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ANALYTICAL REPORT

Eurofins TestAmerica, Pittsburgh
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RIDC Park
Pittsburgh, PA 15238
Tel: (412)963-7058

Laboratory Job ID: 180-94096-1
Client Project/Site: ALF_BS_20190813_1A

For:
Stantec Consulting Services Inc
27280 Haggerty Road
Suite C-11
Farmington Hills, Michigan 48331

Attn: Bradly Toth

Authorized for release by:
9/3/2019 3:38:54 PM

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

PA Lab ID: 02-00416

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Job ID: 180-94096-1

Laboratory: Eurofins TestAmerica, Pittsburgh

Narrative

Job Narrative
180-94096-1

Comments
No additional comments.

Receipt
The samples were received on 8/14/2019 9:00 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 4 coolers at receipt time were 0.7º C, 1.0º C, 1.2º C and 1.8º C.

GC Semi VOA
Method(s) 9056A: The continuing calibration verification (CCV) associated with batch 180-288964 recovered above the upper control limit for Fluoride. The samples associated with this CCV were non-detects or below the RL (J-value) for the affected analytes; therefore, the data have been reported. The following samples are impacted: (CCV 180-288964/64) and (CCV 180-288964/69). Any sample that did have a positive detection for this analyte had its result set to acceptable.

Method(s) 9056A: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 180-288711 and analytical batch 180-288964 were outside control limits for Fluoride. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals
Method(s) 6020A: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for 288386 were outside control limits for antimony and zinc. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method(s) 6020A: The serial dilution performed for the following sample associated with batch 288387 was outside control limits for arsenic.: ALF-BS-BG04-31.5/33.5-20190813 ~ ALF-BG04 (180-94096-14)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
Method(s) D2974: The sample duplicate precision for the following sample associated with analytical batch 180-289145 was outside control limits. Due to the results being so close to the reporting limit, the RPD for fractional organic carbon, loss on ignition, and total organic matter were slightly over 10%.

Method(s) Moisture: The sample duplicate precision for the following sample associated with analytical batch 180-288402 was outside control limits, however it was still lower than 20%.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Definitions/Glossary

Client: Stantec Consulting Services Inc
Project/Site: ALF_BS_20190813_1A

Job ID: 180-94096-1

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
F1	MS and/or MSD Recovery is outside acceptance limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
F1	MS and/or MSD Recovery is outside acceptance limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
F3	Duplicate RPD exceeds the control limit

Geotechnical

Qualifier	Qualifier Description
F5	Duplicate RPD exceeds limit, and one or both sample results are less than 5 times RL. The data are considered valid because the absolute difference is less than the RL.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Accreditation/Certification Summary

Client: Stantec Consulting Services Inc
Project/Site: ALF_BS_20190813_1A

Job ID: 180-94096-1

Laboratory: Eurofins TestAmerica, Pittsburgh

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arkansas DEQ	State	19-033-0	06-27-20
Arkansas DEQ	State Program	88-0690	06-27-20
California	State	2891	04-30-20
California	State Program	2891	04-30-20
Connecticut	State	PH-0688	09-30-20
Connecticut	State Program	PH-0688	09-30-20
Florida	NELAP	E871008	06-30-20
Florida	NELAP	E871008	06-30-20
Illinois	NELAP	200005	06-30-20
Illinois	NELAP	004375	06-30-20
Kansas	NELAP	E-10350	01-31-20
Kansas	NELAP	E-10350	03-31-20
Kentucky (UST)	State Program	162013	04-30-20
Kentucky (WW)	State	KY98043	12-31-19
Kentucky (WW)	State Program	KY98043	12-31-19
Louisiana	NELAP	04041	06-30-20
Minnesota	NELAP	042-999-482	12-31-19
Minnesota	NELAP	042-999-482	12-31-19
Nevada	State	PA00164	07-31-20
Nevada	State Program	PA00164	07-31-20
New Hampshire	NELAP	2030	04-04-20
New Jersey	NELAP	PA005	06-30-20
New Jersey	NELAP	PA005	06-30-20
New York	NELAP	11182	03-31-20
New York	NELAP	11182	04-01-20
North Carolina (WW/SW)	State Program	434	12-31-19
North Dakota	State	R-227	04-30-20
North Dakota	State Program	R-227	04-30-20
Oregon	NELAP	PA-2151	02-06-20
Oregon	NELAP	PA-2151	02-06-20
Pennsylvania	NELAP	02-00416	04-30-20
Pennsylvania	NELAP	02-00416	04-30-20
Rhode Island	State	LAO00362	12-30-19
Rhode Island	State Program	LAO00362	12-30-19
South Carolina	State Program	89014	04-30-20
Texas	NELAP	T104704528-15-2	03-31-20
Texas	NELAP	T104704528	03-31-20
US Fish & Wildlife	US Federal Programs	058448	07-31-20
USDA	Federal	P-Soil-01	06-26-22
USDA	US Federal Programs	P330-16-00211	06-26-22
Utah	NELAP	PA001462015-4	05-31-20
Utah	NELAP	PA001462019-8	05-31-20
Virginia	NELAP	460189	09-14-19
Virginia	NELAP	10043	09-14-19
West Virginia DEP	State	142	01-31-20
West Virginia DEP	State Program	142	01-31-20
Wisconsin	State	998027800	08-31-19
Wisconsin	State Program	998027800	08-31-19

Sample Summary

Client: Stantec Consulting Services Inc
Project/Site: ALF_BS_20190813_1A

Job ID: 180-94096-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
180-94096-1	ALF-BS-FB05-20190813 ~ NA	Water	08/13/19 08:02	08/14/19 09:00	
180-94096-2	ALF-BS-EB02-20190813 ~ NA	Water	08/13/19 08:20	08/14/19 09:00	
180-94096-3	ALF-BS-LB02-20190813 ~ NA	Water	08/13/19 08:41	08/14/19 09:00	
180-94096-4	ALF-BS-BG05-31.5/33.5-20190813 ~ ALF-BG05	Solid	08/13/19 08:58	08/14/19 09:00	
180-94096-5	ALF-BS-BG05-36.5/38.5-20190813 ~ ALF-BG05	Solid	08/13/19 09:26	08/14/19 09:00	
180-94096-6	ALF-BS-BG05-0.0/0.5-20190813 ~ ALF-BG05	Solid	08/13/19 10:12	08/14/19 09:00	
180-94096-7	ALF-BS-DUP02-20190813 ~ NA	Solid	08/13/19 00:00	08/14/19 09:00	
180-94096-8	ALF-BS-BG04-0.5/2.5-20190813 ~ ALF-BG04	Solid	08/13/19 13:29	08/14/19 09:00	
180-94096-9	ALF-BS-BG04-6.5/8.5-20190813 ~ ALF-BG04	Solid	08/13/19 13:52	08/14/19 09:00	
180-94096-10	ALF-BS-BG04-11.5/13.5-20190813 ~ ALF-BG04	Solid	08/13/19 14:17	08/14/19 09:00	
180-94096-11	ALF-BS-BG04-16.5/18.5-20190813 ~ ALF-BG04	Solid	08/13/19 14:51	08/14/19 09:00	
180-94096-12	ALF-BS-BG04-21.5/23.5-20190813 ~ ALF-BG04	Solid	08/13/19 15:14	08/14/19 09:00	
180-94096-13	ALF-BS-BG04-26.5/28.5-20190813 ~ ALF-BG04	Solid	08/13/19 15:35	08/14/19 09:00	
180-94096-14	ALF-BS-BG04-31.5/33.5-20190813 ~ ALF-BG04	Solid	08/13/19 15:56	08/14/19 09:00	
180-94096-15	ALF-BS-BG04-36.5/38.5-20190813 ~ ALF-BG04	Solid	08/13/19 16:19	08/14/19 09:00	

Method Summary

Client: Stantec Consulting Services Inc
Project/Site: ALF_BS_20190813_1A

Job ID: 180-94096-1

Method	Method Description	Protocol	Laboratory
EPA 9056A	Anions, Ion Chromatography	SW846	TAL PIT
EPA 6020A	Metals (ICP/MS)	SW846	TAL PIT
EPA 7470A	Mercury (CVAA)	SW846	TAL PIT
EPA 7471B	Mercury (CVAA)	SW846	TAL PIT
2540G	SM 2540G	SM22	TAL PIT
EPA 9045D	pH	SW846	TAL PIT
ASTM D2974	Moisture, Ash and Organic Matter	ASTM	TAL PIT
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL PIT
3050B	Preparation, Metals	SW846	TAL PIT
7470A	Preparation, Mercury	SW846	TAL PIT
7471B	Preparation, Mercury	SW846	TAL PIT
DI Leach	Deionized Water Leaching Procedure	ASTM	TAL PIT

Protocol References:

ASTM = ASTM International

SM22 = Standard Methods For The Examination Of Water And Wastewater, 22nd Edition

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL PIT = Eurofins TestAmerica, Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

Lab Chronicle

Client: Stantec Consulting Services Inc
Project/Site: ALF_BS_20190813_1A

Job ID: 180-94096-1

Client Sample ID: ALF-BS-FB05-20190813 ~ NA

Lab Sample ID: 180-94096-1

Date Collected: 08/13/19 08:02
Matrix: Water
Date Received: 08/14/19 09:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 9056A		1			289192	08/24/19 15:20	CMR	TAL PIT
	Instrument ID:	CHIC2100A								
Total Recoverable	Prep	3005A			50 mL	50 mL	288363	08/16/19 12:00	KEM	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			289198	08/23/19 17:30	RSK	TAL PIT
	Instrument ID:	A								
Total/NA	Prep	7470A			50 mL	50 mL	288787	08/21/19 09:34	MM1	TAL PIT
Total/NA	Analysis	EPA 7470A		1			288996	08/22/19 09:06	RJR	TAL PIT
	Instrument ID:	HGZ								

Client Sample ID: ALF-BS-EB02-20190813 ~ NA

Lab Sample ID: 180-94096-2

Date Collected: 08/13/19 08:20
Matrix: Water
Date Received: 08/14/19 09:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 9056A		1			289192	08/24/19 15:35	CMR	TAL PIT
	Instrument ID:	CHIC2100A								
Total Recoverable	Prep	3005A			50 mL	50 mL	288363	08/16/19 12:00	KEM	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			289198	08/23/19 17:33	RSK	TAL PIT
	Instrument ID:	A								
Total/NA	Prep	7470A			50 mL	50 mL	288787	08/21/19 09:34	MM1	TAL PIT
Total/NA	Analysis	EPA 7470A		1			288996	08/22/19 09:07	RJR	TAL PIT
	Instrument ID:	HGZ								

Client Sample ID: ALF-BS-LB02-20190813 ~ NA

Lab Sample ID: 180-94096-3

Date Collected: 08/13/19 08:41
Matrix: Water
Date Received: 08/14/19 09:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 9056A		1			289192	08/24/19 15:51	CMR	TAL PIT
	Instrument ID:	CHIC2100A								
Total Recoverable	Prep	3005A			50 mL	50 mL	288363	08/16/19 12:00	KEM	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			289198	08/23/19 17:36	RSK	TAL PIT
	Instrument ID:	A								
Total/NA	Prep	7470A			50 mL	50 mL	288787	08/21/19 09:34	MM1	TAL PIT
Total/NA	Analysis	EPA 7470A		1			288996	08/22/19 09:10	RJR	TAL PIT
	Instrument ID:	HGZ								

Client Sample ID: ALF-BS-BG05-31.5/33.5-20190813 ~ ALF-BG05

Lab Sample ID: 180-94096-4

Date Collected: 08/13/19 08:58
Matrix: Solid
Date Received: 08/14/19 09:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	2540G		1			288262	08/15/19 15:09	PM	TAL PIT
	Instrument ID:	NOEQUIP								

Lab Chronicle

Client: Stantec Consulting Services Inc
Project/Site: ALF_BS_20190813_1A

Job ID: 180-94096-1

Client Sample ID: ALF-BS-BG05-31.5/33.5-20190813 ~ ALF-BG05

Lab Sample ID: 180-94096-4

Date Collected: 08/13/19 08:58
Date Received: 08/14/19 09:00

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 9045D		1	20.05 g	20 mL	288442	08/17/19 09:09	MRD	TAL PIT
Total/NA	Analysis	ASTM D2974		1			289145	08/23/19 13:50	PM	TAL PIT
	Instrument ID:	NOEQUIP								

Client Sample ID: ALF-BS-BG05-31.5/33.5-20190813 ~ ALF-BG05

Lab Sample ID: 180-94096-4

Date Collected: 08/13/19 08:58
Date Received: 08/14/19 09:00

Matrix: Solid
Percent Solids: 80.2

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			010.1265 g	100 mL	288711	08/20/19 14:11	CMR	TAL PIT
Soluble	Analysis	EPA 9056A		1			288964	08/22/19 13:38	CMR	TAL PIT
	Instrument ID:	CHICS2000								
Total/NA	Prep	3050B			1.05 g	100 mL	288386	08/16/19 13:37	KAK	TAL PIT
Total/NA	Analysis	EPA 6020A		1			289472	08/26/19 23:56	WTR	TAL PIT
	Instrument ID:	M								
Total/NA	Prep	7471B			0.73 g	100 mL	288359	08/16/19 11:48	RJR	TAL PIT
Total/NA	Analysis	EPA 7471B		1			288683	08/20/19 09:57	RJR	TAL PIT
	Instrument ID:	HGZ								

Client Sample ID: ALF-BS-BG05-36.5/38.5-20190813 ~ ALF-BG05

Lab Sample ID: 180-94096-5

Date Collected: 08/13/19 09:26
Date Received: 08/14/19 09:00

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	2540G		1			288395	08/16/19 14:35	PM	TAL PIT
	Instrument ID:	NOEQUIP								
Total/NA	Analysis	EPA 9045D		1	19.98 g	20 mL	288442	08/17/19 09:09	MRD	TAL PIT
	Instrument ID:	NOEQUIP								
Total/NA	Analysis	ASTM D2974		1			289145	08/23/19 13:50	PM	TAL PIT
	Instrument ID:	NOEQUIP								

Client Sample ID: ALF-BS-BG05-36.5/38.5-20190813 ~ ALF-BG05

Lab Sample ID: 180-94096-5

Date Collected: 08/13/19 09:26
Date Received: 08/14/19 09:00

Matrix: Solid
Percent Solids: 83.5

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			010.3753 g	100 mL	288711	08/20/19 14:11	CMR	TAL PIT
Soluble	Analysis	EPA 9056A		1			288964	08/22/19 14:23	CMR	TAL PIT
	Instrument ID:	CHICS2000								

Lab Chronicle

Client: Stantec Consulting Services Inc
Project/Site: ALF_BS_20190813_1A

Job ID: 180-94096-1

Client Sample ID: ALF-BS-BG05-36.5/38.5-20190813 ~ ALF-BG05 — Lab Sample ID: 180-94096-5

Date Collected: 08/13/19 09:26 — **Matrix: Solid**
Date Received: 08/14/19 09:00 — **Percent Solids: 83.5**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.02 g	100 mL	288386	08/16/19 13:37	KAK	TAL PIT
Total/NA	Analysis	EPA 6020A		1			289472	08/27/19 00:01	WTR	TAL PIT
	Instrument ID: M									
Total/NA	Prep	7471B			0.77 g	100 mL	288359	08/16/19 11:48	RJR	TAL PIT
Total/NA	Analysis	EPA 7471B		1			288683	08/20/19 09:58	RJR	TAL PIT
	Instrument ID: HGZ									

Client Sample ID: ALF-BS-BG05-0.0/0.5-20190813 ~ ALF-BG05 — Lab Sample ID: 180-94096-6

Date Collected: 08/13/19 10:12 — **Matrix: Solid**
Date Received: 08/14/19 09:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	2540G		1			288395	08/16/19 14:35	PM	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	EPA 9045D		1	20.05 g	20 mL	288442	08/17/19 09:09	MRD	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	ASTM D2974		1			289145	08/23/19 13:50	PM	TAL PIT
	Instrument ID: NOEQUIP									

Client Sample ID: ALF-BS-BG05-0.0/0.5-20190813 ~ ALF-BG05 — Lab Sample ID: 180-94096-6

Date Collected: 08/13/19 10:12 — **Matrix: Solid**
Date Received: 08/14/19 09:00 — **Percent Solids: 77.9**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			010.1990 g	100 mL	288711	08/20/19 14:11	CMR	TAL PIT
Soluble	Analysis	EPA 9056A		1			288964	08/22/19 14:38	CMR	TAL PIT
	Instrument ID: CHICS2000									
Total/NA	Prep	3050B			1.03 g	100 mL	288386	08/16/19 13:37	KAK	TAL PIT
Total/NA	Analysis	EPA 6020A		1			289472	08/27/19 00:38	WTR	TAL PIT
	Instrument ID: M									
Total/NA	Prep	7471B			0.62 g	100 mL	288359	08/16/19 11:48	RJR	TAL PIT
Total/NA	Analysis	EPA 7471B		1			288683	08/20/19 09:59	RJR	TAL PIT
	Instrument ID: HGZ									

Client Sample ID: ALF-BS-DUP02-20190813 ~ NA — Lab Sample ID: 180-94096-7

Date Collected: 08/13/19 00:00 — **Matrix: Solid**
Date Received: 08/14/19 09:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	2540G		1			288395	08/16/19 14:35	PM	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	EPA 9045D		1	20.03 g	20 mL	288442	08/17/19 09:09	MRD	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	ASTM D2974		1			289145	08/23/19 13:50	PM	TAL PIT
	Instrument ID: NOEQUIP									

Lab Chronicle

Client: Stantec Consulting Services Inc
Project/Site: ALF_BS_20190813_1A

Job ID: 180-94096-1

Client Sample ID: ALF-BS-DUP02-20190813 ~ NA — Lab Sample ID: 180-94096-7

Date Collected: 08/13/19 00:00 — **Matrix: Solid**
Date Received: 08/14/19 09:00 — **Percent Solids: 84.9**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			010.1515 g	100 mL	288711	08/20/19 14:11	CMR	TAL PIT
Soluble	Analysis	EPA 9056A		1			288964	08/22/19 15:23	CMR	TAL PIT
	Instrument ID:	CHICS2000								
Total/NA	Prep	3050B			1.01 g	100 mL	288386	08/16/19 13:37	KAK	TAL PIT
Total/NA	Analysis	EPA 6020A		1			289472	08/27/19 00:05	WTR	TAL PIT
	Instrument ID:	M								
Total/NA	Prep	7471B			0.55 g	100 mL	288359	08/16/19 11:48	RJR	TAL PIT
Total/NA	Analysis	EPA 7471B		1			288683	08/20/19 10:05	RJR	TAL PIT
	Instrument ID:	HGZ								

Client Sample ID: ALF-BS-BG04-0.5/2.5-20190813 ~ ALF-BG04 — Lab Sample ID: 180-94096-8

Date Collected: 08/13/19 13:29 — **Matrix: Solid**
Date Received: 08/14/19 09:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	2540G		1			288395	08/16/19 14:35	PM	TAL PIT
	Instrument ID:	NOEQUIP								
Total/NA	Analysis	EPA 9045D		1	20.05 g	20 mL	288442	08/17/19 09:09	MRD	TAL PIT
	Instrument ID:	NOEQUIP								
Total/NA	Analysis	ASTM D2974		1			289145	08/23/19 13:50	PM	TAL PIT
	Instrument ID:	NOEQUIP								

Client Sample ID: ALF-BS-BG04-0.5/2.5-20190813 ~ ALF-BG04 — Lab Sample ID: 180-94096-8

Date Collected: 08/13/19 13:29 — **Matrix: Solid**
Date Received: 08/14/19 09:00 — **Percent Solids: 87.7**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			010.3424 g	100 mL	288711	08/20/19 14:11	CMR	TAL PIT
Soluble	Analysis	EPA 9056A		1			288964	08/22/19 15:37	CMR	TAL PIT
	Instrument ID:	CHICS2000								
Total/NA	Prep	3050B			0.97 g	100 mL	288386	08/16/19 13:37	KAK	TAL PIT
Total/NA	Analysis	EPA 6020A		1			289472	08/27/19 00:10	WTR	TAL PIT
	Instrument ID:	M								
Total/NA	Prep	7471B			0.72 g	100 mL	288359	08/16/19 11:48	RJR	TAL PIT
Total/NA	Analysis	EPA 7471B		1			288683	08/20/19 10:06	RJR	TAL PIT
	Instrument ID:	HGZ								

Client Sample ID: ALF-BS-BG04-6.5/8.5-20190813 ~ ALF-BG04 — Lab Sample ID: 180-94096-9

Date Collected: 08/13/19 13:52 — **Matrix: Solid**
Date Received: 08/14/19 09:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	2540G		1			288402	08/16/19 15:53	PM	TAL PIT
	Instrument ID:	NOEQUIP								
Total/NA	Analysis	EPA 9045D		1	20.05 g	20 mL	288442	08/17/19 09:09	MRD	TAL PIT
	Instrument ID:	NOEQUIP								

Lab Chronicle

Client: Stantec Consulting Services Inc
Project/Site: ALF_BS_20190813_1A

Job ID: 180-94096-1

Client Sample ID: ALF-BS-BG04-6.5/8.5-20190813 ~ ALF-BG04 — Lab Sample ID: 180-94096-9

Date Collected: 08/13/19 13:52 — **Matrix: Solid**
Date Received: 08/14/19 09:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	ASTM D2974		1			289145	08/23/19 13:50	PM	TAL PIT

Client Sample ID: ALF-BS-BG04-6.5/8.5-20190813 ~ ALF-BG04 — Lab Sample ID: 180-94096-9

Date Collected: 08/13/19 13:52 — **Matrix: Solid**
Date Received: 08/14/19 09:00 — **Percent Solids: 70.5**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			010.0776 g	100 mL	288711	08/20/19 14:11	CMR	TAL PIT
Soluble	Analysis	EPA 9056A		1			288964	08/22/19 15:52	CMR	TAL PIT
	Instrument ID:	CHICS2000								
Total/NA	Prep	3050B			1.03 g	100 mL	288386	08/16/19 13:37	KAK	TAL PIT
Total/NA	Analysis	EPA 6020A		1			289472	08/27/19 00:15	WTR	TAL PIT
	Instrument ID:	M								
Total/NA	Prep	7471B			0.67 g	100 mL	288359	08/16/19 11:48	RJR	TAL PIT
Total/NA	Analysis	EPA 7471B		1			288683	08/20/19 10:07	RJR	TAL PIT
	Instrument ID:	HGZ								

Client Sample ID: ALF-BS-BG04-11.5/13.5-20190813 ~ ALF-BG04 — Lab Sample ID: 180-94096-10

Date Collected: 08/13/19 14:17 — **Matrix: Solid**
Date Received: 08/14/19 09:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	2540G		1			288402	08/16/19 15:53	PM	TAL PIT
	Instrument ID:	NOEQUIP								
Total/NA	Analysis	EPA 9045D		1	20.00 g	20 mL	288442	08/17/19 09:09	MRD	TAL PIT
	Instrument ID:	NOEQUIP								
Total/NA	Analysis	ASTM D2974		1			289145	08/23/19 13:50	PM	TAL PIT
	Instrument ID:	NOEQUIP								

Client Sample ID: ALF-BS-BG04-11.5/13.5-20190813 ~ ALF-BG04 — Lab Sample ID: 180-94096-10

Date Collected: 08/13/19 14:17 — **Matrix: Solid**
Date Received: 08/14/19 09:00 — **Percent Solids: 70.9**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			010.2688 g	100 mL	288711	08/20/19 14:11	CMR	TAL PIT
Soluble	Analysis	EPA 9056A		1			288964	08/22/19 16:07	CMR	TAL PIT
	Instrument ID:	CHICS2000								
Total/NA	Prep	3050B			1.05 g	100 mL	288386	08/16/19 13:37	KAK	TAL PIT
Total/NA	Analysis	EPA 6020A		1			289472	08/27/19 00:19	WTR	TAL PIT
	Instrument ID:	M								
Total/NA	Prep	7471B			0.65 g	100 mL	288359	08/16/19 11:48	RJR	TAL PIT
Total/NA	Analysis	EPA 7471B		1			288683	08/20/19 10:08	RJR	TAL PIT
	Instrument ID:	HGZ								

Lab Chronicle

Client: Stantec Consulting Services Inc
Project/Site: ALF_BS_20190813_1A

Job ID: 180-94096-1

Client Sample ID: ALF-BS-BG04-16.5/18.5-20190813 ~ ALF-BG04

Lab Sample ID: 180-94096-11

Date Collected: 08/13/19 14:51
Date Received: 08/14/19 09:00

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	2540G		1			288402	08/16/19 15:53	PM	TAL PIT
	Instrument ID:	NOEQUIP								
Total/NA	Analysis	EPA 9045D		1	19.95 g	20 mL	288442	08/17/19 09:09	MRD	TAL PIT
	Instrument ID:	NOEQUIP								
Total/NA	Analysis	ASTM D2974		1			289145	08/23/19 13:50	PM	TAL PIT
	Instrument ID:	NOEQUIP								

Client Sample ID: ALF-BS-BG04-16.5/18.5-20190813 ~ ALF-BG04

Lab Sample ID: 180-94096-11

Date Collected: 08/13/19 14:51
Date Received: 08/14/19 09:00

Matrix: Solid
Percent Solids: 74.8

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			010.3176 g	100 mL	288711	08/20/19 14:11	CMR	TAL PIT
Soluble	Analysis	EPA 9056A		1			288964	08/22/19 16:22	CMR	TAL PIT
	Instrument ID:	CHICS2000								
Total/NA	Prep	3050B			0.99 g	100 mL	288386	08/16/19 13:37	KAK	TAL PIT
Total/NA	Analysis	EPA 6020A		1			289472	08/27/19 01:01	WTR	TAL PIT
	Instrument ID:	M								
Total/NA	Prep	7471B			0.57 g	100 mL	288359	08/16/19 11:48	RJR	TAL PIT
Total/NA	Analysis	EPA 7471B		1			288683	08/20/19 10:09	RJR	TAL PIT
	Instrument ID:	HGZ								

Client Sample ID: ALF-BS-BG04-21.5/23.5-20190813 ~ ALF-BG04

Lab Sample ID: 180-94096-12

Date Collected: 08/13/19 15:14
Date Received: 08/14/19 09:00

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	2540G		1			288402	08/16/19 15:53	PM	TAL PIT
	Instrument ID:	NOEQUIP								
Total/NA	Analysis	EPA 9045D		1	19.98 g	20 mL	289079	08/23/19 10:20	MRD	TAL PIT
	Instrument ID:	NOEQUIP								
Total/NA	Analysis	ASTM D2974		1			289145	08/23/19 13:50	PM	TAL PIT
	Instrument ID:	NOEQUIP								

Lab Chronicle

Client: Stantec Consulting Services Inc
Project/Site: ALF_BS_20190813_1A

Job ID: 180-94096-1

Client Sample ID: ALF-BS-BG04-21.5/23.5-20190813 ~ ALF-BG04

Lab Sample ID: 180-94096-12

Date Collected: 08/13/19 15:14
Date Received: 08/14/19 09:00

Matrix: Solid
Percent Solids: 82.1

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			010.2662 g	100 mL	288711	08/20/19 14:11	CMR	TAL PIT
Soluble	Analysis	EPA 9056A		1			288964	08/22/19 16:37	CMR	TAL PIT
	Instrument ID:	CHICS2000								
Total/NA	Prep	3050B			1.00 g	100 mL	288386	08/16/19 13:37	KAK	TAL PIT
Total/NA	Analysis	EPA 6020A		1			289472	08/27/19 01:06	WTR	TAL PIT
	Instrument ID:	M								
Total/NA	Prep	7471B			0.85 g	100 mL	288359	08/16/19 11:48	RJR	TAL PIT
Total/NA	Analysis	EPA 7471B		1			288683	08/20/19 10:10	RJR	TAL PIT
	Instrument ID:	HGZ								

Client Sample ID: ALF-BS-BG04-26.5/28.5-20190813 ~ ALF-BG04

Lab Sample ID: 180-94096-13

Date Collected: 08/13/19 15:35
Date Received: 08/14/19 09:00

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	2540G		1			288402	08/16/19 15:53	PM	TAL PIT
	Instrument ID:	NOEQUIP								
Total/NA	Analysis	EPA 9045D		1	20.03 g	20 mL	289079	08/23/19 10:20	MRD	TAL PIT
	Instrument ID:	NOEQUIP								
Total/NA	Analysis	ASTM D2974		1			289145	08/23/19 13:50	PM	TAL PIT
	Instrument ID:	NOEQUIP								

Client Sample ID: ALF-BS-BG04-26.5/28.5-20190813 ~ ALF-BG04

Lab Sample ID: 180-94096-13

Date Collected: 08/13/19 15:35
Date Received: 08/14/19 09:00

Matrix: Solid
Percent Solids: 75.2

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			010.1826 g	100 mL	288711	08/20/19 14:11	CMR	TAL PIT
Soluble	Analysis	EPA 9056A		1			288964	08/22/19 17:22	CMR	TAL PIT
	Instrument ID:	CHICS2000								
Total/NA	Prep	3050B			1.04 g	100 mL	288386	08/16/19 13:37	KAK	TAL PIT
Total/NA	Analysis	EPA 6020A		1			289472	08/27/19 01:11	WTR	TAL PIT
	Instrument ID:	M								
Total/NA	Prep	7471B			0.69 g	100 mL	288359	08/16/19 11:48	RJR	TAL PIT
Total/NA	Analysis	EPA 7471B		1			288683	08/20/19 10:11	RJR	TAL PIT
	Instrument ID:	HGZ								

Lab Chronicle

Client: Stantec Consulting Services Inc
Project/Site: ALF_BS_20190813_1A

Job ID: 180-94096-1

Client Sample ID: ALF-BS-BG04-31.5/33.5-20190813 ~ ALF-BG04

Lab Sample ID: 180-94096-14

Date Collected: 08/13/19 15:56
Date Received: 08/14/19 09:00

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	2540G		1			288402	08/16/19 15:53	PM	TAL PIT
	Instrument ID:	NOEQUIP								
Total/NA	Analysis	EPA 9045D		1	20.06 g	20 mL	289079	08/23/19 10:20	MRD	TAL PIT
	Instrument ID:	NOEQUIP								
Total/NA	Analysis	ASTM D2974		1			289145	08/23/19 13:50	PM	TAL PIT
	Instrument ID:	NOEQUIP								

Client Sample ID: ALF-BS-BG04-31.5/33.5-20190813 ~ ALF-BG04

Lab Sample ID: 180-94096-14

Date Collected: 08/13/19 15:56
Date Received: 08/14/19 09:00

Matrix: Solid
Percent Solids: 74.0

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			010.1440 g	100 mL	288711	08/20/19 14:11	CMR	TAL PIT
Soluble	Analysis	EPA 9056A		1			288964	08/22/19 17:37	CMR	TAL PIT
	Instrument ID:	CHICS2000								
Total/NA	Prep	3050B			0.96 g	100 mL	288387	08/16/19 13:40	KAK	TAL PIT
Total/NA	Analysis	EPA 6020A		1			289611	08/28/19 01:08	WTR	TAL PIT
	Instrument ID:	M								
Total/NA	Prep	7471B			0.62 g	100 mL	288359	08/16/19 11:48	RJR	TAL PIT
Total/NA	Analysis	EPA 7471B		1			288683	08/20/19 10:12	RJR	TAL PIT
	Instrument ID:	HGZ								

Client Sample ID: ALF-BS-BG04-36.5/38.5-20190813 ~ ALF-BG04

Lab Sample ID: 180-94096-15

Date Collected: 08/13/19 16:19
Date Received: 08/14/19 09:00

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	2540G		1			288402	08/16/19 15:53	PM	TAL PIT
	Instrument ID:	NOEQUIP								
Total/NA	Analysis	EPA 9045D		1	20.01 g	20 mL	289079	08/23/19 10:20	MRD	TAL PIT
	Instrument ID:	NOEQUIP								
Total/NA	Analysis	ASTM D2974		1			289145	08/23/19 13:50	PM	TAL PIT
	Instrument ID:	NOEQUIP								

Lab Chronicle

Client: Stantec Consulting Services Inc
Project/Site: ALF_BS_20190813_1A

Job ID: 180-94096-1

Client Sample ID: ALF-BS-BG04-36.5/38.5-20190813 ~ ALF-BG04

Lab Sample ID: 180-94096-15

Date Collected: 08/13/19 16:19
Date Received: 08/14/19 09:00

Matrix: Solid
Percent Solids: 81.6

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			010.1181 g	100 mL	288711	08/20/19 14:11	CMR	TAL PIT
Soluble	Analysis	EPA 9056A		1			288964	08/22/19 17:52	CMR	TAL PIT
	Instrument ID:	CHICS2000								
Total/NA	Prep	3050B			1.01 g	100 mL	288387	08/16/19 13:40	KAK	TAL PIT
Total/NA	Analysis	EPA 6020A		1			289611	08/28/19 00:44	WTR	TAL PIT
	Instrument ID:	M								
Total/NA	Prep	7471B			0.67 g	100 mL	288359	08/16/19 11:48	RJR	TAL PIT
Total/NA	Analysis	EPA 7471B		1			288683	08/20/19 10:12	RJR	TAL PIT
	Instrument ID:	HGZ								

Laboratory References:

TAL PIT = Eurofins TestAmerica, Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

Analyst References:

Lab: TAL PIT

- Batch Type: Leach
  - CMR = Carl Reagle
- Batch Type: Prep
  - KAK = Kayla Kalamasz
  - KEM = Kimberly Mahoney
  - MM1 = Mary Beth Miller
  - RJR = Ron Rosenbaum
- Batch Type: Analysis
  - CMR = Carl Reagle
  - MRD = Madeline Daugherty
  - PM = Paloma Hoelzle
  - RJR = Ron Rosenbaum
  - RSK = Robert Kurtz
  - WTR = Bill Reinheimer

Client Sample Results

Client: Stantec Consulting Services Inc
Project/Site: ALF_BS_20190813_1A

Job ID: 180-94096-1

Client Sample ID: ALF-BS-FB05-20190813 ~ NA

Lab Sample ID: 180-94096-1

Date Collected: 08/13/19 08:02
Matrix: Water
Date Received: 08/14/19 09:00

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		1.00	0.715	mg/L			08/24/19 15:20	1
Fluoride	ND		0.100	0.0263	mg/L			08/24/19 15:20	1
Sulfate	ND		1.00	0.380	mg/L			08/24/19 15:20	1

Method: EPA 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.00105**	**J**	0.00200	0.000378	mg/L		08/16/19 12:00	08/23/19 17:30	1
Arsenic	ND		0.00100	0.000323	mg/L		08/16/19 12:00	08/23/19 17:30	1
Barium	ND		0.0100	0.00160	mg/L		08/16/19 12:00	08/23/19 17:30	1
Beryllium	**0.000190**	**J**	0.00100	0.000182	mg/L		08/16/19 12:00	08/23/19 17:30	1
Boron	ND		0.0800	0.0386	mg/L		08/16/19 12:00	08/23/19 17:30	1
Cadmium	ND		0.00100	0.000125	mg/L		08/16/19 12:00	08/23/19 17:30	1
Calcium	ND		0.500	0.127	mg/L		08/16/19 12:00	08/23/19 17:30	1
Chromium	**0.00213**		0.00200	0.00153	mg/L		08/16/19 12:00	08/23/19 17:30	1
Cobalt	ND		0.000500	0.0000750	mg/L		08/16/19 12:00	08/23/19 17:30	1
Copper	ND		0.00200	0.000627	mg/L		08/16/19 12:00	08/23/19 17:30	1
Lead	ND		0.00100	0.000128	mg/L		08/16/19 12:00	08/23/19 17:30	1
Lithium	**0.00408**	**J**	0.00500	0.00339	mg/L		08/16/19 12:00	08/23/19 17:30	1
Molybdenum	ND		0.00500	0.000610	mg/L		08/16/19 12:00	08/23/19 17:30	1
Nickel	ND		0.00100	0.000336	mg/L		08/16/19 12:00	08/23/19 17:30	1
Selenium	ND		0.00500	0.00151	mg/L		08/16/19 12:00	08/23/19 17:30	1
Silver	ND		0.00100	0.000177	mg/L		08/16/19 12:00	08/23/19 17:30	1
Thallium	ND		0.00100	0.000148	mg/L		08/16/19 12:00	08/23/19 17:30	1
Vanadium	**0.00172**		0.00100	0.000991	mg/L		08/16/19 12:00	08/23/19 17:30	1
Zinc	**0.00411**	**J**	0.00500	0.00322	mg/L		08/16/19 12:00	08/23/19 17:30	1

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200	0.000101	mg/L		08/21/19 09:34	08/22/19 09:06	1

Client Sample Results

Client: Stantec Consulting Services Inc
Project/Site: ALF_BS_20190813_1A

Job ID: 180-94096-1

Client Sample ID: ALF-BS-EB02-20190813 ~ NA

Lab Sample ID: 180-94096-2

Date Collected: 08/13/19 08:20
Matrix: Water
Date Received: 08/14/19 09:00

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		1.00	0.715	mg/L			08/24/19 15:35	1
Fluoride	ND		0.100	0.0263	mg/L			08/24/19 15:35	1
Sulfate	ND		1.00	0.380	mg/L			08/24/19 15:35	1

Method: EPA 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.000838**	**J**	0.00200	0.000378	mg/L		08/16/19 12:00	08/23/19 17:33	1
Arsenic	ND		0.00100	0.000323	mg/L		08/16/19 12:00	08/23/19 17:33	1
Barium	ND		0.0100	0.00160	mg/L		08/16/19 12:00	08/23/19 17:33	1
Beryllium	**0.000201**	**J**	0.00100	0.000182	mg/L		08/16/19 12:00	08/23/19 17:33	1
Boron	ND		0.0800	0.0386	mg/L		08/16/19 12:00	08/23/19 17:33	1
Cadmium	ND		0.00100	0.000125	mg/L		08/16/19 12:00	08/23/19 17:33	1
Calcium	ND		0.500	0.127	mg/L		08/16/19 12:00	08/23/19 17:33	1
Chromium	**0.00210**		0.00200	0.00153	mg/L		08/16/19 12:00	08/23/19 17:33	1
Cobalt	ND		0.000500	0.0000750	mg/L		08/16/19 12:00	08/23/19 17:33	1
Copper	ND		0.00200	0.000627	mg/L		08/16/19 12:00	08/23/19 17:33	1
Lead	ND		0.00100	0.000128	mg/L		08/16/19 12:00	08/23/19 17:33	1
Lithium	ND		0.00500	0.00339	mg/L		08/16/19 12:00	08/23/19 17:33	1
Molybdenum	ND		0.00500	0.000610	mg/L		08/16/19 12:00	08/23/19 17:33	1
Nickel	ND		0.00100	0.000336	mg/L		08/16/19 12:00	08/23/19 17:33	1
Selenium	ND		0.00500	0.00151	mg/L		08/16/19 12:00	08/23/19 17:33	1
Silver	ND		0.00100	0.000177	mg/L		08/16/19 12:00	08/23/19 17:33	1
Thallium	ND		0.00100	0.000148	mg/L		08/16/19 12:00	08/23/19 17:33	1
Vanadium	**0.00138**		0.00100	0.000991	mg/L		08/16/19 12:00	08/23/19 17:33	1
Zinc	**0.00359**	**J**	0.00500	0.00322	mg/L		08/16/19 12:00	08/23/19 17:33	1

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200	0.000101	mg/L		08/21/19 09:34	08/22/19 09:07	1

Client Sample Results

Client: Stantec Consulting Services Inc
Project/Site: ALF_BS_20190813_1A

Job ID: 180-94096-1

Client Sample ID: ALF-BS-LB02-20190813 ~ NA

Lab Sample ID: 180-94096-3

Date Collected: 08/13/19 08:41
Matrix: Water
Date Received: 08/14/19 09:00

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		1.00	0.715	mg/L			08/24/19 15:51	1
Fluoride	ND		0.100	0.0263	mg/L			08/24/19 15:51	1
Sulfate	**0.585**	**J**	1.00	0.380	mg/L			08/24/19 15:51	1

Method: EPA 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.00116**	**J**	0.00200	0.000378	mg/L		08/16/19 12:00	08/23/19 17:36	1
Arsenic	**0.000325**	**J**	0.00100	0.000323	mg/L		08/16/19 12:00	08/23/19 17:36	1
Barium	**0.00231**	**J**	0.0100	0.00160	mg/L		08/16/19 12:00	08/23/19 17:36	1
Beryllium	**0.000193**	**J**	0.00100	0.000182	mg/L		08/16/19 12:00	08/23/19 17:36	1
Boron	ND		0.0800	0.0386	mg/L		08/16/19 12:00	08/23/19 17:36	1
Cadmium	ND		0.00100	0.000125	mg/L		08/16/19 12:00	08/23/19 17:36	1
Calcium	ND		0.500	0.127	mg/L		08/16/19 12:00	08/23/19 17:36	1
Chromium	**0.00324**		0.00200	0.00153	mg/L		08/16/19 12:00	08/23/19 17:36	1
Cobalt	ND		0.000500	0.0000750	mg/L		08/16/19 12:00	08/23/19 17:36	1
Copper	ND		0.00200	0.000627	mg/L		08/16/19 12:00	08/23/19 17:36	1
Lead	ND		0.00100	0.000128	mg/L		08/16/19 12:00	08/23/19 17:36	1
Lithium	**0.00418**	**J**	0.00500	0.00339	mg/L		08/16/19 12:00	08/23/19 17:36	1
Molybdenum	ND		0.00500	0.000610	mg/L		08/16/19 12:00	08/23/19 17:36	1
Nickel	ND		0.00100	0.000336	mg/L		08/16/19 12:00	08/23/19 17:36	1
Selenium	ND		0.00500	0.00151	mg/L		08/16/19 12:00	08/23/19 17:36	1
Silver	ND		0.00100	0.000177	mg/L		08/16/19 12:00	08/23/19 17:36	1
Thallium	ND		0.00100	0.000148	mg/L		08/16/19 12:00	08/23/19 17:36	1
Vanadium	**0.00189**		0.00100	0.000991	mg/L		08/16/19 12:00	08/23/19 17:36	1
Zinc	**0.00426**	**J**	0.00500	0.00322	mg/L		08/16/19 12:00	08/23/19 17:36	1

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200	0.000101	mg/L		08/21/19 09:34	08/22/19 09:10	1

Client Sample Results

Client: Stantec Consulting Services Inc
Project/Site: ALF_BS_20190813_1A

Job ID: 180-94096-1

Client Sample ID: ALF-BS-BG05-31.5/33.5-20190813 ~ ALF-BG05

Lab Sample ID: 180-94096-4

Date Collected: 08/13/19 08:58
Date Received: 08/14/19 09:00

Matrix: Solid
Percent Solids: 80.2

Method: EPA 9056A - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		12.3	4.78	mg/Kg	☼		08/22/19 13:38	1
Fluoride	ND		1.23	0.837	mg/Kg	☼		08/22/19 13:38	1
Sulfate	**21.5**		12.3	8.36	mg/Kg	☼		08/22/19 13:38	1

Method: EPA 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.0749**	**J**	0.238	0.0736	mg/Kg	☼	08/16/19 13:37	08/26/19 23:56	1
Arsenic	**1.54**		0.119	0.0309	mg/Kg	☼	08/16/19 13:37	08/26/19 23:56	1
Barium	**35.8**		1.19	0.152	mg/Kg	☼	08/16/19 13:37	08/26/19 23:56	1
Beryllium	**0.170**		0.119	0.00891	mg/Kg	☼	08/16/19 13:37	08/26/19 23:56	1
Boron	**1.77**	**J**	9.50	1.60	mg/Kg	☼	08/16/19 13:37	08/26/19 23:56	1
Cadmium	**0.0815**	**J**	0.119	0.0202	mg/Kg	☼	08/16/19 13:37	08/26/19 23:56	1
Calcium	**4280**		59.4	10.6	mg/Kg	☼	08/16/19 13:37	08/26/19 23:56	1
Chromium	**4.20**		0.238	0.0986	mg/Kg	☼	08/16/19 13:37	08/26/19 23:56	1
Cobalt	**3.02**		0.0594	0.00986	mg/Kg	☼	08/16/19 13:37	08/26/19 23:56	1
Copper	**2.19**		0.238	0.134	mg/Kg	☼	08/16/19 13:37	08/26/19 23:56	1
Lead	**3.92**		0.119	0.0416	mg/Kg	☼	08/16/19 13:37	08/26/19 23:56	1
Lithium	**2.67**		0.594	0.328	mg/Kg	☼	08/16/19 13:37	08/26/19 23:56	1
Molybdenum	**0.215**	**J**	0.594	0.194	mg/Kg	☼	08/16/19 13:37	08/26/19 23:56	1
Nickel	**8.12**		0.119	0.0724	mg/Kg	☼	08/16/19 13:37	08/26/19 23:56	1
Selenium	**0.345**	**J**	0.594	0.145	mg/Kg	☼	08/16/19 13:37	08/26/19 23:56	1
Silver	ND		0.119	0.0321	mg/Kg	☼	08/16/19 13:37	08/26/19 23:56	1
Thallium	**0.0527**	**J**	0.119	0.0297	mg/Kg	☼	08/16/19 13:37	08/26/19 23:56	1
Vanadium	**6.28**		0.119	0.0760	mg/Kg	☼	08/16/19 13:37	08/26/19 23:56	1
Zinc	**16.5**		0.594	0.397	mg/Kg	☼	08/16/19 13:37	08/26/19 23:56	1

Method: EPA 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0338	0.0147	mg/Kg	☼	08/16/19 11:48	08/20/19 09:57	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**19.8**		0.1	0.1	%			08/15/19 15:09	1
Percent Solids	**80.2**		0.1	0.1	%			08/15/19 15:09	1
pH	**8.3**		0.1	0.1	SU			08/17/19 09:09	1

Method: ASTM D2974 - Moisture, Ash and Organic Matter

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Fractional Organic Carbon	**0.5**		0.5	0.5	%			08/23/19 13:50	1

Client Sample Results

Client: Stantec Consulting Services Inc
Project/Site: ALF_BS_20190813_1A

Job ID: 180-94096-1

Client Sample ID: ALF-BS-BG05-36.5/38.5-20190813 ~ ALF-BG05

Lab Sample ID: 180-94096-5

Date Collected: 08/13/19 09:26
Date Received: 08/14/19 09:00

Matrix: Solid
Percent Solids: 83.5

Method: EPA 9056A - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		11.5	4.48	mg/Kg	☼		08/22/19 14:23	1
Fluoride	ND		1.15	0.785	mg/Kg	☼		08/22/19 14:23	1
Sulfate	**12.2**		11.5	7.84	mg/Kg	☼		08/22/19 14:23	1

Method: EPA 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.235	0.0728	mg/Kg	☼	08/16/19 13:37	08/27/19 00:01	1
Arsenic	**1.27**		0.117	0.0305	mg/Kg	☼	08/16/19 13:37	08/27/19 00:01	1
Barium	**16.5**		1.17	0.150	mg/Kg	☼	08/16/19 13:37	08/27/19 00:01	1
Beryllium	**0.122**		0.117	0.00880	mg/Kg	☼	08/16/19 13:37	08/27/19 00:01	1
Boron	ND		9.39	1.58	mg/Kg	☼	08/16/19 13:37	08/27/19 00:01	1
Cadmium	**0.0696**	**J**	0.117	0.0200	mg/Kg	☼	08/16/19 13:37	08/27/19 00:01	1
Calcium	**1480**		58.7	10.5	mg/Kg	☼	08/16/19 13:37	08/27/19 00:01	1
Chromium	**2.59**		0.235	0.0974	mg/Kg	☼	08/16/19 13:37	08/27/19 00:01	1
Cobalt	**2.31**		0.0587	0.00974	mg/Kg	☼	08/16/19 13:37	08/27/19 00:01	1
Copper	**1.19**		0.235	0.133	mg/Kg	☼	08/16/19 13:37	08/27/19 00:01	1
Lead	**2.77**		0.117	0.0411	mg/Kg	☼	08/16/19 13:37	08/27/19 00:01	1
Lithium	**1.50**		0.587	0.324	mg/Kg	☼	08/16/19 13:37	08/27/19 00:01	1
Molybdenum	**0.247**	**J**	0.587	0.191	mg/Kg	☼	08/16/19 13:37	08/27/19 00:01	1
Nickel	**5.59**		0.117	0.0716	mg/Kg	☼	08/16/19 13:37	08/27/19 00:01	1
Selenium	**0.252**	**J**	0.587	0.143	mg/Kg	☼	08/16/19 13:37	08/27/19 00:01	1
Silver	ND		0.117	0.0317	mg/Kg	☼	08/16/19 13:37	08/27/19 00:01	1
Thallium	**0.0377**	**J**	0.117	0.0293	mg/Kg	☼	08/16/19 13:37	08/27/19 00:01	1
Vanadium	**3.89**		0.117	0.0751	mg/Kg	☼	08/16/19 13:37	08/27/19 00:01	1
Zinc	**9.31**		0.587	0.392	mg/Kg	☼	08/16/19 13:37	08/27/19 00:01	1

Method: EPA 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0308	0.0133	mg/Kg	☼	08/16/19 11:48	08/20/19 09:58	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**16.5**		0.1	0.1	%			08/16/19 14:35	1
Percent Solids	**83.5**		0.1	0.1	%			08/16/19 14:35	1
pH	**8.2**		0.1	0.1	SU			08/17/19 09:09	1

Method: ASTM D2974 - Moisture, Ash and Organic Matter

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Fractional Organic Carbon	ND		0.5	0.5	%			08/23/19 13:50	1

Client Sample Results

Client: Stantec Consulting Services Inc
Project/Site: ALF_BS_20190813_1A

Job ID: 180-94096-1

Client Sample ID: ALF-BS-BG05-0.0/0.5-20190813 ~ ALF-BG05

Lab Sample ID: 180-94096-6

Date Collected: 08/13/19 10:12
Date Received: 08/14/19 09:00

Matrix: Solid
Percent Solids: 77.9

Method: EPA 9056A - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		12.6	4.88	mg/Kg	☼		08/22/19 14:38	1
Fluoride	4.39	F1	1.26	0.856	mg/Kg	☼		08/22/19 14:38	1
Sulfate	49.9		12.6	8.55	mg/Kg	☼		08/22/19 14:38	1

Method: EPA 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.392	F1	0.249	0.0773	mg/Kg	☼	08/16/19 13:37	08/27/19 00:38	1
Arsenic	6.04		0.125	0.0324	mg/Kg	☼	08/16/19 13:37	08/27/19 00:38	1
Barium	136		1.25	0.160	mg/Kg	☼	08/16/19 13:37	08/27/19 00:38	1
Beryllium	0.462		0.125	0.00935	mg/Kg	☼	08/16/19 13:37	08/27/19 00:38	1
Boron	4.84	J	9.97	1.68	mg/Kg	☼	08/16/19 13:37	08/27/19 00:38	1
Cadmium	0.424		0.125	0.0212	mg/Kg	☼	08/16/19 13:37	08/27/19 00:38	1
Calcium	3100		62.3	11.2	mg/Kg	☼	08/16/19 13:37	08/27/19 00:38	1
Chromium	13.7		0.249	0.103	mg/Kg	☼	08/16/19 13:37	08/27/19 00:38	1
Cobalt	5.54		0.0623	0.0103	mg/Kg	☼	08/16/19 13:37	08/27/19 00:38	1
Copper	18.6		0.249	0.141	mg/Kg	☼	08/16/19 13:37	08/27/19 00:38	1
Lead	28.4		0.125	0.0436	mg/Kg	☼	08/16/19 13:37	08/27/19 00:38	1
Lithium	7.54		0.623	0.344	mg/Kg	☼	08/16/19 13:37	08/27/19 00:38	1
Molybdenum	0.819		0.623	0.203	mg/Kg	☼	08/16/19 13:37	08/27/19 00:38	1
Nickel	13.0		0.125	0.0760	mg/Kg	☼	08/16/19 13:37	08/27/19 00:38	1
Selenium	0.945		0.623	0.152	mg/Kg	☼	08/16/19 13:37	08/27/19 00:38	1
Silver	0.592		0.125	0.0337	mg/Kg	☼	08/16/19 13:37	08/27/19 00:38	1
Thallium	0.211		0.125	0.0312	mg/Kg	☼	08/16/19 13:37	08/27/19 00:38	1
Vanadium	17.8		0.125	0.0798	mg/Kg	☼	08/16/19 13:37	08/27/19 00:38	1
Zinc	63.2	F1	0.623	0.416	mg/Kg	☼	08/16/19 13:37	08/27/19 00:38	1

Method: EPA 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.144		0.0410	0.0178	mg/Kg	☼	08/16/19 11:48	08/20/19 09:59	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	22.1		0.1	0.1	%			08/16/19 14:35	1
Percent Solids	77.9		0.1	0.1	%			08/16/19 14:35	1
pH	7.0		0.1	0.1	SU			08/17/19 09:09	1

Method: ASTM D2974 - Moisture, Ash and Organic Matter

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Fractional Organic Carbon	2.8		0.5	0.5	%			08/23/19 13:50	1

Client Sample Results

Client: Stantec Consulting Services Inc
Project/Site: ALF_BS_20190813_1A

Job ID: 180-94096-1

Client Sample ID: ALF-BS-DUP02-20190813 ~ NA

Lab Sample ID: 180-94096-7

Date Collected: 08/13/19 00:00
Date Received: 08/14/19 09:00

Matrix: Solid
Percent Solids: 84.9

Method: EPA 9056A - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		11.6	4.50	mg/Kg	☼		08/22/19 15:23	1
Fluoride	3.02		1.16	0.789	mg/Kg	☼		08/22/19 15:23	1
Sulfate	42.3		11.6	7.88	mg/Kg	☼		08/22/19 15:23	1

Method: EPA 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.321		0.233	0.0723	mg/Kg	☼	08/16/19 13:37	08/27/19 00:05	1
Arsenic	5.01		0.117	0.0303	mg/Kg	☼	08/16/19 13:37	08/27/19 00:05	1
Barium	117		1.17	0.149	mg/Kg	☼	08/16/19 13:37	08/27/19 00:05	1
Beryllium	0.441		0.117	0.00875	mg/Kg	☼	08/16/19 13:37	08/27/19 00:05	1
Boron	4.17	J	9.33	1.57	mg/Kg	☼	08/16/19 13:37	08/27/19 00:05	1
Cadmium	0.388		0.117	0.0198	mg/Kg	☼	08/16/19 13:37	08/27/19 00:05	1
Calcium	2960		58.3	10.4	mg/Kg	☼	08/16/19 13:37	08/27/19 00:05	1
Chromium	11.1		0.233	0.0968	mg/Kg	☼	08/16/19 13:37	08/27/19 00:05	1
Cobalt	4.52		0.0583	0.00968	mg/Kg	☼	08/16/19 13:37	08/27/19 00:05	1
Copper	15.1		0.233	0.132	mg/Kg	☼	08/16/19 13:37	08/27/19 00:05	1
Lead	23.8		0.117	0.0408	mg/Kg	☼	08/16/19 13:37	08/27/19 00:05	1
Lithium	6.68		0.583	0.322	mg/Kg	☼	08/16/19 13:37	08/27/19 00:05	1
Molybdenum	0.667		0.583	0.190	mg/Kg	☼	08/16/19 13:37	08/27/19 00:05	1
Nickel	10.9		0.117	0.0711	mg/Kg	☼	08/16/19 13:37	08/27/19 00:05	1
Selenium	0.638		0.583	0.142	mg/Kg	☼	08/16/19 13:37	08/27/19 00:05	1
Silver	0.507		0.117	0.0315	mg/Kg	☼	08/16/19 13:37	08/27/19 00:05	1
Thallium	0.195		0.117	0.0292	mg/Kg	☼	08/16/19 13:37	08/27/19 00:05	1
Vanadium	14.3		0.117	0.0746	mg/Kg	☼	08/16/19 13:37	08/27/19 00:05	1
Zinc	50.4		0.583	0.389	mg/Kg	☼	08/16/19 13:37	08/27/19 00:05	1

Method: EPA 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.109		0.0424	0.0184	mg/Kg	☼	08/16/19 11:48	08/20/19 10:05	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	15.1		0.1	0.1	%			08/16/19 14:35	1
Percent Solids	84.9		0.1	0.1	%			08/16/19 14:35	1
pH	6.8		0.1	0.1	SU			08/17/19 09:09	1

Method: ASTM D2974 - Moisture, Ash and Organic Matter

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Fractional Organic Carbon	2.8		0.5	0.5	%			08/23/19 13:50	1

Client Sample Results

Client: Stantec Consulting Services Inc
Project/Site: ALF_BS_20190813_1A

Job ID: 180-94096-1

Client Sample ID: ALF-BS-BG04-0.5/2.5-20190813 ~ ALF-BG04

Lab Sample ID: 180-94096-8
Date Collected: 08/13/19 13:29
Matrix: Solid
Date Received: 08/14/19 09:00
Percent Solids: 87.7

Method: EPA 9056A - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		11.0	4.28	mg/Kg	☼		08/22/19 15:37	1
Fluoride	**1.19**		1.10	0.750	mg/Kg	☼		08/22/19 15:37	1
Sulfate	ND		11.0	7.48	mg/Kg	☼		08/22/19 15:37	1

Method: EPA 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.129**	**J**	0.235	0.0729	mg/Kg	☼	08/16/19 13:37	08/27/19 00:10	1
Arsenic	**2.93**		0.118	0.0306	mg/Kg	☼	08/16/19 13:37	08/27/19 00:10	1
Barium	**77.5**		1.18	0.150	mg/Kg	☼	08/16/19 13:37	08/27/19 00:10	1
Beryllium	**0.306**		0.118	0.00882	mg/Kg	☼	08/16/19 13:37	08/27/19 00:10	1
Boron	**2.79**	**J**	9.40	1.59	mg/Kg	☼	08/16/19 13:37	08/27/19 00:10	1
Cadmium	**0.207**		0.118	0.0200	mg/Kg	☼	08/16/19 13:37	08/27/19 00:10	1
Calcium	**2210**		58.8	10.5	mg/Kg	☼	08/16/19 13:37	08/27/19 00:10	1
Chromium	**5.71**		0.235	0.0976	mg/Kg	☼	08/16/19 13:37	08/27/19 00:10	1
Cobalt	**3.41**		0.0588	0.00976	mg/Kg	☼	08/16/19 13:37	08/27/19 00:10	1
Copper	**6.21**		0.235	0.133	mg/Kg	☼	08/16/19 13:37	08/27/19 00:10	1
Lead	**7.42**		0.118	0.0411	mg/Kg	☼	08/16/19 13:37	08/27/19 00:10	1
Lithium	**4.54**		0.588	0.324	mg/Kg	☼	08/16/19 13:37	08/27/19 00:10	1
Molybdenum	**0.318**	**J**	0.588	0.192	mg/Kg	☼	08/16/19 13:37	08/27/19 00:10	1
Nickel	**8.66**		0.118	0.0717	mg/Kg	☼	08/16/19 13:37	08/27/19 00:10	1
Selenium	**0.598**		0.588	0.143	mg/Kg	☼	08/16/19 13:37	08/27/19 00:10	1
Silver	**0.0636**	**J**	0.118	0.0317	mg/Kg	☼	08/16/19 13:37	08/27/19 00:10	1
Thallium	**0.120**		0.118	0.0294	mg/Kg	☼	08/16/19 13:37	08/27/19 00:10	1
Vanadium	**9.44**		0.118	0.0752	mg/Kg	☼	08/16/19 13:37	08/27/19 00:10	1
Zinc	**26.0**		0.588	0.393	mg/Kg	☼	08/16/19 13:37	08/27/19 00:10	1

Method: EPA 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.0193**	**J**	0.0314	0.0136	mg/Kg	☼	08/16/19 11:48	08/20/19 10:06	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**12.3**		0.1	0.1	%			08/16/19 14:35	1
Percent Solids	**87.7**		0.1	0.1	%			08/16/19 14:35	1
pH	**7.7**		0.1	0.1	SU			08/17/19 09:09	1

Method: ASTM D2974 - Moisture, Ash and Organic Matter

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Fractional Organic Carbon	**1.2**		0.5	0.5	%			08/23/19 13:50	1

Client Sample Results

Client: Stantec Consulting Services Inc
Project/Site: ALF_BS_20190813_1A

Job ID: 180-94096-1

Client Sample ID: ALF-BS-BG04-6.5/8.5-20190813 ~ ALF-BG04

Lab Sample ID: 180-94096-9

Date Collected: 08/13/19 13:52
Date Received: 08/14/19 09:00

Matrix: Solid
Percent Solids: 70.5

Method: EPA 9056A - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		14.1	5.46	mg/Kg	☼		08/22/19 15:52	1
Fluoride	4.40		1.41	0.957	mg/Kg	☼		08/22/19 15:52	1
Sulfate	14.1		14.1	9.55	mg/Kg	☼		08/22/19 15:52	1

Method: EPA 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.308		0.275	0.0853	mg/Kg	☼	08/16/19 13:37	08/27/19 00:15	1
Arsenic	5.74		0.138	0.0358	mg/Kg	☼	08/16/19 13:37	08/27/19 00:15	1
Barium	198		1.38	0.176	mg/Kg	☼	08/16/19 13:37	08/27/19 00:15	1
Beryllium	0.757		0.138	0.0103	mg/Kg	☼	08/16/19 13:37	08/27/19 00:15	1
Boron	7.15	J	11.0	1.86	mg/Kg	☼	08/16/19 13:37	08/27/19 00:15	1
Cadmium	0.505		0.138	0.0234	mg/Kg	☼	08/16/19 13:37	08/27/19 00:15	1
Calcium	16900		68.8	12.3	mg/Kg	☼	08/16/19 13:37	08/27/19 00:15	1
Chromium	12.0		0.275	0.114	mg/Kg	☼	08/16/19 13:37	08/27/19 00:15	1
Cobalt	6.66		0.0688	0.0114	mg/Kg	☼	08/16/19 13:37	08/27/19 00:15	1
Copper	14.7		0.275	0.156	mg/Kg	☼	08/16/19 13:37	08/27/19 00:15	1
Lead	13.0		0.138	0.0482	mg/Kg	☼	08/16/19 13:37	08/27/19 00:15	1
Lithium	11.0		0.688	0.380	mg/Kg	☼	08/16/19 13:37	08/27/19 00:15	1
Molybdenum	0.770		0.688	0.224	mg/Kg	☼	08/16/19 13:37	08/27/19 00:15	1
Nickel	19.3		0.138	0.0840	mg/Kg	☼	08/16/19 13:37	08/27/19 00:15	1
Selenium	0.898		0.688	0.168	mg/Kg	☼	08/16/19 13:37	08/27/19 00:15	1
Silver	0.0805	J	0.138	0.0372	mg/Kg	☼	08/16/19 13:37	08/27/19 00:15	1
Thallium	0.314		0.138	0.0344	mg/Kg	☼	08/16/19 13:37	08/27/19 00:15	1
Vanadium	21.7		0.138	0.0881	mg/Kg	☼	08/16/19 13:37	08/27/19 00:15	1
Zinc	48.9		0.688	0.460	mg/Kg	☼	08/16/19 13:37	08/27/19 00:15	1

Method: EPA 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0265	J	0.0419	0.0182	mg/Kg	☼	08/16/19 11:48	08/20/19 10:07	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	29.5		0.1	0.1	%			08/16/19 15:53	1
Percent Solids	70.5		0.1	0.1	%			08/16/19 15:53	1
pH	8.2		0.1	0.1	SU			08/17/19 09:09	1

Method: ASTM D2974 - Moisture, Ash and Organic Matter

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Fractional Organic Carbon	2.6		0.5	0.5	%			08/23/19 13:50	1

Client Sample Results

Client: Stantec Consulting Services Inc
Project/Site: ALF_BS_20190813_1A

Job ID: 180-94096-1

Client Sample ID: ALF-BS-BG04-11.5/13.5-20190813 ~ ALF-BG04

Lab Sample ID: 180-94096-10

Date Collected: 08/13/19 14:17
Date Received: 08/14/19 09:00

Matrix: Solid
Percent Solids: 70.9

Method: EPA 9056A - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		13.7	5.33	mg/Kg	☼		08/22/19 16:07	1
Fluoride	6.47		1.37	0.934	mg/Kg	☼		08/22/19 16:07	1
Sulfate	18.8		13.7	9.33	mg/Kg	☼		08/22/19 16:07	1

Method: EPA 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.410		0.269	0.0833	mg/Kg	☼	08/16/19 13:37	08/27/19 00:19	1
Arsenic	7.44		0.134	0.0349	mg/Kg	☼	08/16/19 13:37	08/27/19 00:19	1
Barium	177		1.34	0.172	mg/Kg	☼	08/16/19 13:37	08/27/19 00:19	1
Beryllium	0.979		0.134	0.0101	mg/Kg	☼	08/16/19 13:37	08/27/19 00:19	1
Boron	9.65	J	10.7	1.81	mg/Kg	☼	08/16/19 13:37	08/27/19 00:19	1
Cadmium	0.371		0.134	0.0228	mg/Kg	☼	08/16/19 13:37	08/27/19 00:19	1
Calcium	9320		67.2	12.0	mg/Kg	☼	08/16/19 13:37	08/27/19 00:19	1
Chromium	13.5		0.269	0.112	mg/Kg	☼	08/16/19 13:37	08/27/19 00:19	1
Cobalt	8.43		0.0672	0.0112	mg/Kg	☼	08/16/19 13:37	08/27/19 00:19	1
Copper	17.7		0.269	0.152	mg/Kg	☼	08/16/19 13:37	08/27/19 00:19	1
Lead	17.1		0.134	0.0470	mg/Kg	☼	08/16/19 13:37	08/27/19 00:19	1
Lithium	14.2		0.672	0.371	mg/Kg	☼	08/16/19 13:37	08/27/19 00:19	1
Molybdenum	0.943		0.672	0.219	mg/Kg	☼	08/16/19 13:37	08/27/19 00:19	1
Nickel	18.5		0.134	0.0820	mg/Kg	☼	08/16/19 13:37	08/27/19 00:19	1
Selenium	1.07		0.672	0.164	mg/Kg	☼	08/16/19 13:37	08/27/19 00:19	1
Silver	0.0846	J	0.134	0.0363	mg/Kg	☼	08/16/19 13:37	08/27/19 00:19	1
Thallium	0.315		0.134	0.0336	mg/Kg	☼	08/16/19 13:37	08/27/19 00:19	1
Vanadium	25.9		0.134	0.0860	mg/Kg	☼	08/16/19 13:37	08/27/19 00:19	1
Zinc	59.5		0.672	0.449	mg/Kg	☼	08/16/19 13:37	08/27/19 00:19	1

Method: EPA 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0323	J	0.0430	0.0186	mg/Kg	☼	08/16/19 11:48	08/20/19 10:08	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	29.1		0.1	0.1	%			08/16/19 15:53	1
Percent Solids	70.9		0.1	0.1	%			08/16/19 15:53	1
pH	8.2		0.1	0.1	SU			08/17/19 09:09	1

Method: ASTM D2974 - Moisture, Ash and Organic Matter

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Fractional Organic Carbon	2.8		0.5	0.5	%			08/23/19 13:50	1

Client Sample Results

Client: Stantec Consulting Services Inc
Project/Site: ALF_BS_20190813_1A

Job ID: 180-94096-1

Client Sample ID: ALF-BS-BG04-16.5/18.5-20190813 ~ ALF-BG04

Lab Sample ID: 180-94096-11

Date Collected: 08/13/19 14:51
Date Received: 08/14/19 09:00

Matrix: Solid
Percent Solids: 74.8

Method: EPA 9056A - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		13.0	5.03	mg/Kg	☼		08/22/19 16:22	1
Fluoride	**3.37**		1.30	0.882	mg/Kg	☼		08/22/19 16:22	1
Sulfate	**17.0**		13.0	8.80	mg/Kg	☼		08/22/19 16:22	1

Method: EPA 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.352**		0.270	0.0838	mg/Kg	☼	08/16/19 13:37	08/27/19 01:01	1
Arsenic	**4.65**		0.135	0.0351	mg/Kg	☼	08/16/19 13:37	08/27/19 01:01	1
Barium	**124**		1.35	0.173	mg/Kg	☼	08/16/19 13:37	08/27/19 01:01	1
Beryllium	**0.509**		0.135	0.0101	mg/Kg	☼	08/16/19 13:37	08/27/19 01:01	1
Boron	**5.51**	**J**	10.8	1.82	mg/Kg	☼	08/16/19 13:37	08/27/19 01:01	1
Cadmium	**0.174**		0.135	0.0230	mg/Kg	☼	08/16/19 13:37	08/27/19 01:01	1
Calcium	**9890**		67.6	12.1	mg/Kg	☼	08/16/19 13:37	08/27/19 01:01	1
Chromium	**9.54**		0.270	0.112	mg/Kg	☼	08/16/19 13:37	08/27/19 01:01	1
Cobalt	**4.66**		0.0676	0.0112	mg/Kg	☼	08/16/19 13:37	08/27/19 01:01	1
Copper	**10.7**		0.270	0.153	mg/Kg	☼	08/16/19 13:37	08/27/19 01:01	1
Lead	**9.63**		0.135	0.0473	mg/Kg	☼	08/16/19 13:37	08/27/19 01:01	1
Lithium	**8.42**		0.676	0.373	mg/Kg	☼	08/16/19 13:37	08/27/19 01:01	1
Molybdenum	**0.519**	**J**	0.676	0.220	mg/Kg	☼	08/16/19 13:37	08/27/19 01:01	1
Nickel	**13.3**		0.135	0.0824	mg/Kg	☼	08/16/19 13:37	08/27/19 01:01	1
Selenium	**0.756**		0.676	0.165	mg/Kg	☼	08/16/19 13:37	08/27/19 01:01	1
Silver	**0.0461**	**J**	0.135	0.0365	mg/Kg	☼	08/16/19 13:37	08/27/19 01:01	1
Thallium	**0.417**		0.135	0.0338	mg/Kg	☼	08/16/19 13:37	08/27/19 01:01	1
Vanadium	**16.3**		0.135	0.0865	mg/Kg	☼	08/16/19 13:37	08/27/19 01:01	1
Zinc	**37.2**		0.676	0.451	mg/Kg	☼	08/16/19 13:37	08/27/19 01:01	1

Method: EPA 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0465	0.0201	mg/Kg	☼	08/16/19 11:48	08/20/19 10:09	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**25.2**		0.1	0.1	%			08/16/19 15:53	1
Percent Solids	**74.8**		0.1	0.1	%			08/16/19 15:53	1
pH	**8.1**		0.1	0.1	SU			08/17/19 09:09	1

Method: ASTM D2974 - Moisture, Ash and Organic Matter

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Fractional Organic Carbon	**1.5**		0.5	0.5	%			08/23/19 13:50	1

Client Sample Results

Client: Stantec Consulting Services Inc
Project/Site: ALF_BS_20190813_1A

Job ID: 180-94096-1

Client Sample ID: ALF-BS-BG04-21.5/23.5-20190813 ~ ALF-BG04

Lab Sample ID: 180-94096-12

Date Collected: 08/13/19 15:14
Date Received: 08/14/19 09:00

Matrix: Solid
Percent Solids: 82.1

Method: EPA 9056A - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		11.9	4.60	mg/Kg	☼		08/22/19 16:37	1
Fluoride	**0.885**	**J**	1.19	0.807	mg/Kg	☼		08/22/19 16:37	1
Sulfate	ND		11.9	8.06	mg/Kg	☼		08/22/19 16:37	1

Method: EPA 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.0903**	**J**	0.244	0.0755	mg/Kg	☼	08/16/19 13:37	08/27/19 01:06	1
Arsenic	**1.86**		0.122	0.0317	mg/Kg	☼	08/16/19 13:37	08/27/19 01:06	1
Barium	**30.2**		1.22	0.156	mg/Kg	☼	08/16/19 13:37	08/27/19 01:06	1
Beryllium	**0.155**		0.122	0.00914	mg/Kg	☼	08/16/19 13:37	08/27/19 01:06	1
Boron	ND		9.75	1.64	mg/Kg	☼	08/16/19 13:37	08/27/19 01:06	1
Cadmium	**0.0609**	**J**	0.122	0.0207	mg/Kg	☼	08/16/19 13:37	08/27/19 01:06	1
Calcium	**2870**		60.9	10.9	mg/Kg	☼	08/16/19 13:37	08/27/19 01:06	1
Chromium	**3.61**		0.244	0.101	mg/Kg	☼	08/16/19 13:37	08/27/19 01:06	1
Cobalt	**2.87**		0.0609	0.0101	mg/Kg	☼	08/16/19 13:37	08/27/19 01:06	1
Copper	**1.39**		0.244	0.138	mg/Kg	☼	08/16/19 13:37	08/27/19 01:06	1
Lead	**3.28**		0.122	0.0426	mg/Kg	☼	08/16/19 13:37	08/27/19 01:06	1
Lithium	**2.73**		0.609	0.336	mg/Kg	☼	08/16/19 13:37	08/27/19 01:06	1
Molybdenum	**0.249**	**J**	0.609	0.199	mg/Kg	☼	08/16/19 13:37	08/27/19 01:06	1
Nickel	**6.79**		0.122	0.0743	mg/Kg	☼	08/16/19 13:37	08/27/19 01:06	1
Selenium	**0.432**	**J**	0.609	0.149	mg/Kg	☼	08/16/19 13:37	08/27/19 01:06	1
Silver	ND		0.122	0.0329	mg/Kg	☼	08/16/19 13:37	08/27/19 01:06	1
Thallium	**0.127**		0.122	0.0305	mg/Kg	☼	08/16/19 13:37	08/27/19 01:06	1
Vanadium	**5.57**		0.122	0.0780	mg/Kg	☼	08/16/19 13:37	08/27/19 01:06	1
Zinc	**14.9**		0.609	0.407	mg/Kg	☼	08/16/19 13:37	08/27/19 01:06	1

Method: EPA 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0284	0.0123	mg/Kg	☼	08/16/19 11:48	08/20/19 10:10	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**17.9**		0.1	0.1	%			08/16/19 15:53	1
Percent Solids	**82.1**		0.1	0.1	%			08/16/19 15:53	1
pH	**8.1**		0.1	0.1	SU			08/23/19 10:20	1

Method: ASTM D2974 - Moisture, Ash and Organic Matter

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Fractional Organic Carbon	**0.9**		0.5	0.5	%			08/23/19 13:50	1

Client Sample Results

Client: Stantec Consulting Services Inc
Project/Site: ALF_BS_20190813_1A

Job ID: 180-94096-1

Client Sample ID: ALF-BS-BG04-26.5/28.5-20190813 ~ ALF-BG04

Lab Sample ID: 180-94096-13

Date Collected: 08/13/19 15:35
Date Received: 08/14/19 09:00

Matrix: Solid
Percent Solids: 75.2

Method: EPA 9056A - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		13.1	5.07	mg/Kg	☼		08/22/19 17:22	1
Fluoride	**0.966**	**J**	1.31	0.888	mg/Kg	☼		08/22/19 17:22	1
Sulfate	ND		13.1	8.86	mg/Kg	☼		08/22/19 17:22	1

Method: EPA 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.0822**	**J**	0.256	0.0792	mg/Kg	☼	08/16/19 13:37	08/27/19 01:11	1
Arsenic	**1.65**		0.128	0.0332	mg/Kg	☼	08/16/19 13:37	08/27/19 01:11	1
Barium	**34.8**		1.28	0.164	mg/Kg	☼	08/16/19 13:37	08/27/19 01:11	1
Beryllium	**0.195**		0.128	0.00959	mg/Kg	☼	08/16/19 13:37	08/27/19 01:11	1
Boron	ND		10.2	1.73	mg/Kg	☼	08/16/19 13:37	08/27/19 01:11	1
Cadmium	**0.0934**	**J**	0.128	0.0217	mg/Kg	☼	08/16/19 13:37	08/27/19 01:11	1
Calcium	**3250**		63.9	11.4	mg/Kg	☼	08/16/19 13:37	08/27/19 01:11	1
Chromium	**4.13**		0.256	0.106	mg/Kg	☼	08/16/19 13:37	08/27/19 01:11	1
Cobalt	**3.50**		0.0639	0.0106	mg/Kg	☼	08/16/19 13:37	08/27/19 01:11	1
Copper	**1.76**		0.256	0.144	mg/Kg	☼	08/16/19 13:37	08/27/19 01:11	1
Lead	**4.16**		0.128	0.0447	mg/Kg	☼	08/16/19 13:37	08/27/19 01:11	1
Lithium	**2.81**		0.639	0.353	mg/Kg	☼	08/16/19 13:37	08/27/19 01:11	1
Molybdenum	**0.311**	**J**	0.639	0.208	mg/Kg	☼	08/16/19 13:37	08/27/19 01:11	1
Nickel	**8.05**		0.128	0.0780	mg/Kg	☼	08/16/19 13:37	08/27/19 01:11	1
Selenium	**0.442**	**J**	0.639	0.156	mg/Kg	☼	08/16/19 13:37	08/27/19 01:11	1
Silver	ND		0.128	0.0345	mg/Kg	☼	08/16/19 13:37	08/27/19 01:11	1
Thallium	**0.101**	**J**	0.128	0.0320	mg/Kg	☼	08/16/19 13:37	08/27/19 01:11	1
Vanadium	**6.01**		0.128	0.0818	mg/Kg	☼	08/16/19 13:37	08/27/19 01:11	1
Zinc	**16.4**		0.639	0.427	mg/Kg	☼	08/16/19 13:37	08/27/19 01:11	1

Method: EPA 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0381	0.0165	mg/Kg	☼	08/16/19 11:48	08/20/19 10:11	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**24.8**		0.1	0.1	%			08/16/19 15:53	1
Percent Solids	**75.2**		0.1	0.1	%			08/16/19 15:53	1
pH	**8.3**		0.1	0.1	SU			08/23/19 10:20	1

Method: ASTM D2974 - Moisture, Ash and Organic Matter

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Fractional Organic Carbon	**0.5**		0.5	0.5	%			08/23/19 13:50	1

Client Sample Results

Client: Stantec Consulting Services Inc
Project/Site: ALF_BS_20190813_1A

Job ID: 180-94096-1

Client Sample ID: ALF-BS-BG04-31.5/33.5-20190813 ~ ALF-BG04

Lab Sample ID: 180-94096-14

Date Collected: 08/13/19 15:56
Date Received: 08/14/19 09:00

Matrix: Solid
Percent Solids: 74.0

Method: EPA 9056A - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		13.3	5.17	mg/Kg	☼		08/22/19 17:37	1
Fluoride	**1.26**	**J**	1.33	0.906	mg/Kg	☼		08/22/19 17:37	1
Sulfate	ND		13.3	9.05	mg/Kg	☼		08/22/19 17:37	1

Method: EPA 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.129**	**J**	0.282	0.0873	mg/Kg	☼	08/16/19 13:40	08/28/19 01:08	1
Arsenic	**2.21**		0.141	0.0366	mg/Kg	☼	08/16/19 13:40	08/28/19 01:08	1
Barium	**47.3**		1.41	0.180	mg/Kg	☼	08/16/19 13:40	08/28/19 01:08	1
Beryllium	**0.298**	**B**	0.141	0.0106	mg/Kg	☼	08/16/19 13:40	08/28/19 01:08	1
Boron	**2.62**	**J**	11.3	1.90	mg/Kg	☼	08/16/19 13:40	08/28/19 01:08	1
Cadmium	**0.172**		0.141	0.0239	mg/Kg	☼	08/16/19 13:40	08/28/19 01:08	1
Calcium	**5470**		70.4	12.6	mg/Kg	☼	08/16/19 13:40	08/28/19 01:08	1
Chromium	**6.65**		0.282	0.117	mg/Kg	☼	08/16/19 13:40	08/28/19 01:08	1
Cobalt	**5.01**		0.0704	0.0117	mg/Kg	☼	08/16/19 13:40	08/28/19 01:08	1
Copper	**4.31**		0.282	0.159	mg/Kg	☼	08/16/19 13:40	08/28/19 01:08	1
Lead	**7.01**		0.141	0.0493	mg/Kg	☼	08/16/19 13:40	08/28/19 01:08	1
Lithium	**4.49**		0.704	0.389	mg/Kg	☼	08/16/19 13:40	08/28/19 01:08	1
Molybdenum	**0.404**	**J**	0.704	0.229	mg/Kg	☼	08/16/19 13:40	08/28/19 01:08	1
Nickel	**14.6**		0.141	0.0859	mg/Kg	☼	08/16/19 13:40	08/28/19 01:08	1
Selenium	**0.732**		0.704	0.172	mg/Kg	☼	08/16/19 13:40	08/28/19 01:08	1
Silver	ND		0.141	0.0380	mg/Kg	☼	08/16/19 13:40	08/28/19 01:08	1
Thallium	**0.0990**	**J B**	0.141	0.0352	mg/Kg	☼	08/16/19 13:40	08/28/19 01:08	1
Vanadium	**9.28**		0.141	0.0901	mg/Kg	☼	08/16/19 13:40	08/28/19 01:08	1
Zinc	**21.6**		0.704	0.470	mg/Kg	☼	08/16/19 13:40	08/28/19 01:08	1

Method: EPA 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0432	0.0187	mg/Kg	☼	08/16/19 11:48	08/20/19 10:12	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**26.0**		0.1	0.1	%			08/16/19 15:53	1
Percent Solids	**74.0**		0.1	0.1	%			08/16/19 15:53	1
pH	**8.4**		0.1	0.1	SU			08/23/19 10:20	1

Method: ASTM D2974 - Moisture, Ash and Organic Matter

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Fractional Organic Carbon	**0.8**		0.5	0.5	%			08/23/19 13:50	1

Client Sample Results

Client: Stantec Consulting Services Inc
Project/Site: ALF_BS_20190813_1A

Job ID: 180-94096-1

Client Sample ID: ALF-BS-BG04-36.5/38.5-20190813 ~ ALF-BG04

Lab Sample ID: 180-94096-15

Date Collected: 08/13/19 16:19
Date Received: 08/14/19 09:00

Matrix: Solid
Percent Solids: 81.6

Method: EPA 9056A - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		12.1	4.70	mg/Kg	☼		08/22/19 17:52	1
Fluoride	ND		1.21	0.824	mg/Kg	☼		08/22/19 17:52	1
Sulfate	**10.3**	**J**	12.1	8.23	mg/Kg	☼		08/22/19 17:52	1

Method: EPA 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.243	0.0753	mg/Kg	☼	08/16/19 13:40	08/28/19 00:44	1
Arsenic	**2.94**		0.121	0.0316	mg/Kg	☼	08/16/19 13:40	08/28/19 00:44	1
Barium	**30.4**		1.21	0.155	mg/Kg	☼	08/16/19 13:40	08/28/19 00:44	1
Beryllium	**0.185**	**B**	0.121	0.00910	mg/Kg	☼	08/16/19 13:40	08/28/19 00:44	1
Boron	ND		9.71	1.64	mg/Kg	☼	08/16/19 13:40	08/28/19 00:44	1
Cadmium	**0.0490**	**J**	0.121	0.0206	mg/Kg	☼	08/16/19 13:40	08/28/19 00:44	1
Calcium	**2550**		60.7	10.9	mg/Kg	☼	08/16/19 13:40	08/28/19 00:44	1
Chromium	**3.54**		0.243	0.101	mg/Kg	☼	08/16/19 13:40	08/28/19 00:44	1
Cobalt	**2.91**		0.0607	0.0101	mg/Kg	☼	08/16/19 13:40	08/28/19 00:44	1
Copper	**1.39**		0.243	0.137	mg/Kg	☼	08/16/19 13:40	08/28/19 00:44	1
Lead	**3.03**		0.121	0.0425	mg/Kg	☼	08/16/19 13:40	08/28/19 00:44	1
Lithium	**2.76**		0.607	0.335	mg/Kg	☼	08/16/19 13:40	08/28/19 00:44	1
Molybdenum	**0.251**	**J**	0.607	0.198	mg/Kg	☼	08/16/19 13:40	08/28/19 00:44	1
Nickel	**7.28**		0.121	0.0740	mg/Kg	☼	08/16/19 13:40	08/28/19 00:44	1
Selenium	**0.382**	**J**	0.607	0.148	mg/Kg	☼	08/16/19 13:40	08/28/19 00:44	1
Silver	ND		0.121	0.0328	mg/Kg	☼	08/16/19 13:40	08/28/19 00:44	1
Thallium	**0.298**	**B**	0.121	0.0303	mg/Kg	☼	08/16/19 13:40	08/28/19 00:44	1
Vanadium	**5.44**		0.121	0.0777	mg/Kg	☼	08/16/19 13:40	08/28/19 00:44	1
Zinc	**13.9**		0.607	0.405	mg/Kg	☼	08/16/19 13:40	08/28/19 00:44	1

Method: EPA 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0362	0.0157	mg/Kg	☼	08/16/19 11:48	08/20/19 10:12	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**18.4**		0.1	0.1	%			08/16/19 15:53	1
Percent Solids	**81.6**		0.1	0.1	%			08/16/19 15:53	1
pH	**8.3**		0.1	0.1	SU			08/23/19 10:20	1

Method: ASTM D2974 - Moisture, Ash and Organic Matter

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Fractional Organic Carbon	**0.6**		0.5	0.5	%			08/23/19 13:50	1

QC Sample Results

Client: Stantec Consulting Services Inc
Project/Site: ALF_BS_20190813_1A

Job ID: 180-94096-1

Method: EPA 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 180-289192/6
Matrix: Water
Analysis Batch: 289192

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		1.00	0.715	mg/L			08/24/19 08:44	1
Fluoride	ND		0.100	0.0263	mg/L			08/24/19 08:44	1
Sulfate	ND		1.00	0.380	mg/L			08/24/19 08:44	1

Lab Sample ID: LCS 180-289192/5
Matrix: Water
Analysis Batch: 289192

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	25.0	24.53		mg/L		98	80 - 120
Fluoride	1.25	1.269		mg/L		102	80 - 120
Sulfate	25.0	24.35		mg/L		97	80 - 120

Lab Sample ID: 180-94072-A-1 MS
Matrix: Water
Analysis Batch: 289192

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	25.8		25.0	49.58		mg/L		95	80 - 120
Fluoride	0.0586	J	1.25	1.260		mg/L		96	80 - 120
Sulfate	4.63		25.0	28.77		mg/L		97	80 - 120

Lab Sample ID: 180-94072-A-1 MSD
Matrix: Water
Analysis Batch: 289192

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	25.8		25.0	48.74		mg/L		92	80 - 120	2	15
Fluoride	0.0586	J	1.25	1.251		mg/L		95	80 - 120	1	15
Sulfate	4.63		25.0	27.98		mg/L		93	80 - 120	3	15

Lab Sample ID: MB 180-288711/1-A
Matrix: Solid
Analysis Batch: 288964

Client Sample ID: Method Blank
Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		10.0	3.88	mg/Kg			08/23/19 02:34	1
Fluoride	ND		1.00	0.680	mg/Kg			08/23/19 02:34	1
Sulfate	ND		10.0	6.79	mg/Kg			08/23/19 02:34	1

Lab Sample ID: LCS 180-288711/2-A
Matrix: Solid
Analysis Batch: 288964

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	250	274.7		mg/Kg		110	80 - 120
Fluoride	12.5	13.50		mg/Kg		108	80 - 120
Sulfate	250	232.1		mg/Kg		93	80 - 120

Method: EPA 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: 180-94096-6 MS — **Client Sample ID: ALF-BS-BG05-0.0/0.5-20190813 ~ ALF-BG05**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 288964

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	ND		313	360.9		mg/Kg	☼	115	80 - 120
Fluoride	4.39	F1	15.6	10.87	F1	mg/Kg	☼	41	80 - 120
Sulfate	49.9		313	345.6		mg/Kg	☼	94	80 - 120

Lab Sample ID: 180-94096-6 MSD — **Client Sample ID: ALF-BS-BG05-0.0/0.5-20190813 ~ ALF-BG05**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 288964

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	ND		317	339.3		mg/Kg	☼	107	80 - 120	6	15
Fluoride	4.39	F1	15.8	11.17	F1	mg/Kg	☼	43	80 - 120	3	15
Sulfate	49.9		317	337.4		mg/Kg	☼	91	80 - 120	2	15

Method: EPA 6020A - Metals (ICP/MS)

Lab Sample ID: MB 180-288386/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 289472 — **Prep Batch: 288386**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.200	0.0620	mg/Kg		08/16/19 13:37	08/26/19 22:46	1
Arsenic	ND		0.100	0.0260	mg/Kg		08/16/19 13:37	08/26/19 22:46	1
Barium	ND		1.00	0.128	mg/Kg		08/16/19 13:37	08/26/19 22:46	1
Beryllium	ND		0.100	0.00750	mg/Kg		08/16/19 13:37	08/26/19 22:46	1
Boron	ND		8.00	1.35	mg/Kg		08/16/19 13:37	08/26/19 22:46	1
Cadmium	ND		0.100	0.0170	mg/Kg		08/16/19 13:37	08/26/19 22:46	1
Calcium	ND		50.0	8.95	mg/Kg		08/16/19 13:37	08/26/19 22:46	1
Chromium	ND		0.200	0.0830	mg/Kg		08/16/19 13:37	08/26/19 22:46	1
Cobalt	ND		0.0500	0.00830	mg/Kg		08/16/19 13:37	08/26/19 22:46	1
Copper	ND		0.200	0.113	mg/Kg		08/16/19 13:37	08/26/19 22:46	1
Lead	ND		0.100	0.0350	mg/Kg		08/16/19 13:37	08/26/19 22:46	1
Lithium	ND		0.500	0.276	mg/Kg		08/16/19 13:37	08/26/19 22:46	1
Molybdenum	ND		0.500	0.163	mg/Kg		08/16/19 13:37	08/26/19 22:46	1
Nickel	ND		0.100	0.0610	mg/Kg		08/16/19 13:37	08/26/19 22:46	1
Selenium	ND		0.500	0.122	mg/Kg		08/16/19 13:37	08/26/19 22:46	1
Silver	ND		0.100	0.0270	mg/Kg		08/16/19 13:37	08/26/19 22:46	1
Thallium	ND		0.100	0.0250	mg/Kg		08/16/19 13:37	08/26/19 22:46	1
Vanadium	ND		0.100	0.0640	mg/Kg		08/16/19 13:37	08/26/19 22:46	1
Zinc	ND		0.500	0.334	mg/Kg		08/16/19 13:37	08/26/19 22:46	1

Lab Sample ID: LCS 180-288386/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 289472 — **Prep Batch: 288386**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	25.0	22.89		mg/Kg		92	80 - 120
Arsenic	100	90.15		mg/Kg		90	80 - 120
Barium	100	87.07		mg/Kg		87	80 - 120
Beryllium	50.0	48.45		mg/Kg		97	80 - 120

Method: EPA 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 180-288386/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 289472 — **Prep Batch: 288386**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	125	121.8		mg/Kg		97	80 - 120
Cadmium	50.0	52.65		mg/Kg		105	80 - 120
Calcium	2500	2418		mg/Kg		97	80 - 120
Chromium	50.0	45.37		mg/Kg		91	80 - 120
Cobalt	50.0	45.93		mg/Kg		92	80 - 120
Copper	50.0	44.90		mg/Kg		90	80 - 120
Lead	50.0	53.10		mg/Kg		106	80 - 120
Lithium	50.0	43.61		mg/Kg		87	80 - 120
Molybdenum	50.0	52.04		mg/Kg		104	80 - 120
Nickel	50.0	46.98		mg/Kg		94	80 - 120
Selenium	100	81.80		mg/Kg		82	80 - 120
Silver	25.0	22.89		mg/Kg		92	80 - 120
Thallium	100	103.9		mg/Kg		104	80 - 120
Vanadium	50.0	42.02		mg/Kg		84	80 - 120
Zinc	25.0	22.11		mg/Kg		88	80 - 120

Lab Sample ID: 180-94096-6 MS — **Client Sample ID: ALF-BS-BG05-0.0/0.5-20190813 ~ ALF-BG05**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 289472 — **Prep Batch: 288386**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.392	F1	32.1	19.63	F1	mg/Kg	☼	60	75 - 125
Arsenic	6.04		128	122.1		mg/Kg	☼	90	75 - 125
Barium	136		128	245.1		mg/Kg	☼	85	75 - 125
Beryllium	0.462		64.2	61.09		mg/Kg	☼	94	75 - 125
Boron	4.84	J	160	150.3		mg/Kg	☼	91	75 - 125
Cadmium	0.424		64.2	61.26		mg/Kg	☼	95	75 - 125
Calcium	3100		3210	5934		mg/Kg	☼	88	75 - 125
Chromium	13.7		64.2	75.42		mg/Kg	☼	96	75 - 125
Cobalt	5.54		64.2	63.98		mg/Kg	☼	91	75 - 125
Copper	18.6		64.2	82.71		mg/Kg	☼	100	75 - 125
Lead	28.4		64.2	89.27		mg/Kg	☼	95	75 - 125
Lithium	7.54		64.2	66.66		mg/Kg	☼	92	75 - 125
Molybdenum	0.819		64.2	57.71		mg/Kg	☼	89	75 - 125
Nickel	13.0		64.2	74.72		mg/Kg	☼	96	75 - 125
Selenium	0.945		128	103.3		mg/Kg	☼	80	75 - 125
Silver	0.592		32.1	27.54		mg/Kg	☼	84	75 - 125
Thallium	0.211		128	123.2		mg/Kg	☼	96	75 - 125
Vanadium	17.8		64.2	79.42		mg/Kg	☼	96	75 - 125
Zinc	63.2	F1	32.1	103.6	F1	mg/Kg	☼	126	75 - 125

Lab Sample ID: 180-94096-6 MSD — **Client Sample ID: ALF-BS-BG05-0.0/0.5-20190813 ~ ALF-BG05**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 289472 — **Prep Batch: 288386**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	0.392	F1	32.7	20.17	F1	mg/Kg	☼	60	75 - 125	3	20
Arsenic	6.04		131	130.5		mg/Kg	☼	95	75 - 125	7	20
Barium	136		131	248.5		mg/Kg	☼	86	75 - 125	1	20

Method: EPA 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: 180-94096-6 MSD — **Client Sample ID: ALF-BS-BG05-0.0/0.5-20190813 ~ ALF-BG05**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 289472 — **Prep Batch: 288386**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Beryllium	0.462		65.5	60.99		mg/Kg	☼	92	75 - 125	0	20
Boron	4.84	J	164	151.4		mg/Kg	☼	90	75 - 125	1	20
Cadmium	0.424		65.5	61.51		mg/Kg	☼	93	75 - 125	0	20
Calcium	3100		3270	5896		mg/Kg	☼	85	75 - 125	1	20
Chromium	13.7		65.5	80.65		mg/Kg	☼	102	75 - 125	7	20
Cobalt	5.54		65.5	68.72		mg/Kg	☼	96	75 - 125	7	20
Copper	18.6		65.5	87.81		mg/Kg	☼	106	75 - 125	6	20
Lead	28.4		65.5	92.23		mg/Kg	☼	97	75 - 125	3	20
Lithium	7.54		65.5	68.14		mg/Kg	☼	93	75 - 125	2	20
Molybdenum	0.819		65.5	58.59		mg/Kg	☼	88	75 - 125	2	20
Nickel	13.0		65.5	79.92		mg/Kg	☼	102	75 - 125	7	20
Selenium	0.945		131	113.6		mg/Kg	☼	86	75 - 125	10	20
Silver	0.592		32.7	27.97		mg/Kg	☼	84	75 - 125	2	20
Thallium	0.211		131	126.6		mg/Kg	☼	96	75 - 125	3	20
Vanadium	17.8		65.5	84.67		mg/Kg	☼	102	75 - 125	6	20
Zinc	63.2	F1	32.7	106.3	F1	mg/Kg	☼	132	75 - 125	3	20

Lab Sample ID: MB 180-288387/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 289611 — **Prep Batch: 288387**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.200	0.0620	mg/Kg		08/16/19 13:40	08/28/19 00:35	1
Arsenic	ND		0.100	0.0260	mg/Kg		08/16/19 13:40	08/28/19 00:35	1
Barium	ND		1.00	0.128	mg/Kg		08/16/19 13:40	08/28/19 00:35	1
Beryllium	0.01330	J	0.100	0.00750	mg/Kg		08/16/19 13:40	08/28/19 00:35	1
Boron	ND		8.00	1.35	mg/Kg		08/16/19 13:40	08/28/19 00:35	1
Cadmium	ND		0.100	0.0170	mg/Kg		08/16/19 13:40	08/28/19 00:35	1
Calcium	ND		50.0	8.95	mg/Kg		08/16/19 13:40	08/28/19 00:35	1
Chromium	ND		0.200	0.0830	mg/Kg		08/16/19 13:40	08/28/19 00:35	1
Cobalt	ND		0.0500	0.00830	mg/Kg		08/16/19 13:40	08/28/19 00:35	1
Copper	ND		0.200	0.113	mg/Kg		08/16/19 13:40	08/28/19 00:35	1
Lead	ND		0.100	0.0350	mg/Kg		08/16/19 13:40	08/28/19 00:35	1
Lithium	ND		0.500	0.276	mg/Kg		08/16/19 13:40	08/28/19 00:35	1
Molybdenum	ND		0.500	0.163	mg/Kg		08/16/19 13:40	08/28/19 00:35	1
Nickel	ND		0.100	0.0610	mg/Kg		08/16/19 13:40	08/28/19 00:35	1
Selenium	ND		0.500	0.122	mg/Kg		08/16/19 13:40	08/28/19 00:35	1
Silver	ND		0.100	0.0270	mg/Kg		08/16/19 13:40	08/28/19 00:35	1
Thallium	0.07610	J	0.100	0.0250	mg/Kg		08/16/19 13:40	08/28/19 00:35	1
Vanadium	ND		0.100	0.0640	mg/Kg		08/16/19 13:40	08/28/19 00:35	1
Zinc	ND		0.500	0.334	mg/Kg		08/16/19 13:40	08/28/19 00:35	1

Lab Sample ID: LCS 180-288387/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 289611 — **Prep Batch: 288387**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	25.0	22.73		mg/Kg		91	80 - 120
Arsenic	100	91.78		mg/Kg		92	80 - 120

Method: EPA 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 180-288387/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 289611 — **Prep Batch: 288387**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Barium	100	91.29		mg/Kg		91	80 - 120
Beryllium	50.0	47.12		mg/Kg		94	80 - 120
Boron	125	125.4		mg/Kg		100	80 - 120
Cadmium	50.0	49.49		mg/Kg		99	80 - 120
Calcium	2500	2446		mg/Kg		98	80 - 120
Chromium	50.0	50.96		mg/Kg		102	80 - 120
Cobalt	50.0	44.06		mg/Kg		88	80 - 120
Copper	50.0	47.09		mg/Kg		94	80 - 120
Lead	50.0	50.87		mg/Kg		102	80 - 120
Lithium	50.0	49.85		mg/Kg		100	80 - 120
Molybdenum	50.0	50.89		mg/Kg		102	80 - 120
Nickel	50.0	45.75		mg/Kg		92	80 - 120
Selenium	100	83.33		mg/Kg		83	80 - 120
Silver	25.0	25.06		mg/Kg		100	80 - 120
Thallium	100	105.0		mg/Kg		105	80 - 120
Vanadium	50.0	48.10		mg/Kg		96	80 - 120
Zinc	25.0	21.07		mg/Kg		84	80 - 120

Lab Sample ID: 180-94096-14 MS — **Client Sample ID: ALF-BS-BG04-31.5/33.5-20190813 ~ ALF-BG04**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 289611 — **Prep Batch: 288387**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.129	J	32.5	24.88		mg/Kg	☼	76	75 - 125
Arsenic	2.21		130	108.7		mg/Kg	☼	82	75 - 125
Barium	47.3		130	155.4		mg/Kg	☼	83	75 - 125
Beryllium	0.298	B	65.0	56.26		mg/Kg	☼	86	75 - 125
Boron	2.62	J	162	149.7		mg/Kg	☼	91	75 - 125
Cadmium	0.172		65.0	61.93		mg/Kg	☼	95	75 - 125
Calcium	5470		3250	8435		mg/Kg	☼	91	75 - 125
Chromium	6.65		65.0	69.93		mg/Kg	☼	97	75 - 125
Cobalt	5.01		65.0	68.41		mg/Kg	☼	98	75 - 125
Copper	4.31		65.0	58.13		mg/Kg	☼	83	75 - 125
Lead	7.01		65.0	69.63		mg/Kg	☼	96	75 - 125
Lithium	4.49		65.0	64.60		mg/Kg	☼	93	75 - 125
Molybdenum	0.404	J	65.0	61.11		mg/Kg	☼	93	75 - 125
Nickel	14.6		65.0	80.41		mg/Kg	☼	101	75 - 125
Selenium	0.732		130	113.4		mg/Kg	☼	87	75 - 125
Silver	ND		32.5	31.27		mg/Kg	☼	96	75 - 125
Thallium	0.0990	J B	130	125.6		mg/Kg	☼	97	75 - 125
Vanadium	9.28		65.0	70.86		mg/Kg	☼	95	75 - 125
Zinc	21.6		32.5	56.22		mg/Kg	☼	107	75 - 125

Lab Sample ID: 180-94096-14 MSD — **Client Sample ID: ALF-BS-BG04-31.5/33.5-20190813 ~ ALF-BG04**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 289611 — **Prep Batch: 288387**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	0.129	J	34.5	26.23		mg/Kg	☼	76	75 - 125	5	20

Method: EPA 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: 180-94096-14 MSD — **Client Sample ID: ALF-BS-BG04-31.5/33.5-20190813 ~ ALF-BG04**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 289611 — **Prep Batch: 288387**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	2.21		138	113.7		mg/Kg	☼	81	75 - 125	5	20
Barium	47.3		138	165.4		mg/Kg	☼	86	75 - 125	6	20
Beryllium	0.298	B	69.0	59.95		mg/Kg	☼	87	75 - 125	6	20
Boron	2.62	J	172	158.1		mg/Kg	☼	90	75 - 125	5	20
Cadmium	0.172		69.0	66.79		mg/Kg	☼	97	75 - 125	8	20
Calcium	5470		3450	8610		mg/Kg	☼	91	75 - 125	2	20
Chromium	6.65		69.0	70.81		mg/Kg	☼	93	75 - 125	1	20
Cobalt	5.01		69.0	70.42		mg/Kg	☼	95	75 - 125	3	20
Copper	4.31		69.0	59.87		mg/Kg	☼	81	75 - 125	3	20
Lead	7.01		69.0	73.10		mg/Kg	☼	96	75 - 125	5	20
Lithium	4.49		69.0	68.68		mg/Kg	☼	93	75 - 125	6	20
Molybdenum	0.404	J	69.0	65.66		mg/Kg	☼	95	75 - 125	7	20
Nickel	14.6		69.0	81.88		mg/Kg	☼	98	75 - 125	2	20
Selenium	0.732		138	116.0		mg/Kg	☼	84	75 - 125	2	20
Silver	ND		34.5	33.35		mg/Kg	☼	97	75 - 125	6	20
Thallium	0.0990	J B	138	135.2		mg/Kg	☼	98	75 - 125	7	20
Vanadium	9.28		69.0	70.66		mg/Kg	☼	89	75 - 125	0	20
Zinc	21.6		34.5	55.53		mg/Kg	☼	98	75 - 125	1	20

Lab Sample ID: MB 180-288363/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 289198 — **Prep Batch: 288363**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.00200	0.000378	mg/L		08/16/19 12:00	08/23/19 16:35	1
Arsenic	ND		0.00100	0.000323	mg/L		08/16/19 12:00	08/23/19 16:35	1
Barium	ND		0.0100	0.00160	mg/L		08/16/19 12:00	08/23/19 16:35	1
Beryllium	ND		0.00100	0.000182	mg/L		08/16/19 12:00	08/23/19 16:35	1
Boron	ND		0.0800	0.0386	mg/L		08/16/19 12:00	08/23/19 16:35	1
Cadmium	ND		0.00100	0.000125	mg/L		08/16/19 12:00	08/23/19 16:35	1
Calcium	ND		0.500	0.127	mg/L		08/16/19 12:00	08/23/19 16:35	1
Chromium	ND		0.00200	0.00153	mg/L		08/16/19 12:00	08/23/19 16:35	1
Cobalt	ND		0.000500	0.0000750	mg/L		08/16/19 12:00	08/23/19 16:35	1
Copper	ND		0.00200	0.000627	mg/L		08/16/19 12:00	08/23/19 16:35	1
Lead	ND		0.00100	0.000128	mg/L		08/16/19 12:00	08/23/19 16:35	1
Lithium	ND		0.00500	0.00339	mg/L		08/16/19 12:00	08/23/19 16:35	1
Molybdenum	ND		0.00500	0.000610	mg/L		08/16/19 12:00	08/23/19 16:35	1
Nickel	ND		0.00100	0.000336	mg/L		08/16/19 12:00	08/23/19 16:35	1
Selenium	ND		0.00500	0.00151	mg/L		08/16/19 12:00	08/23/19 16:35	1
Silver	ND		0.00100	0.000177	mg/L		08/16/19 12:00	08/23/19 16:35	1
Thallium	ND		0.00100	0.000148	mg/L		08/16/19 12:00	08/23/19 16:35	1
Vanadium	ND		0.00100	0.000991	mg/L		08/16/19 12:00	08/23/19 16:35	1
Zinc	ND		0.00500	0.00322	mg/L		08/16/19 12:00	08/23/19 16:35	1

Method: EPA 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 180-288363/2-A
Matrix: Water
Analysis Batch: 289198

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 288363

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.250	0.2501		mg/L		100	80 - 120
Arsenic	1.00	0.9706		mg/L		97	80 - 120
Barium	1.00	0.9815		mg/L		98	80 - 120
Beryllium	0.500	0.5290		mg/L		106	80 - 120
Boron	1.25	1.278		mg/L		102	80 - 120
Cadmium	0.500	0.5056		mg/L		101	80 - 120
Calcium	25.0	25.87		mg/L		103	80 - 120
Chromium	0.500	0.5024		mg/L		100	80 - 120
Cobalt	0.500	0.4839		mg/L		97	80 - 120
Copper	0.500	0.4771		mg/L		95	80 - 120
Lead	0.500	0.5233		mg/L		105	80 - 120
Lithium	0.500	0.4599		mg/L		92	80 - 120
Molybdenum	0.500	0.5109		mg/L		102	80 - 120
Nickel	0.500	0.4810		mg/L		96	80 - 120
Selenium	1.00	0.9853		mg/L		99	80 - 120
Silver	0.250	0.2478		mg/L		99	80 - 120
Thallium	1.00	1.061		mg/L		106	80 - 120
Vanadium	0.500	0.5035		mg/L		101	80 - 120
Zinc	0.250	0.2458		mg/L		98	80 - 120

Lab Sample ID: 180-94014-B-1-C MS
Matrix: Water
Analysis Batch: 289198

Client Sample ID: Matrix Spike
Prep Type: Total Recoverable
Prep Batch: 288363

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.000410	J	0.250	0.2671		mg/L		107	75 - 125
Arsenic	0.00117		1.00	1.070		mg/L		107	75 - 125
Barium	0.0343		1.00	1.078		mg/L		104	75 - 125
Beryllium	0.000424	J	0.500	0.5474		mg/L		109	75 - 125
Boron	0.0743	J	1.25	1.360		mg/L		103	75 - 125
Cadmium	0.000403	J	0.500	0.5312		mg/L		106	75 - 125
Calcium	48.4		25.0	76.05		mg/L		110	75 - 125
Chromium	0.00389		0.500	0.5286		mg/L		105	75 - 125
Cobalt	0.000324	J	0.500	0.5235		mg/L		105	75 - 125
Copper	0.00656		0.500	0.5212		mg/L		103	75 - 125
Lead	0.000562	J	0.500	0.5453		mg/L		109	75 - 125
Lithium	0.00515		0.500	0.5150		mg/L		102	75 - 125
Molybdenum	ND		0.500	0.5534		mg/L		111	75 - 125
Nickel	0.00842		0.500	0.5221		mg/L		103	75 - 125
Selenium	ND		1.00	1.023		mg/L		102	75 - 125
Silver	ND		0.250	0.2640		mg/L		106	75 - 125
Thallium	0.000209	J	1.00	1.103		mg/L		110	75 - 125
Vanadium	0.00137		0.500	0.5305		mg/L		106	75 - 125
Zinc	0.0614		0.250	0.3257		mg/L		106	75 - 125

Method: EPA 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: 180-94014-B-1-D MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 289198 — **Prep Batch: 288363**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	0.000410	J	0.250	0.2624		mg/L		105	75 - 125	2	20
Arsenic	0.00117		1.00	1.055		mg/L		105	75 - 125	1	20
Barium	0.0343		1.00	1.062		mg/L		103	75 - 125	2	20
Beryllium	0.000424	J	0.500	0.5520		mg/L		110	75 - 125	1	20
Boron	0.0743	J	1.25	1.390		mg/L		105	75 - 125	2	20
Cadmium	0.000403	J	0.500	0.5244		mg/L		105	75 - 125	1	20
Calcium	48.4		25.0	76.67		mg/L		113	75 - 125	1	20
Chromium	0.00389		0.500	0.5255		mg/L		104	75 - 125	1	20
Cobalt	0.000324	J	0.500	0.5259		mg/L		105	75 - 125	0	20
Copper	0.00656		0.500	0.5204		mg/L		103	75 - 125	0	20
Lead	0.000562	J	0.500	0.5455		mg/L		109	75 - 125	0	20
Lithium	0.00515		0.500	0.5077		mg/L		101	75 - 125	1	20
Molybdenum	ND		0.500	0.5488		mg/L		110	75 - 125	1	20
Nickel	0.00842		0.500	0.5221		mg/L		103	75 - 125	0	20
Selenium	ND		1.00	1.024		mg/L		102	75 - 125	0	20
Silver	ND		0.250	0.2633		mg/L		105	75 - 125	0	20
Thallium	0.000209	J	1.00	1.077		mg/L		108	75 - 125	2	20
Vanadium	0.00137		0.500	0.5271		mg/L		105	75 - 125	1	20
Zinc	0.0614		0.250	0.3285		mg/L		107	75 - 125	1	20

Method: EPA 7470A - Mercury (CVAA)

Lab Sample ID: MB 180-288787/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 288996 — **Prep Batch: 288787**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200	0.000101	mg/L		08/21/19 09:34	08/22/19 08:47	1

Lab Sample ID: LCS 180-288787/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 288996 — **Prep Batch: 288787**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.00250	0.002485		mg/L		99	80 - 120

Lab Sample ID: 180-93863-C-1-C MS — **Client Sample ID: Matrix Spike**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 288996 — **Prep Batch: 288787**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	ND	F1	0.00100	0.0006450	F1	mg/L		65	75 - 125

Lab Sample ID: 180-93863-C-1-D MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 288996 — **Prep Batch: 288787**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	ND	F1	0.00100	0.0006280	F1	mg/L		63	75 - 125	3	20

QC Sample Results

Client: Stantec Consulting Services Inc
Project/Site: ALF_BS_20190813_1A

Job ID: 180-94096-1

Method: EPA 7471B - Mercury (CVAA)

Lab Sample ID: MB 180-288359/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 288683 — **Prep Batch: 288359**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0330	0.0143	mg/Kg		08/16/19 11:48	08/20/19 09:55	1

Lab Sample ID: LCS 180-288359/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 288683 — **Prep Batch: 288359**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.417	0.4093		mg/Kg		98	80 - 120

Lab Sample ID: 180-94096-6 MS — **Client Sample ID: ALF-BS-BG05-0.0/0.5-20190813 ~ ALF-BG05**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 288683 — **Prep Batch: 288359**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.144		0.207	0.3333		mg/Kg	☼	91	80 - 120

Lab Sample ID: 180-94096-6 MSD — **Client Sample ID: ALF-BS-BG05-0.0/0.5-20190813 ~ ALF-BG05**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 288683 — **Prep Batch: 288359**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	0.144		0.201	0.3223		mg/Kg	☼	89	80 - 120	3	20

Method: 2540G - SM 2540G

Lab Sample ID: 180-93957-A-1 DU — **Client Sample ID: Duplicate**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 288262

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Percent Moisture	19.1		19.9		%		4	10
Percent Solids	80.9		80.1		%		0.9	10

Lab Sample ID: 180-94096-5 DU — **Client Sample ID: ALF-BS-BG05-36.5/38.5-20190813 ~ ALF-BG05**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 288395

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Percent Moisture	16.5		16.8		%		2	10
Percent Solids	83.5		83.2		%		0.3	10

Lab Sample ID: 180-94096-9 DU — **Client Sample ID: ALF-BS-BG04-6.5/8.5-20190813 ~ ALF-BG04**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 288402

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Percent Moisture	29.5		26.3	F3	%		11	10
Percent Solids	70.5		73.7		%		4	10

QC Sample Results

Client: Stantec Consulting Services Inc
Project/Site: ALF_BS_20190813_1A

Job ID: 180-94096-1

Method: EPA 9045D - pH

Lab Sample ID: LCS 180-288442/1 — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 288442

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
pH			7.00	7.0		SU		100	99 - 101		

Lab Sample ID: 180-94074-C-1 DU — **Client Sample ID: Duplicate**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 288442

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
pH	7.1			7.1		SU				0	2

Lab Sample ID: LCS 180-289079/1 — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 289079

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
pH			7.00	7.0		SU		100	99 - 101		

Lab Sample ID: 180-94074-A-6 DU — **Client Sample ID: Duplicate**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 289079

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
pH	8.0			8.0		SU				0	2

Method: ASTM D2974 - Moisture, Ash and Organic Matter

Lab Sample ID: 180-93808-B-11 DU — **Client Sample ID: Duplicate**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 289145

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Fractional Organic Carbon	0.8			0.9	F5	%				11	10

Lab Sample ID: 180-94096-6 DU — **Client Sample ID: ALF-BS-BG05-0.0/0.5-20190813 ~ ALF-BG05**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 289145

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Fractional Organic Carbon	2.8			2.7		%				1	10

QC Association Summary

Client: Stantec Consulting Services Inc
Project/Site: ALF_BS_20190813_1A

Job ID: 180-94096-1

HPLC/IC

Leach Batch: 288711

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-94096-4	ALF-BS-BG05-31.5/33.5-20190813 ~ ALF-BG05	Soluble	Solid	DI Leach	
180-94096-5	ALF-BS-BG05-36.5/38.5-20190813 ~ ALF-BG05	Soluble	Solid	DI Leach	
180-94096-6	ALF-BS-BG05-0.0/0.5-20190813 ~ ALF-BG05	Soluble	Solid	DI Leach	
180-94096-7	ALF-BS-DUP02-20190813 ~ NA	Soluble	Solid	DI Leach	
180-94096-8	ALF-BS-BG04-0.5/2.5-20190813 ~ ALF-BG04	Soluble	Solid	DI Leach	
180-94096-9	ALF-BS-BG04-6.5/8.5-20190813 ~ ALF-BG04	Soluble	Solid	DI Leach	
180-94096-10	ALF-BS-BG04-11.5/13.5-20190813 ~ ALF-BG04	Soluble	Solid	DI Leach	
180-94096-11	ALF-BS-BG04-16.5/18.5-20190813 ~ ALF-BG04	Soluble	Solid	DI Leach	
180-94096-12	ALF-BS-BG04-21.5/23.5-20190813 ~ ALF-BG04	Soluble	Solid	DI Leach	
180-94096-13	ALF-BS-BG04-26.5/28.5-20190813 ~ ALF-BG04	Soluble	Solid	DI Leach	
180-94096-14	ALF-BS-BG04-31.5/33.5-20190813 ~ ALF-BG04	Soluble	Solid	DI Leach	
180-94096-15	ALF-BS-BG04-36.5/38.5-20190813 ~ ALF-BG04	Soluble	Solid	DI Leach	
MB 180-288711/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 180-288711/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
180-94096-6 MS	ALF-BS-BG05-0.0/0.5-20190813 ~ ALF-BG05	Soluble	Solid	DI Leach	
180-94096-6 MSD	ALF-BS-BG05-0.0/0.5-20190813 ~ ALF-BG05	Soluble	Solid	DI Leach	

Analysis Batch: 288964

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-94096-4	ALF-BS-BG05-31.5/33.5-20190813 ~ ALF-BG05	Soluble	Solid	EPA 9056A	288711
180-94096-5	ALF-BS-BG05-36.5/38.5-20190813 ~ ALF-BG05	Soluble	Solid	EPA 9056A	288711
180-94096-6	ALF-BS-BG05-0.0/0.5-20190813 ~ ALF-BG05	Soluble	Solid	EPA 9056A	288711
180-94096-7	ALF-BS-DUP02-20190813 ~ NA	Soluble	Solid	EPA 9056A	288711
180-94096-8	ALF-BS-BG04-0.5/2.5-20190813 ~ ALF-BG04	Soluble	Solid	EPA 9056A	288711
180-94096-9	ALF-BS-BG04-6.5/8.5-20190813 ~ ALF-BG04	Soluble	Solid	EPA 9056A	288711
180-94096-10	ALF-BS-BG04-11.5/13.5-20190813 ~ ALF-BG04	Soluble	Solid	EPA 9056A	288711
180-94096-11	ALF-BS-BG04-16.5/18.5-20190813 ~ ALF-BG04	Soluble	Solid	EPA 9056A	288711
180-94096-12	ALF-BS-BG04-21.5/23.5-20190813 ~ ALF-BG04	Soluble	Solid	EPA 9056A	288711
180-94096-13	ALF-BS-BG04-26.5/28.5-20190813 ~ ALF-BG04	Soluble	Solid	EPA 9056A	288711
180-94096-14	ALF-BS-BG04-31.5/33.5-20190813 ~ ALF-BG04	Soluble	Solid	EPA 9056A	288711
180-94096-15	ALF-BS-BG04-36.5/38.5-20190813 ~ ALF-BG04	Soluble	Solid	EPA 9056A	288711
MB 180-288711/1-A	Method Blank	Soluble	Solid	EPA 9056A	288711
LCS 180-288711/2-A	Lab Control Sample	Soluble	Solid	EPA 9056A	288711
180-94096-6 MS	ALF-BS-BG05-0.0/0.5-20190813 ~ ALF-BG05	Soluble	Solid	EPA 9056A	288711
180-94096-6 MSD	ALF-BS-BG05-0.0/0.5-20190813 ~ ALF-BG05	Soluble	Solid	EPA 9056A	288711

Analysis Batch: 289192

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-94096-1	ALF-BS-FB05-20190813 ~ NA	Total/NA	Water	EPA 9056A	
180-94096-2	ALF-BS-EB02-20190813 ~ NA	Total/NA	Water	EPA 9056A	
180-94096-3	ALF-BS-LB02-20190813 ~ NA	Total/NA	Water	EPA 9056A	
MB 180-289192/6	Method Blank	Total/NA	Water	EPA 9056A	
LCS 180-289192/5	Lab Control Sample	Total/NA	Water	EPA 9056A	
180-94072-A-1 MS	Matrix Spike	Total/NA	Water	EPA 9056A	
180-94072-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	EPA 9056A	

Metals

Prep Batch: 288359

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-94096-4	ALF-BS-BG05-31.5/33.5-20190813 ~ ALF-BG05	Total/NA	Solid	7471B	

Metals (Continued)

Prep Batch: 288359 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-94096-5	ALF-BS-BG05-36.5/38.5-20190813 ~ ALF-BG05	Total/NA	Solid	7471B	
180-94096-6	ALF-BS-BG05-0.0/0.5-20190813 ~ ALF-BG05	Total/NA	Solid	7471B	
180-94096-7	ALF-BS-DUP02-20190813 ~ NA	Total/NA	Solid	7471B	
180-94096-8	ALF-BS-BG04-0.5/2.5-20190813 ~ ALF-BG04	Total/NA	Solid	7471B	
180-94096-9	ALF-BS-BG04-6.5/8.5-20190813 ~ ALF-BG04	Total/NA	Solid	7471B	
180-94096-10	ALF-BS-BG04-11.5/13.5-20190813 ~ ALF-BG04	Total/NA	Solid	7471B	
180-94096-11	ALF-BS-BG04-16.5/18.5-20190813 ~ ALF-BG04	Total/NA	Solid	7471B	
180-94096-12	ALF-BS-BG04-21.5/23.5-20190813 ~ ALF-BG04	Total/NA	Solid	7471B	
180-94096-13	ALF-BS-BG04-26.5/28.5-20190813 ~ ALF-BG04	Total/NA	Solid	7471B	
180-94096-14	ALF-BS-BG04-31.5/33.5-20190813 ~ ALF-BG04	Total/NA	Solid	7471B	
180-94096-15	ALF-BS-BG04-36.5/38.5-20190813 ~ ALF-BG04	Total/NA	Solid	7471B	
MB 180-288359/1-A	Method Blank	Total/NA	Solid	7471B	
LCS 180-288359/2-A	Lab Control Sample	Total/NA	Solid	7471B	
180-94096-6 MS	ALF-BS-BG05-0.0/0.5-20190813 ~ ALF-BG05	Total/NA	Solid	7471B	
180-94096-6 MSD	ALF-BS-BG05-0.0/0.5-20190813 ~ ALF-BG05	Total/NA	Solid	7471B	

Prep Batch: 288363

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-94096-1	ALF-BS-FB05-20190813 ~ NA	Total Recoverable	Water	3005A	
180-94096-2	ALF-BS-EB02-20190813 ~ NA	Total Recoverable	Water	3005A	
180-94096-3	ALF-BS-LB02-20190813 ~ NA	Total Recoverable	Water	3005A	
MB 180-288363/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-288363/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
180-94014-B-1-C MS	Matrix Spike	Total Recoverable	Water	3005A	
180-94014-B-1-D MSD	Matrix Spike Duplicate	Total Recoverable	Water	3005A	

Prep Batch: 288386

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-94096-4	ALF-BS-BG05-31.5/33.5-20190813 ~ ALF-BG05	Total/NA	Solid	3050B	
180-94096-5	ALF-BS-BG05-36.5/38.5-20190813 ~ ALF-BG05	Total/NA	Solid	3050B	
180-94096-6	ALF-BS-BG05-0.0/0.5-20190813 ~ ALF-BG05	Total/NA	Solid	3050B	
180-94096-7	ALF-BS-DUP02-20190813 ~ NA	Total/NA	Solid	3050B	
180-94096-8	ALF-BS-BG04-0.5/2.5-20190813 ~ ALF-BG04	Total/NA	Solid	3050B	
180-94096-9	ALF-BS-BG04-6.5/8.5-20190813 ~ ALF-BG04	Total/NA	Solid	3050B	
180-94096-10	ALF-BS-BG04-11.5/13.5-20190813 ~ ALF-BG04	Total/NA	Solid	3050B	
180-94096-11	ALF-BS-BG04-16.5/18.5-20190813 ~ ALF-BG04	Total/NA	Solid	3050B	
180-94096-12	ALF-BS-BG04-21.5/23.5-20190813 ~ ALF-BG04	Total/NA	Solid	3050B	
180-94096-13	ALF-BS-BG04-26.5/28.5-20190813 ~ ALF-BG04	Total/NA	Solid	3050B	
MB 180-288386/1-A	Method Blank	Total/NA	Solid	3050B	
LCS 180-288386/2-A	Lab Control Sample	Total/NA	Solid	3050B	
180-94096-6 MS	ALF-BS-BG05-0.0/0.5-20190813 ~ ALF-BG05	Total/NA	Solid	3050B	
180-94096-6 MSD	ALF-BS-BG05-0.0/0.5-20190813 ~ ALF-BG05	Total/NA	Solid	3050B	

Prep Batch: 288387

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-94096-14	ALF-BS-BG04-31.5/33.5-20190813 ~ ALF-BG04	Total/NA	Solid	3050B	
180-94096-15	ALF-BS-BG04-36.5/38.5-20190813 ~ ALF-BG04	Total/NA	Solid	3050B	
MB 180-288387/1-A	Method Blank	Total/NA	Solid	3050B	
LCS 180-288387/2-A	Lab Control Sample	Total/NA	Solid	3050B	
180-94096-14 MS	ALF-BS-BG04-31.5/33.5-20190813 ~ ALF-BG04	Total/NA	Solid	3050B	
180-94096-14 MSD	ALF-BS-BG04-31.5/33.5-20190813 ~ ALF-BG04	Total/NA	Solid	3050B	

QC Association Summary

Client: Stantec Consulting Services Inc
Project/Site: ALF_BS_20190813_1A

Job ID: 180-94096-1

Metals

Analysis Batch: 288683

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-94096-4	ALF-BS-BG05-31.5/33.5-20190813 ~ ALF-BG05	Total/NA	Solid	EPA 7471B	288359
180-94096-5	ALF-BS-BG05-36.5/38.5-20190813 ~ ALF-BG05	Total/NA	Solid	EPA 7471B	288359
180-94096-6	ALF-BS-BG05-0.0/0.5-20190813 ~ ALF-BG05	Total/NA	Solid	EPA 7471B	288359
180-94096-7	ALF-BS-DUP02-20190813 ~ NA	Total/NA	Solid	EPA 7471B	288359
180-94096-8	ALF-BS-BG04-0.5/2.5-20190813 ~ ALF-BG04	Total/NA	Solid	EPA 7471B	288359
180-94096-9	ALF-BS-BG04-6.5/8.5-20190813 ~ ALF-BG04	Total/NA	Solid	EPA 7471B	288359
180-94096-10	ALF-BS-BG04-11.5/13.5-20190813 ~ ALF-BG04	Total/NA	Solid	EPA 7471B	288359
180-94096-11	ALF-BS-BG04-16.5/18.5-20190813 ~ ALF-BG04	Total/NA	Solid	EPA 7471B	288359
180-94096-12	ALF-BS-BG04-21.5/23.5-20190813 ~ ALF-BG04	Total/NA	Solid	EPA 7471B	288359
180-94096-13	ALF-BS-BG04-26.5/28.5-20190813 ~ ALF-BG04	Total/NA	Solid	EPA 7471B	288359
180-94096-14	ALF-BS-BG04-31.5/33.5-20190813 ~ ALF-BG04	Total/NA	Solid	EPA 7471B	288359
180-94096-15	ALF-BS-BG04-36.5/38.5-20190813 ~ ALF-BG04	Total/NA	Solid	EPA 7471B	288359
MB 180-288359/1-A	Method Blank	Total/NA	Solid	EPA 7471B	288359
LCS 180-288359/2-A	Lab Control Sample	Total/NA	Solid	EPA 7471B	288359
180-94096-6 MS	ALF-BS-BG05-0.0/0.5-20190813 ~ ALF-BG05	Total/NA	Solid	EPA 7471B	288359
180-94096-6 MSD	ALF-BS-BG05-0.0/0.5-20190813 ~ ALF-BG05	Total/NA	Solid	EPA 7471B	288359

Prep Batch: 288787

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-94096-1	ALF-BS-FB05-20190813 ~ NA	Total/NA	Water	7470A	
180-94096-2	ALF-BS-EB02-20190813 ~ NA	Total/NA	Water	7470A	
180-94096-3	ALF-BS-LB02-20190813 ~ NA	Total/NA	Water	7470A	
MB 180-288787/1-A	Method Blank	Total/NA	Water	7470A	
LCS 180-288787/2-A	Lab Control Sample	Total/NA	Water	7470A	
180-93863-C-1-C MS	Matrix Spike	Dissolved	Water	7470A	
180-93863-C-1-D MSD	Matrix Spike Duplicate	Dissolved	Water	7470A	

Analysis Batch: 288996

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-94096-1	ALF-BS-FB05-20190813 ~ NA	Total/NA	Water	EPA 7470A	288787
180-94096-2	ALF-BS-EB02-20190813 ~ NA	Total/NA	Water	EPA 7470A	288787
180-94096-3	ALF-BS-LB02-20190813 ~ NA	Total/NA	Water	EPA 7470A	288787
MB 180-288787/1-A	Method Blank	Total/NA	Water	EPA 7470A	288787
LCS 180-288787/2-A	Lab Control Sample	Total/NA	Water	EPA 7470A	288787
180-93863-C-1-C MS	Matrix Spike	Dissolved	Water	EPA 7470A	288787
180-93863-C-1-D MSD	Matrix Spike Duplicate	Dissolved	Water	EPA 7470A	288787

Analysis Batch: 289198

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-94096-1	ALF-BS-FB05-20190813 ~ NA	Total Recoverable	Water	EPA 6020A	288363
180-94096-2	ALF-BS-EB02-20190813 ~ NA	Total Recoverable	Water	EPA 6020A	288363
180-94096-3	ALF-BS-LB02-20190813 ~ NA	Total Recoverable	Water	EPA 6020A	288363
MB 180-288363/1-A	Method Blank	Total Recoverable	Water	EPA 6020A	288363
LCS 180-288363/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020A	288363
180-94014-B-1-C MS	Matrix Spike	Total Recoverable	Water	EPA 6020A	288363
180-94014-B-1-D MSD	Matrix Spike Duplicate	Total Recoverable	Water	EPA 6020A	288363

Analysis Batch: 289472

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-94096-4	ALF-BS-BG05-31.5/33.5-20190813 ~ ALF-BG05	Total/NA	Solid	EPA 6020A	288386
180-94096-5	ALF-BS-BG05-36.5/38.5-20190813 ~ ALF-BG05	Total/NA	Solid	EPA 6020A	288386

Metals (Continued)

Analysis Batch: 289472 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-94096-6	ALF-BS-BG05-0.0/0.5-20190813 ~ ALF-BG05	Total/NA	Solid	EPA 6020A	288386
180-94096-7	ALF-BS-DUP02-20190813 ~ NA	Total/NA	Solid	EPA 6020A	288386
180-94096-8	ALF-BS-BG04-0.5/2.5-20190813 ~ ALF-BG04	Total/NA	Solid	EPA 6020A	288386
180-94096-9	ALF-BS-BG04-6.5/8.5-20190813 ~ ALF-BG04	Total/NA	Solid	EPA 6020A	288386
180-94096-10	ALF-BS-BG04-11.5/13.5-20190813 ~ ALF-BG04	Total/NA	Solid	EPA 6020A	288386
180-94096-11	ALF-BS-BG04-16.5/18.5-20190813 ~ ALF-BG04	Total/NA	Solid	EPA 6020A	288386
180-94096-12	ALF-BS-BG04-21.5/23.5-20190813 ~ ALF-BG04	Total/NA	Solid	EPA 6020A	288386
180-94096-13	ALF-BS-BG04-26.5/28.5-20190813 ~ ALF-BG04	Total/NA	Solid	EPA 6020A	288386
MB 180-288386/1-A	Method Blank	Total/NA	Solid	EPA 6020A	288386
LCS 180-288386/2-A	Lab Control Sample	Total/NA	Solid	EPA 6020A	288386
180-94096-6 MS	ALF-BS-BG05-0.0/0.5-20190813 ~ ALF-BG05	Total/NA	Solid	EPA 6020A	288386
180-94096-6 MSD	ALF-BS-BG05-0.0/0.5-20190813 ~ ALF-BG05	Total/NA	Solid	EPA 6020A	288386

Analysis Batch: 289611

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-94096-14	ALF-BS-BG04-31.5/33.5-20190813 ~ ALF-BG04	Total/NA	Solid	EPA 6020A	288387
180-94096-15	ALF-BS-BG04-36.5/38.5-20190813 ~ ALF-BG04	Total/NA	Solid	EPA 6020A	288387
MB 180-288387/1-A	Method Blank	Total/NA	Solid	EPA 6020A	288387
LCS 180-288387/2-A	Lab Control Sample	Total/NA	Solid	EPA 6020A	288387
180-94096-14 MS	ALF-BS-BG04-31.5/33.5-20190813 ~ ALF-BG04	Total/NA	Solid	EPA 6020A	288387
180-94096-14 MSD	ALF-BS-BG04-31.5/33.5-20190813 ~ ALF-BG04	Total/NA	Solid	EPA 6020A	288387

General Chemistry

Analysis Batch: 288262

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-94096-4	ALF-BS-BG05-31.5/33.5-20190813 ~ ALF-BG05	Total/NA	Solid	2540G	
180-93957-A-1 DU	Duplicate	Total/NA	Solid	2540G	

Analysis Batch: 288395

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-94096-5	ALF-BS-BG05-36.5/38.5-20190813 ~ ALF-BG05	Total/NA	Solid	2540G	
180-94096-6	ALF-BS-BG05-0.0/0.5-20190813 ~ ALF-BG05	Total/NA	Solid	2540G	
180-94096-7	ALF-BS-DUP02-20190813 ~ NA	Total/NA	Solid	2540G	
180-94096-8	ALF-BS-BG04-0.5/2.5-20190813 ~ ALF-BG04	Total/NA	Solid	2540G	
180-94096-5 DU	ALF-BS-BG05-36.5/38.5-20190813 ~ ALF-BG05	Total/NA	Solid	2540G	

Analysis Batch: 288402

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-94096-9	ALF-BS-BG04-6.5/8.5-20190813 ~ ALF-BG04	Total/NA	Solid	2540G	
180-94096-10	ALF-BS-BG04-11.5/13.5-20190813 ~ ALF-BG04	Total/NA	Solid	2540G	
180-94096-11	ALF-BS-BG04-16.5/18.5-20190813 ~ ALF-BG04	Total/NA	Solid	2540G	
180-94096-12	ALF-BS-BG04-21.5/23.5-20190813 ~ ALF-BG04	Total/NA	Solid	2540G	
180-94096-13	ALF-BS-BG04-26.5/28.5-20190813 ~ ALF-BG04	Total/NA	Solid	2540G	
180-94096-14	ALF-BS-BG04-31.5/33.5-20190813 ~ ALF-BG04	Total/NA	Solid	2540G	
180-94096-15	ALF-BS-BG04-36.5/38.5-20190813 ~ ALF-BG04	Total/NA	Solid	2540G	
180-94096-9 DU	ALF-BS-BG04-6.5/8.5-20190813 ~ ALF-BG04	Total/NA	Solid	2540G	

Analysis Batch: 288442

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-94096-4	ALF-BS-BG05-31.5/33.5-20190813 ~ ALF-BG05	Total/NA	Solid	EPA 9045D	

General Chemistry (Continued)

Analysis Batch: 288442 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-94096-5	ALF-BS-BG05-36.5/38.5-20190813 ~ ALF-BG05	Total/NA	Solid	EPA 9045D	
180-94096-6	ALF-BS-BG05-0.0/0.5-20190813 ~ ALF-BG05	Total/NA	Solid	EPA 9045D	
180-94096-7	ALF-BS-DUP02-20190813 ~ NA	Total/NA	Solid	EPA 9045D	
180-94096-8	ALF-BS-BG04-0.5/2.5-20190813 ~ ALF-BG04	Total/NA	Solid	EPA 9045D	
180-94096-9	ALF-BS-BG04-6.5/8.5-20190813 ~ ALF-BG04	Total/NA	Solid	EPA 9045D	
180-94096-10	ALF-BS-BG04-11.5/13.5-20190813 ~ ALF-BG04	Total/NA	Solid	EPA 9045D	
180-94096-11	ALF-BS-BG04-16.5/18.5-20190813 ~ ALF-BG04	Total/NA	Solid	EPA 9045D	
LCS 180-288442/1	Lab Control Sample	Total/NA	Solid	EPA 9045D	
180-94074-C-1 DU	Duplicate	Total/NA	Solid	EPA 9045D	

Analysis Batch: 289079

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-94096-12	ALF-BS-BG04-21.5/23.5-20190813 ~ ALF-BG04	Total/NA	Solid	EPA 9045D	
180-94096-13	ALF-BS-BG04-26.5/28.5-20190813 ~ ALF-BG04	Total/NA	Solid	EPA 9045D	
180-94096-14	ALF-BS-BG04-31.5/33.5-20190813 ~ ALF-BG04	Total/NA	Solid	EPA 9045D	
180-94096-15	ALF-BS-BG04-36.5/38.5-20190813 ~ ALF-BG04	Total/NA	Solid	EPA 9045D	
LCS 180-289079/1	Lab Control Sample	Total/NA	Solid	EPA 9045D	
180-94074-A-6 DU	Duplicate	Total/NA	Solid	EPA 9045D	

Geotechnical

Analysis Batch: 289145

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-94096-4	ALF-BS-BG05-31.5/33.5-20190813 ~ ALF-BG05	Total/NA	Solid	ASTM D2974	
180-94096-5	ALF-BS-BG05-36.5/38.5-20190813 ~ ALF-BG05	Total/NA	Solid	ASTM D2974	
180-94096-6	ALF-BS-BG05-0.0/0.5-20190813 ~ ALF-BG05	Total/NA	Solid	ASTM D2974	
180-94096-7	ALF-BS-DUP02-20190813 ~ NA	Total/NA	Solid	ASTM D2974	
180-94096-8	ALF-BS-BG04-0.5/2.5-20190813 ~ ALF-BG04	Total/NA	Solid	ASTM D2974	
180-94096-9	ALF-BS-BG04-6.5/8.5-20190813 ~ ALF-BG04	Total/NA	Solid	ASTM D2974	
180-94096-10	ALF-BS-BG04-11.5/13.5-20190813 ~ ALF-BG04	Total/NA	Solid	ASTM D2974	
180-94096-11	ALF-BS-BG04-16.5/18.5-20190813 ~ ALF-BG04	Total/NA	Solid	ASTM D2974	
180-94096-12	ALF-BS-BG04-21.5/23.5-20190813 ~ ALF-BG04	Total/NA	Solid	ASTM D2974	
180-94096-13	ALF-BS-BG04-26.5/28.5-20190813 ~ ALF-BG04	Total/NA	Solid	ASTM D2974	
180-94096-14	ALF-BS-BG04-31.5/33.5-20190813 ~ ALF-BG04	Total/NA	Solid	ASTM D2974	
180-94096-15	ALF-BS-BG04-36.5/38.5-20190813 ~ ALF-BG04	Total/NA	Solid	ASTM D2974	
180-93808-B-11 DU	Duplicate	Total/NA	Solid	ASTM D2974	
180-94096-6 DU	ALF-BS-BG05-0.0/0.5-20190813 ~ ALF-BG05	Total/NA	Solid	ASTM D2974	

TVA Environmental Investigations

Tennessee Valley Authority

Chain-of-Custody / Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed and accurate

COOLER No.:	2 of 4
COC No:	ALF_BS_20190813_1A
1 of 1 Pages	
Task Desc:	ALF_BS

Required Ship to Lab:		Required Project Information:		Required Sampler Information	
Lab Name:	TestAmerica Pittsburgh	Site ID #:	Allen Fossil Plant	Sampler:	John Myer/Tyler Hischke
Lab Address:	301 Alpha Drive	Project #:	175568282	Sampling Company:	Stantec
	Pittsburgh, PA 15238	Site Address	2574 Plant Road	Address	601 Grassmere Park Dr, Suite 22
		City	Memphis State, Zip: TN, 38109	City/State	Nashville, TN Phone: 6158851144
Lab Manager Contact Information		Site PM Name:	Roy Quinn		
Lab PM:	Gail Lage	Phone/Fax:	423-751-3753	Sampling Team Number:	1
Phone/Fax:	615-301-5741/615-726-3404	Site PM Email:	jrquinn@tva.gov	Send EDD/Hard Copy to:	tva_deliverables@envstd.com
Lab Email:	Gail.Lage@testamericainc.com				

Analysis Turnaround Time: ☐ CALENDAR DAYS ☑ WORKING DAYS

TAT if different from Below _____
- ☐ 24 Hours
- ☐ 3 Business Days
- ☐ 5 Business Days
- ☑ 10 Business Days

ITEMS #	SAMPLE ID Samples IDs MUST BE UNIQUE	SAMPLE LOCATION	Sample Depth: Start Depth (Depth Unit)	Sample Depth: End Depth (Select Unit)	MATRIX CODE	G= GRAB C=COMP	SAMPLE TYPE	SAMPLE DATE	SAMPLE TIME	# OF CONTAINERS	Comments/ Lab Sample I.D.	MS/MSD	Analysis: BACKGROUNDSOIL	BACKGROUNDSOIL_BLANKS	BACKGROUNDSOIL_pH	ALF_FOC	Filtered	Preserve
1	ALF-BS-FB05-20190813	-	NA	NA	AQ	G	FB	8/13/2019	0802	2	N/A	☐		X			N	None
2	ALF-BS-EB02-20190813	-	NA	NA	AQ	G	EB	8/13/2019	0820	2	N/A	☐		X			N	see comments
3	ALF-BS-LB02-20190813	-	NA	NA	AQ	G	EB	8/13/2019	0841	2	N/A	☐		X			N	None
4	ALF-BS-BG05-31.5/33.5-20190813	ALF-BG05	31.5	33.5	BS	G	N	8/13/2019	0858	3	N/A	☐	X	X	X			None
5	ALF-BS-BG05-36.5/38.5-20190813	ALF-BG05	36.5	38.5	BS	G	N	8/13/2019	0926	3	N/A	☐	X	X	X			
6	ALF-BS-BG05-0.0/0.5-20190813	ALF-BG05	0.0	0.5	BS	G	N	8/13/2019	1012	3	N/A	☑	X	X	X			
7	ALF-BS-DUP02-20190813	-	NA	NA	BS	G	FD	8/13/2019	NA	3	N/A	☐	X	X	X			
8	ALF-BS-BG04-0.5/2.5-20190813	ALF-BG04	0.5	2.5	BS	G	N	8/13/2019	1329	3	N/A	☐	X	X	X			
9	ALF-BS-BG04-6.5/8.5-20190813	ALF-BG04	6.5	8.5	BS	G	N	8/13/2019	1352	3	N/A	☐	X	X	X			
10	ALF-BS-BG04-11.5/13.5-20190813	ALF-BG04	11.5	13.5	BS	G	N	8/13/2019	1417	3	N/A	☐	X	X	X			
11	ALF-BS-BG04-16.5/18.5-20190813	ALF-BG04	16.5	18.5	BS	G	N	8/13/2019	1451	3	N/A	☐	X	X	X			
12	ALF-BS-BG04-21.5/23.5-20190813	ALF-BG04	21.5	23.5	BS	G	N	8/13/2019	1514	3	N/A	☐	X	X	X			
13	ALF-BS-BG04-26.5/28.5-20190813	ALF-BG04	26.5	28.5	BS	G	N	8/13/2019	1535	3	N/A	☐	X	X	X			
14	ALF-BS-BG04-31.5/33.5-20190813	ALF-BG04	31.5	33.5	BS	G	N	8/13/2019	1556	3	N/A	☐	X	X	X			
15	ALF-BS-BG04-36.5/38.5-20190813	ALF-BG04	36.5	38.5	BS	G	N	8/13/2019	1619	3	N/A	☐	X	X	X			

JOM 8/13/19

Additional Comments/Special Instructions:

Additional volume collected should be used for MS/MSDs.

BACKGROUNDSOIL_BLANKS: Anions unpreserved; Metals preserved w/ HNO3 to pH<2

JOM 8/13/19

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
Carolyn Sexton	8/13/19	1749	[signature]	8/14/19	0900
JOM 8/13/19					

SHIPPING METHOD:	SAMPLER NAME AND SIGNATURE
Fedex	John Myer [signature]
JOM 8/13/19	Tyler Hischke

Sample Receipt Conditions	Temperature in °C	Sample on Ice?	Sample Intact?	Trip Blank?
☑ Yes ☐ No	☑ Yes ☐ No	☑ Yes ☐ No	☑ Yes ☑ No	
☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	
☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	
☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	

Svcs: PRIORITY OVERNIGHT Master 1054 5427 0523 TRCK: 1054 5427 0626
Dep: Wgt: 10.00 LBS DV: 0.00 SPECIAL: 0.00 HANDLING: 0.00 TOTAL: 0.00

Svcs: PRIORITY OVERNIGHT Master 1054 5427 0523 TRCK: 1054 5427 0604
Dep: Wgt: 10.00 LBS DV: 0.00 SPECIAL: 0.00 HANDLING: 0.00 TOTAL: 0.00

Svcs: PRIORITY OVERNIGHT Master 1054 5427 0523 TRCK: 1054 5427 0637
Dep: Wgt: 10.00 LBS DV: 0.00 SPECIAL: 0.00 HANDLING: 0.00 TOTAL: 0.00

Svcs: PRIORITY OVERNIGHT Master 1054 5427 0523 TRCK: 1054 5427 0615
Dep: Wgt: 10.00 LBS DV: 0.00 SPECIAL: HANDLING: TOTAL:

180-94096 Chain of Custody

Form TVA 30067A

9/3/2019

TVA Environmental Investigations

Tennessee Valley Authority

Chain-of-Custody / Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed and accurate

COOLER No.:	2 of 4
COC No:	ALF_BS_20190813_1A
1 of 1 Pages	
Task Desc:	ALF_BS

Required Ship to Lab:	
Lab Name:	TestAmerica Pittsburgh
Lab Address:	301 Alpha Drive Pittsburgh, PA 15238
Lab Manager Contact Information	
Lab PM:	Gail Lage
Phone/Fax:	615-301-5741/615-726-3404
Lab Email:	Gail.Lage@testamericainc.com

Required Project Information:			
Site ID #:	Allen Fossil Plant		
Project #:	175568282		
Site Address	2574 Plant Road		
City	Memphis	State, Zip:	TN, 38109
Site PM Name:	Roy Quinn		
Phone/Fax:	423-751-3753		
Site PM Email:	jrquinn@tva.gov		

Required Sampler Information			
Sampler:	John Myer/Tyler Hischke		
Sampling Company:	Stantec		
Address	601 Grassmere Park Dr, Suite 22		
City/State	Nashville, TN	Phone:	6158851144
Sampling Team Number:	1		
Send EDD/Hard Copy to:	tva_deliverables@envstd.com		

Analysis Turnaround Time

☐ CALENDAR DAYS ☑ WORKING DAYS

TAT if different from Below _____

- ☐ 24 Hours
- ☐ 3 Business Days
- ☐ 5 Business Days
- ☑ **10 Business Days**

ITEMS #	SAMPLE ID Samples IDs MUST BE UNIQUE	SAMPLE LOCATION	Sample Depth: Start Depth (Depth Unit)	Sample Depth: End Depth (Select Unit)	MATRIX CODE	G= GRAB C=COMP	SAMPLE TYPE	SAMPLE DATE	SAMPLE TIME	# OF CONTAINERS	Comments/ Lab Sample I.D.	MS/MSD	Analysis: BACKGROUNDSOIL	Analysis: BACKGROUNDSOIL_BLANKS	Analysis: BACKGROUNDSOIL_pH	Analysis: ALF_FOC
													Filtered: N	N	N	N
													Preserve: None	see comments	None	None
1	ALF-BS-FB05-20190813	-	NA	NA	AQ	G	FB	8/13/2019	0802	2	N/A	☐		X		
2	ALF-BS-EB02-20190813	-	NA	NA	AQ	G	EB	8/13/2019	0820	2	N/A	☐		X		
3	ALF-BS-LB02-20190813	-	NA	NA	AQ	G	EB	8/13/2019	0841	2	N/A	☐		X		
4	ALF-BS-BG05-31.5/33.5-20190813	ALF-BG05	31.5	33.5	BS	G	N	8/13/2019	0858	3	N/A	☐	X	X	X	
5	ALF-BS-BG05-36.5/38.5-20190813	ALF-BG05	36.5	38.5	BS	G	N	8/13/2019	0926	3	N/A	☐	X	X	X	
6	ALF-BS-BG05-0.0/0.5-20190813	ALF-BG05	0.0	0.5	BS	G	N	8/13/2019	1012	3	N/A	☑	X	X	X	
7	ALF-BS-DUP02-20190813	-	NA	NA	BS	G	FD	8/13/2019	NA	3	N/A	☐	X	X	X	
8	ALF-BS-BG04-0.5/2.5-20190813	ALF-BG04	0.5	2.5	BS	G	N	8/13/2019	1329	3	N/A	☐	X	X	X	
9	ALF-BS-BG04-6.5/8.5-20190813	ALF-BG04	6.5	8.5	BS	G	N	8/13/2019	1352	3	N/A	☐	X	X	X	
10	ALF-BS-BG04-11.5/13.5-20190813	ALF-BG04	11.5	13.5	BS	G	N	8/13/2019	1417	3	N/A	☐	X	X	X	
11	ALF-BS-BG04-16.5/18.5-20190813	ALF-BG04	16.5	18.5	BS	G	N	8/13/2019	1451	3	N/A	☐	X	X	X	
12	ALF-BS-BG04-21.5/23.5-20190813	ALF-BG04	21.5	23.5	BS	G	N	8/13/2019	1514	3	N/A	☐	X	X	X	
13	ALF-BS-BG04-26.5/28.5-20190813	ALF-BG04	26.5	28.5	BS	G	N	8/13/2019	1535	3	N/A	☐	X	X	X	
14	ALF-BS-BG04-31.5/33.5-20190813	ALF-BG04	31.5	33.5	BS	G	N	8/13/2019	1556	3	N/A	☐	X	X	X	
15	ALF-BS-BG04-36.5/38.5-20190813	ALF-BG04	36.5	38.5	BS	G	N	8/13/2019	1619	3	N/A	☐	X	X	X	

JMM 8/13/19

JMM 8/13/19

Additional Comments/Special Instructions:

Additional volume collected should be used for MS/MSDs.

BACKGROUNDSOIL_BLANKS: Anions unpreserved; Metals preserved w/ HNO3 to pH<2

JMM 8/13/19

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
Carolyn Sexton	8/13/19	1740	[illegible]	8/13/19	1740
JMM 8/13/19					

SHIPPING METHOD:	SAMPLER NAME AND SIGNATURE
Fedex	John Myer
JMM 8/13/19	Tyler Hischke

Sample Receipt Conditions	Temperature in °C	Sample on Ice?	Sample Intact?	Trip Blank?
	☑Yes ☐No	☑Yes ☐No	☑Yes ☐No	☐Yes ☑No
	☐Yes ☐No	☐Yes ☐No	☐Yes ☐No	☐Yes ☐No
	☐Yes ☐No	☐Yes ☐No	☐Yes ☐No	☐Yes ☐No
	☐Yes ☐No	☐Yes ☐No	☐Yes ☐No	☐Yes ☐No

Form TVA 30067A

TVA Environmental Investigations

Tennessee Valley Authority

COOLER No.:	3 of 4
COC No:	ALF_BS_20190813_1A
1 of 1 Pages	
Task Desc:	ALF_BS

Chain-of-Custody / Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed and accurate

Required Ship to Lab:	
Lab Name:	TestAmerica Pittsburgh
Lab Address:	301 Alpha Drive Pittsburgh, PA 15238
Lab Manager Contact Information	
Lab PM:	Gail Lage
Phone/Fax:	615-301-5741/615-726-3404
Lab Email:	Gail.Lage@testamericainc.com

Required Project Information:			
Site ID #:	Allen Fossil Plant		
Project #:	175568282		
Site Address	2574 Plant Road		
City	Memphis	State, Zip:	TN, 38109
Site PM Name:	Roy Quinn		
Phone/Fax:	423-751-3753		
Site PM Email:	jrquinn@tva.gov		

Required Sampler Information			
Sampler:	John Myer/Tyler Hischke		
Sampling Company:	Stantec		
Address	601 Grassmere Park Dr, Suite 22		
City/State	Nashville, TN	Phone:	6158851144
Sampling Team Number:	1		
Send EDD/Hard Copy to:	tva_deliverables@envstd.com		

Analysis Turnaround Time

☐ CALENDAR DAYS ☑ WORKING DAYS

TAT if different from Below _____

☐ 24 Hours
☐ 3 Business Days
☐ 5 Business Days
☑ **10 Business Days**

ITEMS #	SAMPLE ID Samples IDs MUST BE UNIQUE	SAMPLE LOCATION	Sample Depth: Start Depth	Sample Depth: End Depth	MATRIX CODE	G= GRAB C=COMP	SAMPLE TYPE	SAMPLE DATE	SAMPLE TIME	# OF CONTAINERS	Comments/ Lab Sample I.D.	MS/MSD	Analysis: BACKGROUNDSOIL	Analysis: BACKGROUNDSOIL_BLANKS	Analysis: BACKGROUNDSOIL_pH	Analysis: ALF_FOC	Filtered	Preserve
			Depth Unit	Select Unit														
1	ALF-BS-FB05-20190813	-	NA	NA	AQ	G	FB	8/13/2019	0802	2	N/A	☐		X			N	None
2	ALF-BS-EB02-20190813	-	NA	NA	AQ	G	EB	8/13/2019	0820	2	N/A	☐		X			N	see comments
3	ALF-BS-LB02-20190813	-	NA	NA	AQ	G	EB	8/13/2019	0841	2	N/A	☐		X			N	None
4	ALF-BS-BG05-31.5/33.5-20190813	ALF-BG05	31.5	33.5	BS	G	N	8/13/2019	0858	3	N/A	☐	X	X	X		N	None
5	ALF-BS-BG05-36.5/38.5-20190813	ALF-BG05	36.5	38.5	BS	G	N	8/13/2019	0926	3	N/A	☐	X	X	X			
6	ALF-BS-BG05-0.0/0.5-20190813	ALF-BG05	0.0	0.5	BS	G	N	8/13/2019	1012	3	N/A	☑	X	X	X			
7	ALF-BS-DUP02-20190813	-	NA	NA	BS	G	FD	8/13/2019	NA	3	N/A	☐	X	X	X			
8	ALF-BS-BG04-0.5/2.5-20190813	ALF-BG04	0.5	2.5	BS	G	N	8/13/2019	1329	3	N/A	☐	X	X	X			
9	ALF-BS-BG04-6.5/8.5-20190813	ALF-BG04	6.5	8.5	BS	G	N	8/13/2019	1352	3	N/A	☐	X	X	X			
10	ALF-BS-BG04-11.5/13.5-20190813	ALF-BG04	11.5	13.5	BS	G	N	8/13/2019	1417	3	N/A	☐	X	X	X			
11	ALF-BS-BG04-16.5/18.5-20190813	ALF-BG04	16.5	18.5	BS	G	N	8/13/2019	1451	3	N/A	☐	X	X	X			
12	ALF-BS-BG04-21.5/23.5-20190813	ALF-BG04	21.5	23.5	BS	G	N	8/13/2019	1514	3	N/A	☐	X	X	X			
13	ALF-BS-BG04-26.5/28.5-20190813	ALF-BG04	26.5	28.5	BS	G	N	8/13/2019	1535	3	N/A	☐	X	X	X			
14	ALF-BS-BG04-31.5/33.5-20190813	ALF-BG04	31.5	33.5	BS	G	N	8/13/2019	1556	3	N/A	☐	X	X	X			
15	ALF-BS-BG04-36.5/38.5-20190813	ALF-BG04	36.5	38.5	BS	G	N	8/13/2019	1619	3	N/A	☐	X	X	X			

Additional Comments/Special Instructions:

Additional volume collected should be used for MS/MSDs.

BACKGROUNDSOIL_BLANKS: Anions unpreserved; Metals preserved w/ HNO3 to pH<2

JMM 8/13/19

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
Carolyn Sexton	8/13/19	1740	[illegible]	8/13/19	9am
JMM 8/13/19					

SHIPPING METHOD:	SAMPLER NAME AND SIGNATURE
Fedex	John Myer
JMM 8/13/19	Tyler Hischke

Sample Receipt Conditions

Temperature in °C	Sample on Ice?	Sample Intact?	Trip Blank?
☐Yes ☐No	☐Yes ☐No	☐Yes ☐No	☐Yes ☐No
☐Yes ☐No	☐Yes ☐No	☐Yes ☐No	☐Yes ☐No
☐Yes ☐No	☐Yes ☐No	☐Yes ☐No	☐Yes ☐No
☐Yes ☐No	☐Yes ☐No	☐Yes ☐No	☐Yes ☐No

JMM 8/13/19

Form TVA 30067A

TVA Environmental Investigations

Tennessee Valley Authority

Chain-of-Custody / Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed and accurate

COOLER No.:	4	of	4
COC No:	ALF_BS_20190813_1B		
1 of 1 Pages			
Task Desc:	ALF_BS		

Required Ship to Lab:		Required Project Information:		Required Sampler Information	
Lab Name:	TestAmerica Pittsburgh	Site ID #:	Allen Fossil Plant	Sampler:	John Myer/Tyler Hischke
Lab Address:	301 Alpha Drive Pittsburgh, PA 15238	Project #:	175568282	Sampling Company:	Stantec
		Site Address	2574 Plant Road	Address	601 Grassmere Park Dr, Suite 22
		City	Memphis State, Zip: TN, 38109	City/State	Nashville, TN Phone: 6158851144
Lab Manager Contact Information		Site PM Name:	Roy Quinn		
Lab PM:	Gail Lage	Phone/Fax:	423-751-3753	Sampling Team Number:	1
Phone/Fax:	615-301-5741/615-726-3404	Site PM Email:	jrquinn@tva.gov	Send EDD/Hard Copy to:	tva_deliverables@envstd.com
Lab Email:	Gail.Lage@testamericainc.com				

Analysis Turnaround Time

☐ CALENDAR DAYS ☑ WORKING DAYS

TAT if different from Below _____

☐ 24 Hours
☐ 3 Business Days
☐ 5 Business Days
☑ **10 Business Days**

ITEMS #	SAMPLE ID Samples IDs MUST BE UNIQUE	SAMPLE LOCATION	Sample Depth: Depth Unit Start Depth	Sample Depth: Select Unit End Depth	MATRIX CODE	G= GRAB C=COMP	SAMPLE TYPE	SAMPLE DATE	SAMPLE TIME	# OF CONTAINERS	Comments/ Lab Sample I.D.	MS/MSD	Filtered N	Filtered N	Preserve None	Preserve HNO3	Analysis BACKGROUNDSOIL_RAD	Analysis BACKGROUNDSOIL_BLANKS_RAD
1	ALF-BS-FB05-20190813	-	NA	NA	AQ	G	FB	8/13/2019	0802	3	N/A	☐				X		X
2	ALF-BS-EB02-20190813	-	NA	NA	AQ	G	EB	8/13/2019	0820	3	N/A	☐				X		X
3	ALF-BS-LB02-20190813	-	NA	NA	AQ	G	EB	8/13/2019	0841	3	N/A	☐				X		X
4	ALF-BS-BG05-31.5/33.5-20190813	ALF-BG05	31.5	33.5	BS	G	N	8/13/2019	0858	2	N/A	☐	X					
5	ALF-BS-BG05-36.5/38.5-20190813	ALF-BG05	36.5	38.5	BS	G	N	8/13/2019	0926	2	N/A	☐	X					
6	ALF-BS-BG05-0.0/0.5-20190813	ALF-BG05	0.0	0.5	BS	G	N	8/13/2019	1012	3	N/A	☑	X					
7	ALF-BS-DUP02-20190813	-	NA	NA	BS	G	FD	8/13/2019	NA	2	N/A	☐	X					
8	ALF-BS-BG04-0.5/2.5-20190813	ALF-BG04	0.5	2.5	BS	G	N	8/13/2019	1329	2	N/A	☐	X					
9	ALF-BS-BG04-6.5/8.5-20190813	ALF-BG04	6.5	8.5	BS	G	N	8/13/2019	1352	2	N/A	☐	X					
10	ALF-BS-BG04-11.5/13.5-20190813	ALF-BG04	11.5	13.5	BS	G	N	8/13/2019	1417	2	N/A	☐	X					
11	ALF-BS-BG04-16.5/18.5-20190813	ALF-BG04	16.5	18.5	BS	G	N	8/13/2019	1451	2	N/A	☐	X					
12	ALF-BS-BG04-21.5/23.5-20190813	ALF-BG04	21.5	23.5	BS	G	N	8/13/2019	1514	2	N/A	☐	X					
13	ALF-BS-BG04-26.5/28.5-20190813	ALF-BG04	26.5	28.5	BS	G	N	8/13/2019	1535	2	N/A	☐	X					
14	ALF-BS-BG04-31.5/33.5-20190813	ALF-BG04	31.5	33.5	BS	G	N	8/13/2019	1556	2	N/A	☐	X					
15	ALF-BS-BG04-36.5/38.5-20190813	ALF-BG04	36.5	38.5	BS	G	N	8/13/2019	1619	2	N/A	☐	X					

gom 8/13/19

Additional Comments/Special Instructions:

Additional volume collected should be used for laboratory duplicate analysis.

gom 8/13/19

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
Carolyn Sexton	8/13/19	1740	[illegible]	8/14/19	[illegible]
gom 8/13/19					

SHIPPING METHOD:	SAMPLER NAME AND SIGNATURE
Fedex	John Myer
gom 8/13/19	Tyler Hiscke

Sample Receipt Conditions

Temperature in °C	Sample on Ice?	Sample Intact?	Trip Blank?
☑Yes ☐No	☑Yes ☐No	☑Yes ☐No	☑Yes ☑No
☐Yes ☐No	☐Yes ☐No	☐Yes ☐No	☐Yes ☐No
☐Yes ☐No	☐Yes ☐No	☐Yes ☐No	☐Yes ☐No
☐Yes ☐No	☐Yes ☐No	☐Yes ☐No	☐Yes ☐No

Form TVA 30067A

Login Sample Receipt Checklist

Client: Stantec Consulting Services Inc

Job Number: 180-94096-1

Login Number: 94096
List Number: 1
Creator: Say, Thomas C

List Source: Eurofins TestAmerica, Pittsburgh

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	