------------|---------------|
| Nitrate-Nitrite as Nitrogen | | ND | | mg/L | 0.10 | 0.015 | 1 |

The following test was conducted by: Analytica - Thornton

Lab Sample Number: A1407461-03B

Analysis Date: 7/31/2014 2:53:24PM

Prep Date: 07-31-2014 11:07

Instrument: Optima7300Icp

Analytical Method ID: 200. 7 - Metals by ICP - Total/TR

File Name: 073114.csv

Prep Method ID: 200.7

Dilution Factor: 1

Prep Batch Number: T140731012

Report Basis: As Received

Analyst Initials: AC

Sample prep wt./vol: 50.00 ml

Prep Extract Vol: 50.00 ml

| <u>Analyte</u> | <u>CASNo</u> | <u>Result</u> | <u>Flags</u> | <u>Units</u> | <u>PQL</u> | <u>MDL</u> | <u>run #:</u> |
|----------------|--------------|---------------|--------------|--------------|------------|------------|---------------|
| Calcium | 7440-70-2 | 3.62 | | mg/L | 0.10 | 0.0020 | 1 |
| Iron | 7439-89-6 | 1.87 | | mg/L | 0.050 | 0.0070 | |
| Magnesium | 7439-96-4 | 1.15 | | mg/L | 0.10 | 0.010 | |

The following test was conducted by: Analytica - Thornton

Lab Sample Number: A1407461-03C

Analysis Date: 8/5/2014 2:44:00PM

Prep Date: 08-05-2014 11:08

Instrument: Hach DR 3900

Analytical Method ID: SM4500-PE - Total Phos

File Name:

Prep Method ID: 4500-PB

Dilution Factor: 1

Prep Batch Number: T140804020

Report Basis: As Received

Analyst Initials: jkk

Sample prep wt./vol: 10.00 ml

Prep Extract Vol: 10.00 ml

| <u>Analyte</u> | <u>CASNo</u> | <u>Result</u> | <u>Flags</u> | <u>Units</u> | <u>PQL</u> | <u>MDL</u> | <u>run #:</u> |
|-----------------------------|--------------|---------------|--------------|--------------|------------|------------|---------------|
| Phosphorus, Total and Ortho | | ND | | mg/L | 0.051 | 0.026 | 1 |

Detailed Analytical Report

Analytica Group, LLC - Anchorage

Workorder (SDG): A1407461

Project: KWF Baseline Monitoring 2014

Client: Kenai Watershed Forum

Client Project Number: None

Report Section: Client Sample Report

Client Sample Name: **RM 50 - Skilak Lake Outflow**

Matrix: Aqueous

Collection Date: 7/22/2014 8:31:00AM

The following test was conducted by: Analytica - Anchorage

Lab Sample Number: A1407461-04A

Analysis Date: 8/4/2014 11:45:00AM

Prep Date: 08-04-2014 11:08

Instrument: Thermospectr

Analytical Method ID: SM4500-NO3E - Nitrogen (Nitrate), Cadmium Reduction Method - N

File Name:

Prep Method ID:

Dilution Factor: 1

Prep Batch Number: A140805010

Report Basis: As Received

Analyst Initials: MC

Sample prep wt./vol: 25.00 ml

Prep Extract Vol: 25.00 ml

| <u>Analyte</u> | <u>CASNo</u> | <u>Result</u> | <u>Flags</u> | <u>Units</u> | <u>PQL</u> | <u>MDL</u> | <u>run #:</u> |
|-----------------------------|--------------|---------------|--------------|--------------|------------|------------|---------------|
| Nitrate-Nitrite as Nitrogen | | 0.147 | | mg/L | 0.10 | 0.015 | 1 |

The following test was conducted by: Analytica - Thornton

Lab Sample Number: A1407461-04B

Analysis Date: 7/31/2014 2:56:00PM

Prep Date: 07-31-2014 11:07

Instrument: Optima7300Icp

Analytical Method ID: 200. 7 - Metals by ICP - Total/TR

File Name: 073114.csv

Prep Method ID: 200.7

Dilution Factor: 1

Prep Batch Number: T140731012

Report Basis: As Received

Analyst Initials: AC

Sample prep wt./vol: 50.00 ml

Prep Extract Vol: 50.00 ml

| <u>Analyte</u> | <u>CASNo</u> | <u>Result</u> | <u>Flags</u> | <u>Units</u> | <u>PQL</u> | <u>MDL</u> | <u>run #:</u> |
|----------------|--------------|---------------|--------------|--------------|------------|------------|---------------|
| Calcium | 7440-70-2 | 10.3 | | mg/L | 0.10 | 0.0020 | 1 |
| Iron | 7439-89-6 | 0.112 | | mg/L | 0.050 | 0.0070 | |
| Magnesium | 7439-96-4 | 0.861 | | mg/L | 0.10 | 0.010 | |

The following test was conducted by: Analytica - Thornton

Lab Sample Number: A1407461-04C

Analysis Date: 8/5/2014 2:44:00PM

Prep Date: 08-05-2014 11:08

Instrument: Hach DR 3900

Analytical Method ID: SM4500-PE - Total Phos

File Name:

Prep Method ID: 4500-PB

Dilution Factor: 1

Prep Batch Number: T140804020

Report Basis: As Received

Analyst Initials: jkk

Sample prep wt./vol: 10.00 ml

Prep Extract Vol: 10.00 ml

| <u>Analyte</u> | <u>CASNo</u> | <u>Result</u> | <u>Flags</u> | <u>Units</u> | <u>PQL</u> | <u>MDL</u> | <u>run #:</u> |
|-----------------------------|--------------|---------------|--------------|--------------|------------|------------|---------------|
| Phosphorus, Total and Ortho | | ND | | mg/L | 0.051 | 0.026 | 1 |

Detailed Analytical Report

Analytica Group, LLC - Anchorage

Workorder (SDG): A1407461

Project: KWF Baseline Monitoring 2014

Client: Kenai Watershed Forum

Client Project Number: None

Report Section: Client Sample Report

Client Sample Name: Trip Blank

Matrix: Aqueous

Collection Date: 7/22/2014 10:18:00AM

The following test was conducted by: Analytica - Thornton

Lab Sample Number: A1407461-05A

Prep Date: 07-28-2014 10:07

Analytical Method ID: 624 - Purgeable Organics by GC/MS - VOC

Prep Method ID:

Prep Batch Number: T140729001

Report Basis: As Received

Sample prep wt./vol: 5.00 ml

Analysis Date: 7/28/2014 2:47:00PM

Instrument: Nanook

File Name: 14072810.D

Dilution Factor: 1

Analyst Initials: CK

Prep Extract Vol: 5.00 ml

| <u>Analyte</u> | <u>CASNo</u> | <u>Result</u> | <u>Flags</u> | <u>Units</u> | <u>PQL</u> | <u>MDL</u> | | | | | <u>run #:</u> |
|-----------------------|---------------|---------------|--------------|--------------|------------|------------|--------------|----------------|------------|------------|---------------|
| Benzene | 71-43-2 | ND | | ug/L | 1.0 | 0.30 | | | | | 1 |
| Ethylbenzene | 100-41-4 | ND | | ug/L | 1.0 | 0.30 | | | | | |
| m&p Xylenes | 108-38-3/106- | ND | | ug/L | 1.0 | 0.50 | | | | | |
| O-Xylene | 95-47-6 | ND | | ug/L | 1.0 | 0.20 | | | | | |
| Toluene | 108-88-3 | ND | | ug/L | 1.0 | 0.30 | | | | | |
| <u>Surrogate</u> | <u>CASNo</u> | <u>Result</u> | <u>Flags</u> | <u>Units</u> | <u>PQL</u> | <u>MDL</u> | <u>Spike</u> | <u>% Recov</u> | <u>LCL</u> | <u>UCL</u> | <u>run #:</u> |
| 1,2-Dichloroethane-d4 | 17060-07-0 | 50 | | ug/L | 2.0 | 0.50 | 50 | 99.9 | 76 | 133 | 1 |
| Dibromofluoromethane | 1868-53-7 | 50 | | ug/L | 2.0 | 0.20 | 50 | 99.5 | 77 | 141 | |
| p-Bromofluorobenzene | 460-00-4 | 49 | | ug/L | 2.0 | 0.50 | 50 | 98.0 | 80 | 120 | |
| Toluene D-8 | 108-88-3D | 50 | | ug/L | 2.0 | 0.22 | 50 | 100 | 81 | 129 | |

Detailed Analytical Report

Analytica Group, LLC - Anchorage

Workorder (SDG): A1407461

Project: KWF Baseline Monitoring 2014

Client: Kenai Watershed Forum

Client Project Number: None

Report Section: Method Blank Report

Client Sample Name: MB

Matrix: Aqueous

Collection Date: 7/31/2014 12:25:00PM

The following test was conducted by: Analytica - Anchorage

Lab Sample Number: A140801001-MB

Analysis Date: 7/31/2014 12:25:00PM

Prep Date: 07-31-2014 12:07

Instrument: Thermospectr

Analytical Method ID: SM4500-NO3E - Nitrogen (Nitrate), Cadmium Reduction Method - N

File Name:

Prep Method ID:

Dilution Factor: 1

Prep Batch Number: A140801001

Report Basis: As Received

Analyst Initials: MC

Sample prep wt./vol: 25.00 ml

Prep Extract Vol: 25.00 ml

| <u>Analyte</u> | <u>CASNo</u> | <u>Result</u> | <u>Flags</u> | <u>Units</u> | <u>PQL</u> | <u>MDL</u> | <u>run #:</u> |
|-----------------------------|--------------|---------------|--------------|--------------|------------|------------|---------------|
| Nitrate-Nitrite as Nitrogen | | ND | | mg/L | 0.10 | 0.015 | 1 |

Lab Sample Number: A140805010-MB

Analysis Date: 8/4/2014 11:45:00AM

Prep Date: 08-04-2014 11:08

Instrument: Thermospectr

Analytical Method ID: SM4500-NO3E - Nitrogen (Nitrate), Cadmium Reduction Method - N

File Name:

Prep Method ID:

Dilution Factor: 1

Prep Batch Number: A140805010

Report Basis: As Received

Analyst Initials: MC

Sample prep wt./vol: 25.00 ml

Prep Extract Vol: 25.00 ml

| <u>Analyte</u> | <u>CASNo</u> | <u>Result</u> | <u>Flags</u> | <u>Units</u> | <u>PQL</u> | <u>MDL</u> | <u>run #:</u> |
|-----------------------------|--------------|---------------|--------------|--------------|------------|------------|---------------|
| Nitrate-Nitrite as Nitrogen | | ND | | mg/L | 0.10 | 0.015 | 1 |

The following test was conducted by: Analytica - Thornton

Lab Sample Number: T140731012-MB

Analysis Date: 7/31/2014 1:46:21PM

Prep Date: 07-31-2014 11:07

Instrument: Optima7300Icp

Analytical Method ID: 200.7 - Metals by ICP - Total/TR

File Name: 073114.csv

Prep Method ID: 200.7

Dilution Factor: 1

Prep Batch Number: T140731012

Report Basis: As Received

Analyst Initials: AC

Sample prep wt./vol: 50.00 ml

Prep Extract Vol: 50.00 ml

| <u>Analyte</u> | <u>CASNo</u> | <u>Result</u> | <u>Flags</u> | <u>Units</u> | <u>PQL</u> | <u>MDL</u> | <u>run #:</u> |
|----------------|--------------|---------------|--------------|--------------|------------|------------|---------------|
| Calcium | 7440-70-2 | ND | | mg/L | 0.10 | 0.0020 | 2 |
| Iron | 7439-89-6 | ND | | mg/L | 0.050 | 0.0070 | |
| Magnesium | 7439-96-4 | ND | | mg/L | 0.10 | 0.010 | |

The following test was conducted by: Analytica - Thornton

Lab Sample Number: T140729001-MB

Analysis Date: 7/28/2014 1:11:00PM

Prep Date: 07-28-2014 10:07

Instrument: Nanook

Analytical Method ID: 624 - Purgeable Organics by GC/MS - VOC

File Name: 14072807.D

Prep Method ID:

Dilution Factor: 1

Prep Batch Number: T140729001

Report Basis: As Received

Analyst Initials: CK

Sample prep wt./vol: 5.00 ml

Prep Extract Vol: 5.00 ml

| <u>Analyte</u> | <u>CASNo</u> | <u>Result</u> | <u>Flags</u> | <u>Units</u> | <u>PQL</u> | <u>MDL</u> | <u>run #:</u> |
|----------------|--------------|---------------|--------------|--------------|------------|------------|---------------|
|----------------|--------------|---------------|--------------|--------------|------------|------------|---------------|

Detailed Analytical Report

Analytica Group, LLC - Thornton

Workorder (SDG): A1407461

Project: KWF Baseline Monitoring 2014

Client: Kenai Watershed Forum

Client Project Number: None

Report Section: Method Blank Report

Client Sample Name: MB

Matrix: Aqueous Collection Date: 7/28/2014 10:00:00AM

Lab Sample Number: T140729001-MB Analysis Date: 7/28/2014 1:11:00PM
Prep Date: 07-28-2014 10:07 Instrument: Nanook
Analytical Method ID: 624 - Purgeable Organics by GC/MS - VOC File Name: 14072807.D
Prep Method ID: Dilution Factor: 1
Prep Batch Number: T140729001
Report Basis: As Received Analyst Initials: CK
Sample prep wt./vol: 5.00 ml Prep Extract Vol: 5.00 ml

| <u>Analyte</u> | <u>CASNo</u> | <u>Result</u> | <u>Flags</u> | <u>Units</u> | <u>PQL</u> | <u>MDL</u> | | | | | <u>run #:</u> |
|-----------------------|---------------|---------------|--------------|--------------|------------|------------|--------------|----------------|------------|------------|---------------|
| Benzene | 71-43-2 | ND | | ug/L | 1.0 | 0.30 | | | | | 1 |
| Ethylbenzene | 100-41-4 | ND | | ug/L | 1.0 | 0.30 | | | | | |
| m&p Xylenes | 108-38-3/106- | ND | | ug/L | 1.0 | 0.50 | | | | | |
| O-Xylene | 95-47-6 | ND | | ug/L | 1.0 | 0.20 | | | | | |
| Toluene | 108-88-3 | ND | | ug/L | 1.0 | 0.30 | | | | | |
| <u>Surrogate</u> | <u>CASNo</u> | <u>Result</u> | <u>Flags</u> | <u>Units</u> | <u>PQL</u> | <u>MDL</u> | <u>Spike</u> | <u>% Recov</u> | <u>LCL</u> | <u>UCL</u> | <u>run #:</u> |
| 1,2-Dichloroethane-d4 | 17060-07-0 | 50 | | ug/L | 2.0 | 0.50 | 50 | 99.0 | 76 | 133 | 1 |
| Dibromofluoromethane | 1868-53-7 | 49 | | ug/L | 2.0 | 0.20 | 50 | 98.8 | 77 | 141 | |
| p-Bromofluorobenzene | 460-00-4 | 52 | | ug/L | 2.0 | 0.50 | 50 | 103 | 80 | 120 | |
| Toluene D-8 | 108-88-3D | 48 | | ug/L | 2.0 | 0.22 | 50 | 96.2 | 81 | 129 | |

The following test was conducted by: Analytica - Thornton

Lab Sample Number: T140804020-MB Analysis Date: 8/5/2014 2:44:00PM
Prep Date: 08-05-2014 11:08 Instrument: Hach DR 3900
Analytical Method ID: SM4500-PE - Total Phos File Name:
Prep Method ID: 4500-PB Dilution Factor: 1
Prep Batch Number: T140804020
Report Basis: As Received Analyst Initials: jkk
Sample prep wt./vol: 10.00 ml Prep Extract Vol: 10.00 ml

| <u>Analyte</u> | <u>CASNo</u> | <u>Result</u> | <u>Flags</u> | <u>Units</u> | <u>PQL</u> | <u>MDL</u> | | | | | <u>run #:</u> |
|-----------------------------|--------------|---------------|--------------|--------------|------------|------------|--|--|--|--|---------------|
| Phosphorus, Total and Ortho | | ND | | mg/L | 0.051 | 0.026 | | | | | 1 |

Detailed Analytical Report

Analytica Group, LLC - Thornton

Workorder (SDG): A1407461

Project: KWF Baseline Monitoring 2014

Client: Kenai Watershed Forum

Client Project Number: None

Tests Run at: Analytica Environmental Laboratories - Anchorage, Alaska

Workorder (SDG): A1407461

Project: KWF Baseline Monitoring 2014

Project Number:

Prep Batch: A140801001

QUALITY CONTROL REPORT

LCS REPORT

Analysis: SM4500-NO3E - Nitrogen (Nitrate), Cadmium Reduction Method - MB: A140801001-MB

Prep Date: 7/31/2014

MB Anal. Date: 7/31/2014 12:25:00PM

Units: mg/L

LCS Anal. Date: 7/31/2014 12:25:00PM

Matrix: Aqueous

| <u>Analyte Name</u> | <u>SampResult</u> | <u>LCSRes.</u> | <u>SPLev</u> | <u>Recov.</u> | <u>Recov Lim</u> | <u>RPDLim</u> | <u>Flag</u> |
|-----------------------------|-------------------|----------------|--------------|---------------|------------------|---------------|-------------|
| Nitrate-Nitrite as Nitrogen | ND | 5.08 | 5.16 | 98.4 | 90 - 110 | | |

Prep Batch: A140805010

SAMPLE DUPLICATE REPORT

Analysis: SM4500-NO3E - Nitrogen (Nitrate), Cadmium Reduction Method - Base Sample: A1407461-04A

Prep Date: 8/4/2014

Samp. Anal. Date: 8/4/2014 11:45:00AM

Units: mg/L

DUP Anal. Date: 8/4/2014 11:45:00AM

Matrix: Aqueous

| <u>Analyte Name</u> | <u>SampResult</u> | <u>DUPRes.</u> | <u>RPD</u> | <u>RPDLim</u> | <u>Flag</u> |
|-----------------------------|-------------------|----------------|------------|---------------|-------------|
| Nitrate-Nitrite as Nitrogen | 0.147 | 0.139 | 5.6 | 20 | |

LCS REPORT

Analysis: SM4500-NO3E - Nitrogen (Nitrate), Cadmium Reduction Method - MB: A140805010-MB

Prep Date: 8/4/2014

MB Anal. Date: 8/4/2014 11:45:00AM

Units: mg/L

LCS Anal. Date: 8/4/2014 11:45:00AM

Matrix: Aqueous

| <u>Analyte Name</u> | <u>SampResult</u> | <u>LCSRes.</u> | <u>SPLev</u> | <u>Recov.</u> | <u>Recov Lim</u> | <u>RPDLim</u> | <u>Flag</u> |
|-----------------------------|-------------------|----------------|--------------|---------------|------------------|---------------|-------------|
| Nitrate-Nitrite as Nitrogen | ND | 5.05 | 5.16 | 97.9 | 90 - 110 | | |

MS REPORT

Analysis: SM4500-NO3E - Nitrogen (Nitrate), Cadmium Reduction Method - Parent: A1407461-04A

Prep Date: 8/4/2014

Samp. Anal. Date: 8/4/2014 11:45:00AM

Units: mg/L

MS Anal. Date: 8/4/2014 11:45:00AM

Matrix: Aqueous

| <u>Analyte Name</u> | <u>SampResult</u> | <u>MSRes.</u> | <u>SPLev</u> | <u>Recov.</u> | <u>Recov Lim</u> | <u>Flag</u> |
|-----------------------------|-------------------|---------------|--------------|---------------|------------------|-------------|
| Nitrate-Nitrite as Nitrogen | 0.147 | 0.342 | 0.206 | 94.5 | 80 - 120 | |

Detailed Analytical Report

Analytica Group, LLC - Thornton

Workorder (SDG): A1407461

Project: KWF Baseline Monitoring 2014

Client: Kenai Watershed Forum

Client Project Number: None

FOOTNOTES TO QC REPORT

Note 1: Results are shown to three significant figures to avoid rounding errors in calculations.

Note 2: If the sample concentration is greater than 4 times the spike level, a recovery is not meaningful, and the result should be used as a replicate. In such cases the spike is not as high as expected random measurement variability of the sample result itself.

Note 3: For sample duplicates, if the result is less than the PQL, the duplicate RPD is not applicable. If the sample and duplicate results are not five times the PQL or greater, then the RPD is not expected to fall within the window shown and the comparison should be made on the basis of the absolute difference. Analytica uses the criterion that the absolute difference should be less than the PQL for water or less than 2XPQL for other matrices.

Note 4: For serial dilutions, if the result is less than the PQL, the duplicate RPD is not applicable. If the sample result is not 50 times the MDL or greater, then the fact that the RPD does not meet the 10% criterion has little significance. Otherwise it indicates that a matrix bias may exist at the analytical step.

Detailed Analytical Report

Analytica Group, LLC - Thornton

Workorder (SDG): A1407461

Project: KWF Baseline Monitoring 2014

Client: Kenai Watershed Forum

Client Project Number: None

Tests Run at: Analytica Environmental Laboratories - Thornton, Colorado

Workorder (SDG): A1407461

Project: KWF Baseline Monitoring 2014

Project Number:

Prep Batch: T140731012

QUALITY CONTROL REPORT

LCS REPORT

Analysis: 200. 7 - Metals by ICP - Total/TR

MB: T140731012-MB

Prep Date: 7/31/2014

MB Anal. Date: 7/31/2014 1:46:21PM

Units: mg/L

LCS Anal. Date: 7/31/2014 1:51:21PM

Matrix: Aqueous

| <u>Analyte Name</u> | <u>SampResult</u> | <u>LCSRes.</u> | <u>SPLev</u> | <u>Recov.</u> | <u>Recov Lim</u> | <u>RPDLim</u> | <u>Flag</u> |
|---------------------|-------------------|----------------|--------------|---------------|------------------|---------------|-------------|
| Calcium | ND | 9.37 | 10.0 | 93.7 | 85 - 115 | | |
| Iron | ND | 1.01 | 1.00 | 101.0 | 85 - 115 | | |
| Magnesium | ND | 9.82 | 10.0 | 98.2 | 85 - 115 | | |

FOOTNOTES TO QC REPORT

Note 1: Results are shown to three significant figures to avoid rounding errors in calculations.

Note 2: If the sample concentration is greater than 4 times the spike level, a recovery is not meaningful, and the result should be used as a replicate. In such cases the spike is not as high as expected random measurement variability of the sample result itself.

Note 3: For sample duplicates, if the result is less than the PQL, the duplicate RPD is not applicable. If the sample and duplicate results are not five times the PQL or greater, then the RPD is not expected to fall within the window shown and the comparison should be made on the basis of the absolute difference. Analytica uses the criterion that the absolute difference should be less than the PQL for water or less than 2XPQL for other matrices.

Note 4: For serial dilutions, if the result is less than the PQL, the duplicate RPD is not applicable. If the sample result is not 50 times the MDL or greater, then the fact that the RPD does not meet the 10% criterion has little significance. Otherwise it indicates that a matrix bias may exist at the analytical step.

Detailed Analytical Report

Analytica Group, LLC - Thornton

Workorder (SDG): A1407461

Project: KWF Baseline Monitoring 2014

Client: Kenai Watershed Forum

Client Project Number: None

Tests Run at: Analytica Environmental Laboratories - Thornton, Colorado

Workorder (SDG): A1407461

Project: KWF Baseline Monitoring 2014

Project Number:

Prep Batch: T140729001

QUALITY CONTROL REPORT

LCS/LCSD REPORT

Analysis: 624 - Purgeable Organics by GC/MS - VOC

MB: T140729001-MB

Prep Date: 7/28/2014

MB Anal. Date: 7/28/2014 1:11:00PM

Units: ug/L

LCS Anal. Date: 7/28/2014 11:34:00AM LCSD Anal. Date: 7/28/2014 12:06:00PM Matrix: Aqueous

| Analyte Name | SampResult | LCSRes. | SDRes. | SPLev | SPDLv | Recov. | SD Recov | RPD | Recov Lim | RPDLim | Flag |
|--------------|------------|---------|--------|-------|-------|--------|----------|-----|-----------|--------|------|
| Benzene | ND | 25.6 | 25.9 | 25.0 | 25.0 | 102.4 | 103.6 | 1.2 | 72 - 132 | 20 | |
| Toluene | ND | 25.8 | 26.0 | 25.0 | 25.0 | 103.2 | 104.0 | 0.8 | 80 - 120 | 20 | |
| Ethylbenzene | ND | 25.0 | 25.4 | 25.0 | 25.0 | 100.0 | 101.6 | 1.6 | 79 - 126 | 20 | |
| m&p Xylenes | ND | 50.5 | 51.1 | 50.0 | 50.0 | 101.0 | 102.2 | 1.2 | 76 - 119 | 20 | |
| O-Xylene | ND | 25.1 | 25.3 | 25.0 | 25.0 | 100.4 | 101.2 | 0.8 | 84 - 123 | 20 | |

MS/MSD REPORT

Analysis: 624 - Purgeable Organics by GC/MS - VOC

Parent: A1407461-02D

Prep Date: 7/28/2014

Samp. Anal. Date: 7/28/2014 4:56:00PM

Units: ug/L

MS Anal. Date: 7/28/2014 5:27:00PM MSD Anal. Date: 7/28/2014 5:59:00PM Matrix: Aqueous

| Analyte Name | SampResult | MSRes. | MSDRes | SPLev | SPDLv | Recov. | MSD Rec. | RPD | Recov Lim | RPDLim | Flag |
|--------------|------------|--------|--------|-------|-------|--------|----------|-----|-----------|--------|------|
| Benzene | ND | 128 | 137 | 125 | 125 | 102.4 | 109.6 | 6.8 | 72 - 132 | 20 | |
| Toluene | ND | 127 | 137 | 125 | 125 | 101.6 | 109.6 | 7.6 | 80 - 120 | 20 | |
| Ethylbenzene | ND | 123 | 133 | 125 | 125 | 98.4 | 106.4 | 7.8 | 79 - 126 | 20 | |
| m&p Xylenes | ND | 249 | 269 | 250 | 250 | 99.6 | 107.6 | 7.7 | 76 - 119 | 20 | |
| O-Xylene | ND | 124 | 134 | 125 | 125 | 99.2 | 107.2 | 7.8 | 84 - 123 | 20 | |

Detailed Analytical Report

Analytica Group, LLC - Thornton

Workorder (SDG): A1407461

Project: KWF Baseline Monitoring 2014

Client: Kenai Watershed Forum

Client Project Number: None

FOOTNOTES TO QC REPORT

Note 1: Results are shown to three significant figures to avoid rounding errors in calculations.

Note 2: If the sample concentration is greater than 4 times the spike level, a recovery is not meaningful, and the result should be used as a replicate. In such cases the spike is not as high as expected random measurement variability of the sample result itself.

Note 3: For sample duplicates, if the result is less than the PQL, the duplicate RPD is not applicable. If the sample and duplicate results are not five times the PQL or greater, then the RPD is not expected to fall within the window shown and the comparison should be made on the basis of the absolute difference. Analytica uses the criterion that the absolute difference should be less than the PQL for water or less than 2XPQL for other matrices.

Note 4: For serial dilutions, if the result is less than the PQL, the duplicate RPD is not applicable. If the sample result is not 50 times the MDL or greater, then the fact that the RPD does not meet the 10% criterion has little significance. Otherwise it indicates that a matrix bias may exist at the analytical step.

Detailed Analytical Report

Analytica Group, LLC - Thornton

Workorder (SDG): A1407461

Project: KWF Baseline Monitoring 2014

Client: Kenai Watershed Forum

Client Project Number: None

Tests Run at: Analytica Environmental Laboratories - Thornton, Colorado

Workorder (SDG): A1407461

Project: KWF Baseline Monitoring 2014

Project Number:

Prep Batch: T140804020

QUALITY CONTROL REPORT

LCS REPORT

Analysis: SM4500-PE - Total Phos

MB: T140804020-MB

Prep Date: 8/5/2014

MB Anal. Date: 8/5/2014 2:44:00PM

Units: mg/L

LCS Anal. Date: 8/5/2014 2:44:00PM

Matrix: Aqueous

| <u>Analyte Name</u> | <u>SampResult</u> | <u>LCSRes.</u> | <u>SPLev</u> | <u>Recov.</u> | <u>Recov Lim</u> | <u>RPDLim</u> | <u>Flag</u> |
|-----------------------------|-------------------|----------------|--------------|---------------|------------------|---------------|-------------|
| Phosphorus, Total and Ortho | ND | 0.496 | 0.500 | 99.2 | 80 - 120 | | |

FOOTNOTES TO QC REPORT

Note 1: Results are shown to three significant figures to avoid rounding errors in calculations.

Note 2: If the sample concentration is greater than 4 times the spike level, a recovery is not meaningful, and the result should be used as a replicate. In such cases the spike is not as high as expected random measurement variability of the sample result itself.

Note 3: For sample duplicates, if the result is less than the PQL, the duplicate RPD is not applicable. If the sample and duplicate results are not five times the PQL or greater, then the RPD is not expected to fall within the window shown and the comparison should be made on the basis of the absolute difference. Analytica uses the criterion that the absolute difference should be less than the PQL for water or less than 2XPQL for other matrices.

Note 4: For serial dilutions, if the result is less than the PQL, the duplicate RPD is not applicable. If the sample result is not 50 times the MDL or greater, then the fact that the RPD does not meet the 10% criterion has little significance. Otherwise it indicates that a matrix bias may exist at the analytical step.

Detailed Analytical Report

Analytica Group, LLC - Thornton

Workorder (SDG): A1407461

Project: KWF Baseline Monitoring 2014

Client: Kenai Watershed Forum

Client Project Number: None

SURROGATE RECOVERY SUMMARY REPORT

Detailed Analytical Report

Analytica Group, LLC - Thornton

Workorder (SDG): A1407461

Project: KWF Baseline Monitoring 2014

Client: Kenai Watershed Forum

Client Project Number: None

Test Method: 624 - Purgeable Organics by GC/MS - VOC

Lab Sample #: A1407461-05A

Dilution: 1

Analysis Date: 7/28/2014 2:47:00PM

Client Sample: Trip Blank

Batch Number: T140729001

Data File: 14072810.D

| <u>AnalyteName</u> | <u>SSRecov</u> | <u>LCL</u> | <u>UCL</u> | <u>SSFlag</u> | <u>Result Status</u> |
|-----------------------|----------------|------------|------------|---------------|----------------------|
| 1,2-Dichloroethane-d4 | 100 | 76 | 133 | | Complete |
| Dibromofluoromethane | 100 | 77 | 141 | | Complete |
| p-Bromofluorobenzene | 98 | 80 | 120 | | Complete |
| Toluene D-8 | 100 | 81 | 129 | | Complete |

Lab Sample #: A1407461-01D

Dilution: 1

Analysis Date: 7/28/2014 4:23:00PM

Client Sample: RM 40 - Bing's Landing

Batch Number: T140729001

Data File: 14072813.D

| <u>AnalyteName</u> | <u>SSRecov</u> | <u>LCL</u> | <u>UCL</u> | <u>SSFlag</u> | <u>Result Status</u> |
|-----------------------|----------------|------------|------------|---------------|----------------------|
| 1,2-Dichloroethane-d4 | 101 | 76 | 133 | | Complete |
| Dibromofluoromethane | 102 | 77 | 141 | | Complete |
| p-Bromofluorobenzene | 98 | 80 | 120 | | Complete |
| Toluene D-8 | 101 | 81 | 129 | | Complete |

Lab Sample #: A1407461-02D

Dilution: 1

Analysis Date: 7/28/2014 4:56:00PM

Client Sample: RM 43 - Upstream of Dow Island

Batch Number: T140729001

Data File: 14072814.D

| <u>AnalyteName</u> | <u>SSRecov</u> | <u>LCL</u> | <u>UCL</u> | <u>SSFlag</u> | <u>Result Status</u> |
|-----------------------|----------------|------------|------------|---------------|----------------------|
| 1,2-Dichloroethane-d4 | 100 | 76 | 133 | | Complete |
| Dibromofluoromethane | 102 | 77 | 141 | | Complete |
| p-Bromofluorobenzene | 98 | 80 | 120 | | Complete |
| Toluene D-8 | 100 | 81 | 129 | | Complete |

Lab Sample #: T140729001-MB

Dilution: 1

Analysis Date: 7/28/2014 1:11:00PM

Client Sample: MB

Batch Number: T140729001

Data File: 14072807.D

| <u>AnalyteName</u> | <u>SSRecov</u> | <u>LCL</u> | <u>UCL</u> | <u>SSFlag</u> | <u>Result Status</u> |
|-----------------------|----------------|------------|------------|---------------|----------------------|
| 1,2-Dichloroethane-d4 | 99 | 76 | 139 | | Complete |
| Dibromofluoromethane | 99 | 77 | 141 | | Complete |
| p-Bromofluorobenzene | 103 | 80 | 120 | | Complete |
| Toluene D-8 | 96 | 81 | 129 | | Complete |

Lab Sample #: T140729001-LCS

Dilution: 1

Analysis Date: 7/28/2014 11:34:00AM

Client Sample: LCS

Batch Number: T140729001

Data File: 14072804.D

| <u>AnalyteName</u> | <u>SSRecov</u> | <u>LCL</u> | <u>UCL</u> | <u>SSFlag</u> | <u>Result Status</u> |
|-----------------------|----------------|------------|------------|---------------|----------------------|
| 1,2-Dichloroethane-d4 | 100 | 76 | 139 | | Complete |
| Dibromofluoromethane | 101 | 77 | 141 | | Complete |
| p-Bromofluorobenzene | 100 | 80 | 120 | | Complete |
| Toluene D-8 | 99 | 81 | 129 | | Complete |

Lab Sample #: T140729001-LCSD

Dilution: 1

Analysis Date: 7/28/2014 12:06:00PM

Client Sample: LCSD

Batch Number: T140729001

Data File: 14072805.D

| <u>AnalyteName</u> | <u>SSRecov</u> | <u>LCL</u> | <u>UCL</u> | <u>SSFlag</u> | <u>Result Status</u> |
|--------------------|----------------|------------|------------|---------------|----------------------|
|--------------------|----------------|------------|------------|---------------|----------------------|

Detailed Analytical Report

Analytica Group, LLC - Thornton

Workorder (SDG): A1407461

Project: KWF Baseline Monitoring 2014

Client: Kenai Watershed Forum

Client Project Number: None

Test Method: 624 - Purgeable Organics by GC/MS - VOC

Lab Sample #: T140729001-LCSD Dilution: 1
Analysis Date: 7/28/2014 12:06:00PM Client Sample: **LCSD**
Batch Number: T140729001 Data File: 14072805.D

| <u>AnalyteName</u> | <u>SSRecov</u> | <u>LCL</u> | <u>UCL</u> | <u>SSFlag</u> | <u>Result Status</u> |
|-----------------------|----------------|------------|------------|---------------|----------------------|
| 1,2-Dichloroethane-d4 | 101 | 76 | 139 | | Complete |
| Dibromofluoromethane | 99 | 77 | 141 | | Complete |
| p-Bromofluorobenzene | 100 | 80 | 120 | | Complete |
| Toluene D-8 | 99 | 81 | 129 | | Complete |

Lab Sample #: A1407461-02D-MS Dilution: 5
Analysis Date: 7/28/2014 5:27:00PM Client Sample: **MS**
Batch Number: T140729001 Data File: 14072815.D

| <u>AnalyteName</u> | <u>SSRecov</u> | <u>LCL</u> | <u>UCL</u> | <u>SSFlag</u> | <u>Result Status</u> |
|-----------------------|----------------|------------|------------|---------------|----------------------|
| 1,2-Dichloroethane-d4 | 101 | 76 | 133 | | Complete |
| Dibromofluoromethane | 103 | 77 | 141 | | Complete |
| p-Bromofluorobenzene | 97 | 80 | 120 | | Complete |
| Toluene D-8 | 99 | 81 | 129 | | Complete |

Lab Sample #: A1407461-02D-MSD Dilution: 5
Analysis Date: 7/28/2014 5:59:00PM Client Sample: **MSD**
Batch Number: T140729001 Data File: 14072816.D

| <u>AnalyteName</u> | <u>SSRecov</u> | <u>LCL</u> | <u>UCL</u> | <u>SSFlag</u> | <u>Result Status</u> |
|-----------------------|----------------|------------|------------|---------------|----------------------|
| 1,2-Dichloroethane-d4 | 101 | 76 | 133 | | Complete |
| Dibromofluoromethane | 102 | 77 | 141 | | Complete |
| p-Bromofluorobenzene | 96 | 80 | 120 | | Complete |
| Toluene D-8 | 98 | 81 | 129 | | Complete |

Detailed Analytical Report

Analytica Group, LLC - Thornton

Workorder (SDG): A1407461

Project: KWF Baseline Monitoring 2014

Client: Kenai Watershed Forum

Client Project Number: None

QC BATCH ASSOCIATIONS - BY METHOD BLANK

Lab Project ID: 162,324 Lab Project Number: A1407461

Prep Date: 7/28/2014

Lab Method Blank Id: T140729001-MB

Prep Batch ID: T140729001

Method: 624 - Purgeable Organics by GC/MS - VOC

This Method blank and sample preparation batch are associated with the following samples, spikes, and duplicates:

| <u>SampleNum</u> | <u>ClientSampleName</u> | <u>DataFile</u> | <u>AnalysisDate</u> |
|------------------|--------------------------------|-----------------|----------------------|
| T140729001-LCS | LCS | 14072804.D | 7/28/2014 11:34:00AM |
| T140729001-LCSD | LCSD | 14072805.D | 7/28/2014 12:06:00PM |
| A1407461-05A | Trip Blank | 14072810.D | 7/28/2014 2:47:00PM |
| A1407461-01D | RM 40 - Bing's Landing | 14072813.D | 7/28/2014 4:23:00PM |
| A1407461-02D | RM 43 - Upstream of Dow Island | 14072814.D | 7/28/2014 4:56:00PM |
| A1407461-02D-MS | MS | 14072815.D | 7/28/2014 5:27:00PM |
| A1407461-02D-MSD | MSD | 14072816.D | 7/28/2014 5:59:00PM |

Prep Date: 7/31/2014

Lab Method Blank Id: T140731012-MB

Prep Batch ID: T140731012

Method: 200. 7 - Metals by ICP - Total/TR

This Method blank and sample preparation batch are associated with the following samples, spikes, and duplicates:

| <u>SampleNum</u> | <u>ClientSampleName</u> | <u>DataFile</u> | <u>AnalysisDate</u> |
|------------------|--------------------------------|-----------------|---------------------|
| A1407459-01B | Batch QC | 073114.csv | 7/31/2014 1:58:43PM |
| A1407461-01B | RM 40 - Bing's Landing | 073114.csv | 7/31/2014 2:48:09PM |
| A1407461-02B | RM 43 - Upstream of Dow Island | 073114.csv | 7/31/2014 2:50:46PM |
| A1407461-03B | RM 44 - Mouth of Kiley River | 073114.csv | 7/31/2014 2:53:24PM |
| A1407461-04B | RM 50 - Skilak Lake Outflow | 073114.csv | 7/31/2014 2:56:00PM |
| T140731012-LCS | LCS | 073114.csv | 7/31/2014 1:51:21PM |
| A1407459-01B-DUP | DUP | 073114.csv | 7/31/2014 2:01:28PM |
| A1407459-01B-MS | MS | 073114.csv | 7/31/2014 2:06:45PM |
| A1407459-01B-MSD | MSD | 073114.csv | 7/31/2014 2:09:27PM |

Detailed Analytical Report

Analytica Group, LLC - Thornton

Workorder (SDG): A1407461

Project: KWF Baseline Monitoring 2014

Client: Kenai Watershed Forum

Client Project Number: None

QC BATCH ASSOCIATIONS - BY METHOD BLANK

Lab Project ID: 162,324 Lab Project Number: A1407461

Prep Date: 7/31/2014

Lab Method Blank Id: A140801001-MB

Prep Batch ID: A140801001

Method: SM4500-NO3E - Nitrogen (Nitrate), Cadmium Reduction Method -

This Method blank and sample preparation batch are associated with the following samples, spikes, and duplicates:

| <u>SampleNum</u> | <u>ClientSampleName</u> | <u>DataFile</u> | <u>AnalysisDate</u> |
|------------------|--------------------------------|-----------------|----------------------|
| A1407460-03A | Batch QC | | 7/31/2014 12:25:00PM |
| A1407461-01A | RM 40 - Bing's Landing | | 7/31/2014 12:25:00PM |
| A1407461-02A | RM 43 - Upstream of Dow Island | | 7/31/2014 12:25:00PM |
| A1407461-03A | RM 44 - Mouth of Kiley River | | 7/31/2014 12:25:00PM |
| A140801001-LCS | LCS | | 7/31/2014 12:25:00PM |
| A1407460-03A-DUP | DUP | | 7/31/2014 12:25:00PM |
| A1407460-03A-MS | MS | | 7/31/2014 12:25:00PM |

Prep Date: 8/5/2014

Lab Method Blank Id: T140804020-MB

Prep Batch ID: T140804020

Method: SM4500-PE - Total Phos

This Method blank and sample preparation batch are associated with the following samples, spikes, and duplicates:

| <u>SampleNum</u> | <u>ClientSampleName</u> | <u>DataFile</u> | <u>AnalysisDate</u> |
|------------------|--------------------------------|-----------------|---------------------|
| A1407460-01C | Batch QC | | 8/5/2014 2:44:00PM |
| A1407461-01C | RM 40 - Bing's Landing | | 8/5/2014 2:44:00PM |
| A1407461-02C | RM 43 - Upstream of Dow Island | | 8/5/2014 2:44:00PM |
| A1407461-03C | RM 44 - Mouth of Kiley River | | 8/5/2014 2:44:00PM |
| A1407461-04C | RM 50 - Skilak Lake Outflow | | 8/5/2014 2:44:00PM |
| T140804020-LCS | LCS | | 8/5/2014 2:44:00PM |
| A1407460-01C-DUP | DUP | | 8/5/2014 2:44:00PM |
| A1407460-01C-MS | MS | | 8/5/2014 2:44:00PM |
| A1407460-01C-MSD | MSD | | 8/5/2014 2:44:00PM |

Detailed Analytical Report

Analytica Group, LLC - Thornton

Workorder (SDG): A1407461

Project: KWF Baseline Monitoring 2014

Client: Kenai Watershed Forum

Client Project Number: None

QC BATCH ASSOCIATIONS - BY METHOD BLANK

Lab Project ID: 162,324 **Lab Project Number:** A1407461

Prep Date: 8/4/2014

Lab Method Blank Id: A140805010-MB

Prep Batch ID: A140805010

Method: SM4500-NO3E - Nitrogen (Nitrate), Cadmium Reduction Method -

This Method blank and sample preparation batch are associated with the following samples, spikes, and duplicates:

| <u>SampleNum</u> | <u>ClientSampleName</u> | <u>DataFile</u> | <u>AnalysisDate</u> |
|------------------|-----------------------------|-----------------|---------------------|
| A1407461-04A | RM 50 - Skilak Lake Outflow | | 8/4/2014 11:45:00AM |
| A140805010-LCS | LCS | | 8/4/2014 11:45:00AM |
| A1407461-04A-DUP | DUP | | 8/4/2014 11:45:00AM |
| A1407461-04A-MS | MS | | 8/4/2014 11:45:00AM |

Detailed Analytical Report

Analytica Group, LLC - Thornton

Workorder (SDG): A1407461

Project: KWF Baseline Monitoring 2014

Client: Kenai Watershed Forum

Client Project Number: None

DATA FLAGS AND DEFINITIONS

The PQL is the Method Quantitation Limit as defined by USACE.

Reporting Limit: Limit below which results are shown as "ND". This may be the PQL, MDL, or a value between. See the report conventions below.

Result Field:

ND = Not Detected at or above the Reporting Limit

NA = Analyte not applicable (see Case Narrative for discussion)

Qualifier Fields:

LOW = Recovery is below Lower Control Limit

HIGH = Recovery, RPD, or other parameter is above Upper Control Limit

E = Reported concentration is above the instrument calibration upper range

Organic Analysis Flags:

B = Analyte was detected in the laboratory method blank

J = Analyte was detected above MDL or Reporting Limit but below the Quant Limit (PQL)

Inorganic Analysis Flags:

J = Analyte was detected above the Reporting Limit but below the Quant Limit (PQL)

W = Post digestion spike did not meet criteria

S = Reported value determined by the Method of Standard Additions (MSA)

Several ways of defining the limit of detection and quantitation are prevalent in the laboratory industry and may appear in Analytica reports. These include the following:

MRL = "minimum reporting level", from the EPA Safe Drinking Water program (SDW)

PQL = "practical quantitation limit", from SW-846

EQL = "estimated quantitation limit", from SW-846

LOQ = "limit of quantitation", from a number of authoritative sources

In Analytica's work, all of these terms have the same meaning, equivalent to the EPA definition of the MRL. This reporting level is supported by a satisfactory calibration data point which is at that level or lower, and also is supported by a method detection limit (MDL) determined by the procedure in 40CFR. The MDL is lower than the MRL and represents an estimate of the level where positive detections have a 99% probability of being real, but where quantitation accuracy is unknown.

The MRL as defined by Analytica is the lowest demonstrated point of known quantitation accuracy.

The MRL should not be confused with the MCL, which is the EPA-defined "maximum contaminant level" allowed for certain regulated targets under specific regulations, such as the National Primary Drinking Water Regulations. Normally, the MRL is set at a level which is much lower than the MCL in order to ensure that levels are well below those limits. Not all target analytes have MCL levels established.

Other Flags may be applied. See Case Narrative for Description

Detailed Analytical Report

Analytica Group, LLC - Thornton

Workorder (SDG): A1407461

Project: KWF Baseline Monitoring 2014

Client: Kenai Watershed Forum

Client Project Number: None

REPORTING CONVENTIONS FOR THIS REPORT

A1407461

| <u>TestPkgName</u> | <u>Basis</u> | <u># Sig Figs</u> | <u>Reporting Limit</u> |
|--------------------------------------------|--------------|-------------------|---------------------------------|
| 200.7/200.7 (Aqueous) - Total/TR | As Received | 3 | Report to PQL |
| 4500-NO3E (Aqueous) - Nitrate+Nitrite pres | As Received | 3 | Report to PQL |
| 4500-PE/4500-PB (Aqueous) - Total Phos | As Received | 2 | Report to PQL |
| 624 (Aqueous) - VOC | As Received | 2 | Report to MDL, J qual below PQL |



Analytica Chain of Custody Form

Page ____ of ____

121889 Pennsylvania St.
Thornton, CO 80241
(303) 469-8868
4307 Arctic Blvd.
Anchorage, AK 99503
(907) 258-2155
(907) 258-6634 fax
475 Hall Street
Fairbanks, AK 99701
(907) 456-3116
(907) 456-3125 fax
1203 W. Parks Highway
Wasilla, Alaska 99554
(907) 373-5440

Chain of Custody No: _____

TEAM ID: DNR and DEC

Section To be Completed by Analytica

Project Name: Kenai River Baseline Project - July 2014

Quote ID No: A14040019

LGN: A1407461

Client Name & Address:
Kenai Watershed Forum
44129 Sterling Hwy
Soldotna, AK 99669

Contact Person: Brandon Borremann

Phone No: (907) 260-5449

Fax No: (907) 260-5412

E-mail: branden@kenaiwatershed.org

Results Due Date: _____

Special Instructions/Comments:
Bing was used by bubble w 4mm m size

P.O. or Contract

Turnaround Time for Results (TAT)

Standard Expedited (< 10 days, prior authorization required)
(please specify for fair follow, add'l charges may apply)

Lab Bottle Order No:

Client Sample Identification / Location

Date Sampled

Time Sampled

Matrix
(S-DW-WW-Other)

No. of Containers

Nitrate SM4500-NO3E
Lot #: _____
Pres: H2SO4
200.7 Metals by ICP-Total TR

Lot #: _____
Pres: HNO3
200.8 Dissolved Metals

Lot #: _____
Pres: HNO3
Total Phos SM4500

Lot #: _____
Pres: H2SO4
BTX

Lot #: _____
Pres: HCl

Lot #: _____
Pres: _____

Lot #: _____
Pres: _____

Field Preserved

Field Filtered

MS/MSD ?

Requested Analysis/Method

RM 40- Bing's Landing
RM 43- Upstream of Dow Island
RM 44- Mouth of Kiley River
RM 50- Skilak Lake Outflow
Trip Blank

7-22-14
7-22-14
7-22-14
7-22-14

11:11
10:18
09:26
08:31

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Date

Time

Received by:

Date

Time

Chain-of-Custody Seal?

Initiated By:

Temp/Loc:

Thermo ID#:

Shipping Via:

THO

ANC

JUN

FBKS

11/4

6-6

83135

Cap pickup

recd on ice

updated April 6, 2005