ARS Aleut Analytical, LLC
3710 Woodland Dr. Suite 900
Anchorage, AK 99517
Phone: 907-258-2155
Fax: 907-258-6634

5/16/2017

Kenai Watershed Forum
44129 Sterling Highway
Soldotna, AK 99669
Attn: Jeff Sires

Work Order #: A1704314
Date: 5/16/2017
Work ID: KWF Baseline Monitoring APR 2017
Date Received: 4/25/2017
Proj #: KWF Baseline Monitoring APR 2017

Sample Identification

Lab Sample Number	Client Description	Lab Sample Number	Client Description
A1704314-01	RM 6.5 - Cunningham Park	A1704314-02	RM 10 - Beaver Creek
A1704314-03	RM 12.5 - Pillars	A1704314-04	RM 18 - Poachers Cove

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,

Jerry Baker
Project Manager

"The Science of Analysis, The Art of Service"

Case Narrative

ARS Aleut Analytical, LLC

Work Order: A1704314

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.

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

SAMPLE RECEIPT:

Four (4) samples were received 4/25/2017 10:58 AM at ARS Aleut Analytical – Anchorage. The samples were received in good condition and in order per chain of custody.

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.

The following is a subcontracted test and has been represented to us as having met criteria:

Test Method: 200.7 - Metals by ICP - 200.7 metals – Aqueous
Test Method: 200.8 - Metals by ICP/MS - Dissolved 200.8 Metals - Aqueous
Test Method: SM4500-NO3E - Nitrogen (Nitrate), Cadmium Reduction Method - nitrate+nitrite pres f - Aqueous
Test Method: SM4500-PE - Total Phos HACH 8190 - Aqueous

Detailed Analytical Report

ARS Aleut Analytical, LLC

Workorder (SDG): A1704314

Project: **KWF Baseline Monitoring APR 2017**

Client: **Kenai Watershed Forum**

Client Project Number: **KWF Baseline Monitoring APR 2017**

Report Section: Client Sample Report

Client Sample Name: **RM 6.5 - Cunningham Park**

Matrix: Aqueous Collection Date: 4/25/2017 7:30:00AM

The following test was conducted by: Eurofins Eaton Analytical (EEA)

Lab Sample Number: A1704314-01D
Prep Date:
Analytical Method ID: 200.8 - Metals by ICP/MS - Dissolved 200.8 Metals
Prep Method ID:
Prep Batch Number: R17051615-2596
Report Basis: As Received
Sample prep wt./vol:
pH on receipt: < 2.00

Analysis Date: 5/5/2017 1:04:00PM
Instrument:
File Name:
Dilution Factor: 1
Analyst Initials: NJB
Prep Extract Vol: ml

Analyte	CASNo	Result	Flags	Units	PQL	MDL	run #:
Arsenic	7440-38-2	**1.7**		ug/L	1.0	1.0	1
Cadmium	7440-43-9	**ND**		ug/L	1.0	1.0	
Chromium	7440-47-3	**1.5**		ug/L	0.90	0.90	
Copper	7440-50-8	**6.6**		ug/L	1.0	1.0	
Lead	7439-92-1	**ND**		ug/L	1.0	1.0	
Zinc	7440-66-6	**160**		ug/L	5.0	5.0	

The following test was conducted by: Eurofins Eaton Analytical (EEA)

Lab Sample Number: A1704314-01B
Prep Date: 05-04-2017 16:05
Analytical Method ID: 200. 7 - Metals by ICP - 200.7 metals
Prep Method ID:
Prep Batch Number: R17051614-2579
Report Basis: As Received
Sample prep wt./vol:

Analysis Date: 5/5/2017 4:33:00PM
Instrument:
File Name:
Dilution Factor: 1
Analyst Initials: KW
Prep Extract Vol: ml

Analyte	CASNo	Result	Flags	Units	PQL	MDL	run #:
Calcium	7440-70-2	**25**		mg/L	0.10	0.10	1
Iron	7439-89-6	**47**		mg/L	0.020	0.020	
Magnesium	7439-96-4	**36**		mg/L	0.10	0.10	

The following test was conducted by: ARS Aleut Analytical,LLC

Lab Sample Number: A1704314-01C
Prep Date: 05-01-2017 15:05
Analytical Method ID: SM4500-PE - Total Phos HACH 8190
Prep Method ID: 4500-PE
Prep Batch Number: F170502007
Report Basis: As Received
Sample prep wt./vol: 5.00 ml
pH on receipt: < 2.00

Analysis Date: 5/1/2017 3:40:00PM
Instrument: Spectrophoto
File Name:
Dilution Factor: 1
Analyst Initials: SC
Prep Extract Vol: 5.00 ml

Analyte	CASNo	Result	Flags	Units	PQL	MDL	run #:
Phosphorous, Total		**0.21**		mg/L	0.10	0.025	1

The following test was conducted by: ARS Aleut Analytical,LLC

Detailed Analytical Report

ARS Aleut Analytical, LLC

Workorder (SDG): A1704314

Project: **KWF Baseline Monitoring APR 2017**

Client: **Kenai Watershed Forum**

Client Project Number: **KWF Baseline Monitoring APR 2017**

Report Section: **Client Sample Report**

Client Sample Name: **RM 6.5 - Cunningham Park**

Matrix: Aqueous

Collection Date: 4/25/2017 7:30:00AM

Lab Sample Number:	A1704314-01A	Analysis Date:	5/4/2017 4:30:00PM
Prep Date:	05-04-2017 16:05	Instrument:	Spectrophoto
Analytical Method ID:	SM4500-NO3E - Nitrogen (Nitrate), Cadmium Reduction Method - I	File Name:	
Prep Method ID:		Dilution Factor:	1
Prep Batch Number:	F170504008		
Report Basis:	As Received	Analyst Initials:	SC
Sample prep wt./vol:	25.00 ml	Prep Extract Vol:	25.00 ml
pH on receipt:	< 2.00		

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

Workorder (SDG): A1704314

Project: **KWF Baseline Monitoring APR 2017**

Client: **Kenai Watershed Forum**

Client Project Number: **KWF Baseline Monitoring APR 2017**

Report Section: Client Sample Report

Client Sample Name: **RM 10 - Beaver Creek**

Matrix: Aqueous Collection Date: 4/25/2017 8:40:00AM

The following test was conducted by: Eurofins Eaton Analytical (EEA)

Lab Sample Number: A1704314-02D Analysis Date: 5/5/2017 1:15:00PM
Prep Date: Instrument:
Analytical Method ID: 200.8 - Metals by ICP/MS - Dissolved 200.8 Metals File Name:
Prep Method ID: Dilution Factor: 1
Prep Batch Number: R17051615-2596
Report Basis: As Received Analyst Initials: NJB
Sample prep wt./vol: Prep Extract Vol: ml
pH on receipt: < 2.00

Analyte	CASNo	Result	Flags	Units	PQL	MDL	run #:
Arsenic	7440-38-2	**4.5**		ug/L	1.0	1.0	1
Cadmium	7440-43-9	**ND**		ug/L	1.0	1.0	
Chromium	7440-47-3	**ND**		ug/L	0.90	0.90	
Copper	7440-50-8	**1.1**		ug/L	1.0	1.0	
Lead	7439-92-1	**ND**		ug/L	1.0	1.0	
Zinc	7440-66-6	**89**		ug/L	5.0	5.0	

The following test was conducted by: Eurofins Eaton Analytical (EEA)

Lab Sample Number: A1704314-02B Analysis Date: 5/5/2017 4:35:00PM
Prep Date: 05-04-2017 16:05 Instrument:
Analytical Method ID: 200. 7 - Metals by ICP - 200.7 metals File Name:
Prep Method ID: Dilution Factor: 1
Prep Batch Number: R17051614-2579
Report Basis: As Received Analyst Initials: KW
Sample prep wt./vol: Prep Extract Vol: ml

Analyte	CASNo	Result	Flags	Units	PQL	MDL	run #:
Calcium	7440-70-2	**12**		mg/L	0.10	0.10	1
Iron	7439-89-6	**3.3**		mg/L	0.020	0.020	
Magnesium	7439-96-4	**3.1**		mg/L	0.10	0.10	

The following test was conducted by: ARS Aleut Analytical,LLC

Lab Sample Number: A1704314-02C Analysis Date: 5/1/2017 3:40:00PM
Prep Date: 05-01-2017 15:05 Instrument: Spectrophoto
Analytical Method ID: SM4500-PE - Total Phos HACH 8190 File Name:
Prep Method ID: 4500-PE Dilution Factor: 1
Prep Batch Number: F170502007
Report Basis: As Received Analyst Initials: SC
Sample prep wt./vol: 5.00 ml Prep Extract Vol: 5.00 ml
pH on receipt: < 2.00

Analyte	CASNo	Result	Flags	Units	PQL	MDL	run #:
Phosphorous, Total		**ND**		mg/L	0.10	0.025	1

The following test was conducted by: ARS Aleut Analytical,LLC

Detailed Analytical Report

ARS Aleut Analytical, LLC

Workorder (SDG): A1704314

Project: **KWF Baseline Monitoring APR 2017**

Client: **Kenai Watershed Forum**

Client Project Number: **KWF Baseline Monitoring APR 2017**

Report Section: **Client Sample Report**

Client Sample Name: **RM 10 - Beaver Creek**

Matrix: Aqueous

Collection Date: 4/25/2017 8:40:00AM

Lab Sample Number: A1704314-02A

Prep Date: 05-04-2017 16:05

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

Prep Method ID:

Prep Batch Number: F170504008

Report Basis: As Received

Sample prep wt./vol: 25.00 ml

pH on receipt: < 2.00

Analysis Date: 5/4/2017 4:30:00PM

Instrument: Spectrophoto

File Name:

Dilution Factor: 1

Analyst Initials: SC

Prep Extract Vol: 25.00 ml

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

Workorder (SDG): A1704314

Project: **KWF Baseline Monitoring APR 2017**

Client: **Kenai Watershed Forum**

Client Project Number: **KWF Baseline Monitoring APR 2017**

Report Section: Client Sample Report

Client Sample Name: **RM 12.5 - Pillars**

Matrix: Aqueous Collection Date: 4/25/2017 9:20:00AM

The following test was conducted by: Eurofins Eaton Analytical (EEA)

Lab Sample Number: A1704314-03D Analysis Date: 5/5/2017 1:19:00PM
Prep Date: Instrument:
Analytical Method ID: 200.8 - Metals by ICP/MS - Dissolved 200.8 Metals File Name:
Prep Method ID: Dilution Factor: 1
Prep Batch Number: R17051615-2596
Report Basis: As Received Analyst Initials: NJB
Sample prep wt./vol: Prep Extract Vol: ml
pH on receipt: < 2.00

Analyte	CASNo	Result	Flags	Units	PQL	MDL	run #:
Arsenic	7440-38-2	**2.1**		ug/L	1.0	1.0	1
Cadmium	7440-43-9	**ND**		ug/L	1.0	1.0	
Chromium	7440-47-3	**ND**		ug/L	0.90	0.90	
Copper	7440-50-8	**ND**		ug/L	1.0	1.0	
Lead	7439-92-1	**ND**		ug/L	1.0	1.0	
Zinc	7440-66-6	**ND**		ug/L	5.0	5.0	

The following test was conducted by: Eurofins Eaton Analytical (EEA)

Lab Sample Number: A1704314-03B Analysis Date: 5/5/2017 4:38:00PM
Prep Date: 05-04-2017 16:05 Instrument:
Analytical Method ID: 200. 7 - Metals by ICP - 200.7 metals File Name:
Prep Method ID: Dilution Factor: 1
Prep Batch Number: R17051614-2579
Report Basis: As Received Analyst Initials: KW
Sample prep wt./vol: Prep Extract Vol: ml

Analyte	CASNo	Result	Flags	Units	PQL	MDL	run #:
Calcium	7440-70-2	**11**		mg/L	0.10	0.10	1
Iron	7439-89-6	**0.60**		mg/L	0.020	0.020	
Magnesium	7439-96-4	**1.8**		mg/L	0.10	0.10	

The following test was conducted by: ARS Aleut Analytical,LLC

Lab Sample Number: A1704314-03C Analysis Date: 5/1/2017 3:40:00PM
Prep Date: 05-01-2017 15:05 Instrument: Spectrophoto
Analytical Method ID: SM4500-PE - Total Phos HACH 8190 File Name:
Prep Method ID: 4500-PE Dilution Factor: 1
Prep Batch Number: F170502007
Report Basis: As Received Analyst Initials: SC
Sample prep wt./vol: 5.00 ml Prep Extract Vol: 5.00 ml
pH on receipt: < 2.00

Analyte	CASNo	Result	Flags	Units	PQL	MDL	run #:
Phosphorous, Total		**ND**		mg/L	0.10	0.025	1

The following test was conducted by: ARS Aleut Analytical,LLC

Detailed Analytical Report

ARS Aleut Analytical, LLC

Workorder (SDG): A1704314

Project: **KWF Baseline Monitoring APR 2017**

Client: **Kenai Watershed Forum**

Client Project Number: **KWF Baseline Monitoring APR 2017**

Report Section: **Client Sample Report**

Client Sample Name: **RM 12.5 - Pillars**

Matrix: Aqueous

Collection Date: 4/25/2017 9:20:00AM

Lab Sample Number: A1704314-03A

Prep Date: 05-04-2017 16:05

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

Prep Method ID:

Prep Batch Number: F170504008

Report Basis: As Received

Sample prep wt./vol: 25.00 ml

pH on receipt: < 2.00

Analysis Date: 5/4/2017 4:30:00PM

Instrument: Spectrophoto

File Name:

Dilution Factor: 1

Analyst Initials: SC

Prep Extract Vol: 25.00 ml

Analyte	CASNo	Result	Flags	Units	PQL	MDL	run #:
Nitrate-Nitrite as Nitrogen		**0.138**		mg/L	0.10	0.015	1

Workorder (SDG): A1704314

Project: **KWF Baseline Monitoring APR 2017**

Client: **Kenai Watershed Forum**

Client Project Number: **KWF Baseline Monitoring APR 2017**

Report Section: **Client Sample Report**

Client Sample Name: **RM 18 - Poachers Cove**

Matrix: Aqueous Collection Date: 4/25/2017 10:15:00AM

The following test was conducted by: Eurofins Eaton Analytical (EEA)

Lab Sample Number: A1704314-04D
Prep Date:
Analytical Method ID: 200.8 - Metals by ICP/MS - Dissolved 200.8 Metals
Prep Method ID:
Prep Batch Number: R17051615-2596
Report Basis: As Received
Sample prep wt./vol:
pH on receipt: < 2.00

Analysis Date: 5/5/2017 1:22:00PM
Instrument:
File Name:
Dilution Factor: 1
Analyst Initials: NJB
Prep Extract Vol: ml

Analyte	CASNo	Result	Flags	Units	PQL	MDL	run #:
Arsenic	7440-38-2	**1.7**		ug/L	1.0	1.0	1
Cadmium	7440-43-9	**ND**		ug/L	1.0	1.0	
Chromium	7440-47-3	**ND**		ug/L	0.90	0.90	
Copper	7440-50-8	**ND**		ug/L	1.0	1.0	
Lead	7439-92-1	**ND**		ug/L	1.0	1.0	
Zinc	7440-66-6	**35**		ug/L	5.0	5.0	

The following test was conducted by: Eurofins Eaton Analytical (EEA)

Lab Sample Number: A1704314-04B
Prep Date: 05-04-2017 16:05
Analytical Method ID: 200. 7 - Metals by ICP - 200.7 metals
Prep Method ID:
Prep Batch Number: R17051614-2579
Report Basis: As Received
Sample prep wt./vol:

Analysis Date: 5/5/2017 4:40:00PM
Instrument:
File Name:
Dilution Factor: 1
Analyst Initials: KW
Prep Extract Vol: ml

Analyte	CASNo	Result	Flags	Units	PQL	MDL	run #:
Calcium	7440-70-2	**11**		mg/L	0.10	0.10	1
Iron	7439-89-6	**0.61**		mg/L	0.020	0.020	
Magnesium	7439-96-4	**1.8**		mg/L	0.10	0.10	

The following test was conducted by: ARS Aleut Analytical,LLC

Lab Sample Number: A1704314-04C
Prep Date: 05-01-2017 15:05
Analytical Method ID: SM4500-PE - Total Phos HACH 8190
Prep Method ID: 4500-PE
Prep Batch Number: F170502007
Report Basis: As Received
Sample prep wt./vol: 5.00 ml
pH on receipt: < 2.00

Analysis Date: 5/1/2017 3:40:00PM
Instrument: Spectrophoto
File Name:
Dilution Factor: 1
Analyst Initials: SC
Prep Extract Vol: 5.00 ml

Analyte	CASNo	Result	Flags	Units	PQL	MDL	run #:
Phosphorous, Total		**ND**		mg/L	0.10	0.025	1

The following test was conducted by: ARS Aleut Analytical,LLC

Detailed Analytical Report

ARS Aleut Analytical, LLC

Workorder (SDG): A1704314

Project: **KWF Baseline Monitoring APR 2017**

Client: **Kenai Watershed Forum**

Client Project Number: **KWF Baseline Monitoring APR 2017**

Report Section: **Client Sample Report**

Client Sample Name: **RM 18 - Poachers Cove**

Matrix: Aqueous

Collection Date: 4/25/2017 10:15:00AM

Lab Sample Number:	A1704314-04A	Analysis Date:	5/8/2017 2:00:00PM
Prep Date:	05-08-2017 14:05	Instrument:	Spectrophoto
Analytical Method ID:	SM4500-NO3E - Nitrogen (Nitrate), Cadmium Reduction Method - I	File Name:	
Prep Method ID:		Dilution Factor:	1
Prep Batch Number:	F170508002		
Report Basis:	As Received	Analyst Initials:	SC
Sample prep wt./vol:	25.00 ml	Prep Extract Vol:	25.00 ml
pH on receipt:	< 2.00		

Analyte	CASNo	Result	Flags	Units	PQL	MDL	run #:
Nitrate-Nitrite as Nitrogen		**0.159**		mg/L	0.10	0.015	1

Workorder (SDG): A1704314

Project: **KWF Baseline Monitoring APR 2017**

Client: **Kenai Watershed Forum**

Client Project Number: **KWF Baseline Monitoring APR 2017**

Report Section: Method Blank Report

Client Sample Name: **MB**

Matrix: Aqueous Collection Date: 5/1/2017 3:40:00PM

The following test was conducted by: ARS Aleut Analytical,LLC

Lab Sample Number:	F170502007-MB	Analysis Date:	5/1/2017 3:40:00PM
Prep Date:	05-01-2017 15:05	Instrument:	Spectrophoto
Analytical Method ID:	SM4500-PE - Total Phos HACH 8190	File Name:	
Prep Method ID:	4500-PE	Dilution Factor:	1
Prep Batch Number:	F170502007		
Report Basis:	As Received	Analyst Initials:	SC
Sample prep wt./vol:	5.00 ml	Prep Extract Vol:	5.00 ml
pH on receipt:	0.00		

Analyte	CASNo	Result	Flags	Units	PQL	MDL	run #:
Phosphorous, Total		ND		mg/L	0.10	0.025	1

The following test was conducted by: ARS Aleut Analytical,LLC

Lab Sample Number:	F170504008-MB	Analysis Date:	5/4/2017 4:30:00PM
Prep Date:	05-04-2017 16:05	Instrument:	Spectrophoto
Analytical Method ID:	SM4500-NO3E - Nitrogen (Nitrate), Cadmium Reduction Method - I	File Name:	
Prep Method ID:		Dilution Factor:	1
Prep Batch Number:	F170504008		
Report Basis:	As Received	Analyst Initials:	SC
Sample prep wt./vol:	25.00 ml	Prep Extract Vol:	25.00 ml
pH on receipt:	0.00		

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

Lab Sample Number:	F170508002-MB	Analysis Date:	5/8/2017 2:00:00PM
Prep Date:	05-08-2017 14:05	Instrument:	Spectrophoto
Analytical Method ID:	SM4500-NO3E - Nitrogen (Nitrate), Cadmium Reduction Method - I	File Name:	
Prep Method ID:		Dilution Factor:	1
Prep Batch Number:	F170508002		
Report Basis:	As Received	Analyst Initials:	SC
Sample prep wt./vol:	25.00 ml	Prep Extract Vol:	25.00 ml
pH on receipt:	0.00		

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

Workorder (SDG): A1704314

Project: **KWF Baseline Monitoring APR 2017**

Client: **Kenai Watershed Forum**

Client Project Number: **KWF Baseline Monitoring APR 2017**

Tests Run at:

Workorder (SDG): A1704314

Project: KWF Baseline Monitoring APR 2017

Project Number:

QUALITY CONTROL REPORT

Prep Batch: **F170504008**

LCS REPORT

Analysis: SM4500-NO3E - Nitrogen (Nitrate), Cadmium Reduction Method - MB: F170504008-MB

Prep Date: 5/4/2017

MB Anal. Date: 5/4/2017 4:30:00PM Units: mg/L

LCS Anal. Date: 5/4/2017 4:30:00PM Matrix: Aqueous

Analyte Name	SampResult	LCSRes.	SPLev	Recov.	Recov Lim	RPDLim	Flag
Nitrate-Nitrite as Nitrogen	ND	0.303	0.328	92.4	90 - 110		

Prep Batch: **F170508002**

LCS REPORT

Analysis: SM4500-NO3E - Nitrogen (Nitrate), Cadmium Reduction Method - MB: F170508002-MB

Prep Date: 5/8/2017

MB Anal. Date: 5/8/2017 2:00:00PM Units: mg/L

LCS Anal. Date: 5/8/2017 2:00:00PM Matrix: Aqueous

Analyte Name	SampResult	LCSRes.	SPLev	Recov.	Recov Lim	RPDLim	Flag
Nitrate-Nitrite as Nitrogen	ND	0.311	0.328	94.8	90 - 110		

Prep Batch: **F170502007**

SAMPLE DUPLICATE REPORT

Analysis: SM4500-PE - Total Phos HACH 8190 Base Sample: A1704314-01C

Prep Date: 5/1/2017

Samp. Anal. Date: 5/1/2017 3:40:00PM Units: mg/L

DUP Anal. Date: 5/1/2017 3:40:00PM Matrix: Aqueous

Analyte Name	SampResult	DUPRes.	RPD	RPDLim	Flag
Phosphorous, Total	0.205	ND	0.0	0	

LCS REPORT

Analysis: SM4500-PE - Total Phos HACH 8190 MB: F170502007-MB

Prep Date: 5/1/2017

MB Anal. Date: 5/1/2017 3:40:00PM Units: mg/L

LCS Anal. Date: 5/1/2017 3:40:00PM Matrix: Aqueous

Analyte Name	SampResult	LCSRes.	SPLev	Recov.	Recov Lim	RPDLim	Flag

Workorder (SDG): A1704314

Project: **KWF Baseline Monitoring APR 2017**

Client: **Kenai Watershed Forum**

Client Project Number: **KWF Baseline Monitoring APR 2017**

Tests Run at:

Workorder (SDG): A1704314

Project: KWF Baseline Monitoring APR 2017

Project Number:

QUALITY CONTROL REPORT

Prep Batch: **F170502007**

LCS REPORT

Analysis: SM4500-PE - Total Phos HACH 8190 MB: F170502007-MB

Prep Date: 5/1/2017

MB Anal. Date: 5/1/2017 3:40:00PM Units: mg/L

LCS Anal. Date: 5/1/2017 3:40:00PM Matrix: Aqueous

Analyte Name	SampResult	LCSRes.	SPLev	Recov.	Recov Lim	RPDLim	Flag
Phosphorous, Total	ND	0.284	0.320	88.9	90 - 110		low

MS/MSD REPORT

Analysis: SM4500-PE - Total Phos HACH 8190 Parent: A1704314-01C

Prep Date: 5/1/2017

Samp. Anal. Date: 5/1/2017 3:40:00PM Units: mg/L

MS Anal. Date: 5/1/2017 3:40:00PM MSD Anal. Date: 5/1/2017 3:40:00PM Matrix: Aqueous

Analyte Name	SampResult	MSRes.	MSDRes	SPLev	SPDLev	Recov.	MSD Rec.	RPD	Recov Lim	RPDLim		Flag	
Phosphorous, Total	0.205	0.649	0.450	0.0646	0.194	687.6	126.5	36.2	80 - 120	0	*highMS*	*highMSD*	*RPD*

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 signifcance. Otherwise it indicates that a matrix bias may exist at the analytical step.

Workorder (SDG): A1704314

Project: **KWF Baseline Monitoring APR 2017**

Client: **Kenai Watershed Forum**

Client Project Number: **KWF Baseline Monitoring APR 2017**

Workorder (SDG): A1704314

Project: **KWF Baseline Monitoring APR 2017**

Client: **Kenai Watershed Forum**

Client Project Number: **KWF Baseline Monitoring APR 2017**

QC BATCH ASSOCIATIONS - BY METHOD BLANK

Lab Project ID: **186,812** **Lab Project Number:** **A1704314**

Prep Date: 5/1/2017

Lab Method Blank Id: F170502007-MB
Prep Batch ID: F170502007
Method: SM4500-PE - Total Phos HACH 8190

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

SampleNum	ClientSampleName	DataFile	AnalysisDate
A1704314-01C	RM 6.5 - Cunningham Park		5/1/2017 3:40:00PM
A1704314-02C	RM 10 - Beaver Creek		5/1/2017 3:40:00PM
A1704314-03C	RM 12.5 - Pillars		5/1/2017 3:40:00PM
A1704314-04C	RM 18 - Poachers Cove		5/1/2017 3:40:00PM
F170502007-LCS	LCS		5/1/2017 3:40:00PM
A1704314-01C-DUP	DUP		5/1/2017 3:40:00PM
A1704314-01C-MS	MS		5/1/2017 3:40:00PM
A1704314-01C-MSD	MSD		5/1/2017 3:40:00PM

Prep Date: 5/4/2017

Lab Method Blank Id: F170504008-MB
Prep Batch ID: F170504008
Method: SM4500-NO3E - Nitrogen (Nitrate), Cadmium Reduction Method -

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

SampleNum	ClientSampleName	DataFile	AnalysisDate
A1704277-01A	Batch QC		5/4/2017 4:30:00PM
A1704314-01A	RM 6.5 - Cunningham Park		5/4/2017 4:30:00PM
A1704314-02A	RM 10 - Beaver Creek		5/4/2017 4:30:00PM
A1704314-03A	RM 12.5 - Pillars		5/4/2017 4:30:00PM
F170504008-LCS	LCS		5/4/2017 4:30:00PM
A1704277-01A-DUP	DUP		5/4/2017 4:30:00PM
A1704277-01A-MS	MS		5/4/2017 4:30:00PM

Workorder (SDG): A1704314

Project: **KWF Baseline Monitoring APR 2017**

Client: **Kenai Watershed Forum**

Client Project Number: **KWF Baseline Monitoring APR 2017**

QC BATCH ASSOCIATIONS - BY METHOD BLANK

Lab Project ID: **186,812** **Lab Project Number:** **A1704314**

Prep Date: 5/8/2017

Lab Method Blank Id: F170508002-MB

Prep Batch ID: F170508002

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

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

SampleNum	ClientSampleName	DataFile	AnalysisDate
A1704313-01A	Batch QC		5/8/2017 2:00:00PM
A1704314-04A	RM 18 - Poachers Cove		5/8/2017 2:00:00PM
F170508002-LCS	LCS		5/8/2017 2:00:00PM
A1704313-01A-DUP	DUP		5/8/2017 2:00:00PM
A1704313-01A-MS	MS		5/8/2017 2:00:00PM

Workorder (SDG): A1704314

Project: **KWF Baseline Monitoring APR 2017**

Client: **Kenai Watershed Forum**

Client Project Number: **KWF Baseline Monitoring APR 2017**

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

Workorder (SDG): A1704314

Project: **KWF Baseline Monitoring APR 2017**

Client: **Kenai Watershed Forum**

Client Project Number: **KWF Baseline Monitoring APR 2017**

REPORTING CONVENTIONS FOR THIS REPORT

A1704314

TestPkgName	Basis	# Sig Figs	Reporting Limit
200.7 (Aqueous) - 200.7 metals	As Received	2	Report to PQL
200.8 (Aqueous) - Dissolved 200.8 Metals	As Received	2	Report to PQL
4500-NO3E (Aqueous) - nitrate+nitrite pres f	As Received	3	Report to PQL
4500-PE/4500-PE (Aqueous) - Total Phos HACH 8190	As Received	2	Report to PQL

AAA Chain of Custody

Custody form MUST be signed

Please provide as much information as possible

ARS Aleut Analytical
formerly Analytica Group

Anchorage Laboratory
3710 Woodland Dr. Suite 900
Anchorage, AK 99517
907.258.2155
907.258.6634 fax

Mat-Su Service Center
701 East Parks Highway #203
Wasilla, AK 99654
907.373.5440

Fairbanks Laboratory
475 Hall Street
Fairbanks, AK 99701
907.456.3116
907.456.3125 fax

ARS Corporate Office
2609 North River Road
Port Allen, LA 70767
225.381.2991
225.381.2996 fax

Sampling Event ID:

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

Contact Person:
Phone No:
Fax No:
E-mail:

TEAM ID: KWF (USFWS)
Project Name: KWF Baseline Monitoring April 2017

Turnaround Time (TAT) for Results

☐ Standard ☐ **Expedited** (prior authorization required for < 10 days)
please specify due date below; additional charges may apply

Requested Date for Results:

Results to STATE: ☐ Yes ☐ No ☐ Routine ☐ Non-Routine

Special Instructions/Requirements:

Section To Be Completed by AAA

Quote Number:
LGN: A1704314
Account #: Check Credit

Invoice Contact Name & Address & Phone:

PO/Contract No.:

Kit Preparation/Shipping Charge:

Requested Analysis/Method

	Client Sample Identification (Name, Designation, Location, etc.)	Date Sampled	Time Sampled	Matrix (A Aqueous, DW-Drinking Water, WW-Waste Water, Soil/Solid, O Other)	No. of Containers	Nitrate -SM4500 NO3E Preservative Lot#	~~200.8~~ 200.7 Metals by ICP Preservative Lot#	200.8 Dissolved Metals Preservative Lot#	Total Phos SM4500 Preservative Lot#	Preservative Lot#	Preservative Lot#	Field Preserved	Field Filtered	Use for MS/MSD	Comments
1	RM 6.5 -Cunningham Park	4/25/17	7:30	A	4	x	x	x	x						
2	RM 10 -Beaver Creek	4/25/17	8:40	A	4	x	x	x	x						
3	~~RM 10.1 -Kenai River~~				4										
4	RM 12.5 -Pillars	4/25/17	9:20	A	4	x	x	x	x						
5	RM 18 -Poachers Cove	4/25/17	10:15	A	4	x	x	x	x						
6															
7															
8															
9															
10															

Relinquished by:	Date	Time	Received by:	Date	Time
Jack Hunter	4/25/17	10:58	Dan Schaad	4/25/17	1058
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by:	Date	Time
Name of Sampler: (printed)					

Section To Be Completed by AAA

Condition of Custody Seal: Intact Broken ~~Absent~~

Receiving location: ANC

Temperature on arrival: 39F °C
2-8 °C

Thermometer ID # _____ Measurement method: Temp Blank Other

Shipping method/Tracking number: Client