Chemical Analysis Report

CEN-DIST-2019-05-15-02

Florida Department of Environmental Protection
Central Laboratory
2600 Blair Stone Road
Tallahassee, FL 32399-2400
DOH Accreditation E31780

Event Description: **Ingram X2 / Felter / Lotta / Panther X3**
Request ID: **RQ-2019-05-13-36**
Customer: **CEN-DIST**
Project ID: **SMP**

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Date Certified: 31-MAY-2019 13:18

Case Narrative

Unless otherwise noted, all samples included in this report were received in accordance with protocols referenced in Chapter 62-160, Florida Administrative Code (F.A.C.). Results published in this report pertain only to the samples as submitted to, and received by the laboratory. All times in this report are adjusted to the applicable Eastern Time Zone (EST or EDT).

Results for the following analytical groups are included in this report: Metals and Nutrients.

Scientific notation may be used in reporting very large or small values. Values reported using scientific notation will take the form of the following example: 1.3E+03, which is equivalent to 1.3×10^3 or 1300.

Unless otherwise noted, analytical values for soil and sediment samples are reported on a dry weight basis, and analytical values for waste and tissue samples are reported on a wet weight basis.

Results for TNI accredited tests met requirements established by The NELAC Institute. A double asterisk (**) is used to indicate an analyte/matrix/method for which the laboratory is not TNI accredited by the Florida Department of Health Environmental Laboratory Certification Program or where accreditation for that field of testing is not applicable.

Any significant anomalies or deviations from established protocols are documented in Non-Conformance Reports, which, where appropriate, are included within this analytical report. Additional comments related to specific analytical tests may be included as remarks following the analytical results for each sample. Such comments and remarks are for informational purposes only and are not intended to convey judgement about the usability of the reported data.

A quality control report on the performance of the test method for the submitted samples is included. Uncertainty associated with the analytical results contained in this report can be estimated from the reported quality assurance results and from published quality control acceptance limits for each analytical test. Matrix quality control results (matrix spike recoveries and matrix sample precision) pertain only to the matrix sample tested and do not necessarily reflect test method performance for other samples.

Typical matrix quality control (QC) measurements may include matrix spike recovery, matrix spike duplicate recovery, matrix spike precision and matrix sample precision. Not all matrix QC results may be available or reportable; where they are not an explanation is provided. Typical reasons for unavailable QC results include, but are not limited to, a) insufficient matrix sample to perform some or all QC measurements; b) analyte concentration in the sample replicated was too low for a meaningful measurement of precision and c) analyte concentration in the matrix sample spiked was too high (relative to the amount of analyte spiked) for a meaningful measurement of recovery. Where matrix QC results are unavailable, other method performance metrics (e.g., LCS recovery, LCS precision, surrogate recovery) may be used to assess performance of the method. Comments explaining any missing QC measurements are not intended to convey any adverse conclusions about the quality of the reported data.

Precision is reported as relative percent difference unless otherwise noted.

Quality Control codes as defined below may be used in this report to indicate results that are associated with one or more quality control elements which did not fall within established test method criteria. Such results may be qualified as estimates using a J qualifier as required by 62-160 F.A.C. Explanations are included in the report for any results that were reported as estimates for other reasons.

QC Codes used in this report may include:

LCS – Recovery for the batch Laboratory Control Sample (LCS) was outside existing control limits;
MS – Recovery for the batch matrix spike (MS) was outside existing control limits;
CCV – Recovery for a continuing calibration verification (CCV) standard was outside existing control limits;
SUR – Recovery of a surrogate (SUR) for associated analytes was outside existing control limits;
RPD – The precision, measured as relative percent difference (RPD), of batch replicate measurements was outside existing control limits;
RSD – The precision, measured as relative standard deviation (RSD), of batch replicate measurements was outside existing control limits;
SMP – Sample - used precision derived from replicate analyses of a sample;

The following data qualifiers are used, where applicable, in this report as specified in 62-160 F.A.C.

A - Value reported is the mean of two or more determinations.
B - Results based on colony counts outside the acceptable range.
I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
J - Estimated value and/or the analysis did not meet established quality control criteria.
K - Actual value is known to be less than value given.
L - Actual value is known to be greater than value given.
N - Presumptive evidence of presence of material.
O - Sampled, but analysis lost or not performed.
Q - Sample held beyond normal holding time.
T - Value reported is less than the criterion of detection.
U - Material was analyzed for but not detected. The reported value is the method detection limit for the sample analyzed.
V - Analyte was detected in both sample and method blank.
X - Too few individuals to calculate SCI value.
Y - The laboratory analysis was from an unpreserved or improperly preserved sample. The data may not be accurate.
Z - Colonies were too numerous to count (TNTC).

Quality control information from overflow laboratories may not be included in this report. Please refer to the associated report from the overflow laboratory for additional information.

Sample Location: Panther Lake @ Center of East Lobe **Collection Date/Time: 05/14/2019 11:41**

Field ID: G4CE0165 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2086219	EPA 180.1 Rev. 2.0	Turbidity	1.4		NTU	P364014	
	EPA 300.0 Rev. 2.1	Chloride	33	A	mg Cl/L	P364113	
		Sulfate	24	A	mg SO4/L	P364115	
	SM 2120 B	Color (true)	42		PCU	P364019	
	SM 2320 B-97	Total Alkalinity	27		mg CaCO3/L	P364309	
	SM 2540 C-97	TDS	137	A	mg/L	P364392	
	SM 2540 D-97	TSS	2	IA	mg/L	P364398	
	SM 4500 F-C-97	Fluoride	0.062	I	mg F/L	P364313	
2086222	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P364283	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.75		mg N/L	P364467	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P364216	
	EPA 365.1 Rev. 2.0	Total-P	0.022		mg P/L	P364386	
	SM 5310 B-00	Organic Carbon	9.8		mg C/L	P364413	
2086225	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P364003	

Ref. Method and Comment:
SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Panther Lake @ Center of West Lobe **Collection Date/Time: 05/14/2019 12:08**

Field ID: G4CE0164 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2086220	EPA 180.1 Rev. 2.0	Turbidity	1.2		NTU	P364015	
	EPA 300.0 Rev. 2.1	Chloride	30		mg Cl/L	P364113	
		Sulfate	23		mg SO4/L	P364115	
	SM 2120 B	Color (true)	23		PCU	P364019	
	SM 2320 B-97	Total Alkalinity	25		mg CaCO3/L	P364309	
	SM 2540 C-97	TDS	110		mg/L	P364392	
	SM 2540 D-97	TSS	2	I	mg/L	P364398	
	SM 4500 F-C-97	Fluoride	0.059	I	mg F/L	P364313	
2086223	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	I	mg N/L	P364283	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.63		mg N/L	P364467	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P364218	
	EPA 365.1 Rev. 2.0	Total-P	0.012		mg P/L	P364386	
	SM 5310 B-00	Organic Carbon	8.8		mg C/L	P364413	
2086226	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P364003	

Ref. Method and Comment:
SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Panther Lake @ center of center lobe **Collection Date/Time: 05/14/2019 12:18**

Field ID: G4CE0156 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2086221	EPA 180.1 Rev. 2.0	Turbidity	1.1		NTU	P364015	
	EPA 300.0 Rev. 2.1	Chloride	30		mg Cl/L	P364113	
		Sulfate	24		mg SO4/L	P364115	
	SM 2120 B	Color (true)	20		PCU	P364019	
	SM 2320 B-97	Total Alkalinity	23	A	mg CaCO3/L	P364309	
	SM 2540 C-97	TDS	102		mg/L	P364392	
	SM 2540 D-97	TSS	2	I	mg/L	P364398	
	SM 4500 F-C-97	Fluoride	0.060	I	mg F/L	P364313	
2086224	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P364283	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.63		mg N/L	P364467	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P364218	
	EPA 365.1 Rev. 2.0	Total-P	0.011		mg P/L	P364386	
	SM 5310 B-00	Organic Carbon	8.5		mg C/L	P364413	
2086227	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P364003	

Ref. Method and Comment:
SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Lake Ingram East **Collection Date/Time: 05/14/2019 11:01**

Field ID: G4CE0155 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2086213	EPA 180.1 Rev. 2.0	Turbidity	2.0		NTU	P364014	
	EPA 300.0 Rev. 2.1	Chloride	8.8		mg Cl/L	P364113	
		Sulfate	2.9		mg SO4/L	P364115	
	SM 2120 B	Color (true)	33	A	PCU	P364019	
	SM 2320 B-97	Total Alkalinity	10		mg CaCO3/L	P364309	
	SM 2540 C-97	TDS	46		mg/L	P364392	
	SM 2540 D-97	TSS	2	I	mg/L	P364398	
	SM 4500 F-C-97	Fluoride	0.041	I	mg F/L	P364313	
2086215	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P364283	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.88		mg N/L	P364465	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P364216	
	EPA 365.1 Rev. 2.0	Total-P	0.013		mg P/L	P364385	
	SM 5310 B-00	Organic Carbon	13		mg C/L	P364413	
2086217	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P364003	
2086244	EPA 200.7 Rev. 4.4	Barium	7.4		ug/L	P364002	
		Calcium	3.08		mg/L	P364002	
		Iron	100	I	ug/L	P364002	
		Magnesium	2.64		mg/L	P364002	
		Potassium	1.4		mg/L	P364002	
		Sodium	4.6		mg/L	P364002	
		Zinc	5.0	U	ug/L	P364002	
	EPA 200.8 Rev. 5.4	Aluminum	13	I	ug/L	P364002	
		Antimony	0.093	I	ug/L	P364002	
		Arsenic	1.22		ug/L	P364002	
		Boron**	28.3		ug/L	P364002	
		Cadmium	0.020	U	ug/L	P364002	
		Chromium	0.40	U	ug/L	P364002	
		Copper	0.76	I	ug/L	P364002	
		Lead	0.20	U	ug/L	P364002	
		Nickel	0.50	U	ug/L	P364002	
		Selenium	0.20	U	ug/L	P364002	
		Silver	0.010	U	ug/L	P364002	
		Thallium	0.10	U	ug/L	P364002	

Ref. Method and Comment:
SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Lake Ingram West **Collection Date/Time: 05/14/2019 11:08**

Field ID: G4CE0154 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2086214	EPA 180.1 Rev. 2.0	Turbidity	1.3		NTU	P364014	
	EPA 300.0 Rev. 2.1	Chloride	8.7		mg Cl/L	P364113	
		Sulfate	2.9		mg SO4/L	P364115	
	SM 2120 B	Color (true)	33		PCU	P364019	
	SM 2320 B-97	Total Alkalinity	10		mg CaCO3/L	P364309	
	SM 2540 C-97	TDS	46		mg/L	P364392	
	SM 2540 D-97	TSS	2	I	mg/L	P364398	
	SM 4500 F-C-97	Fluoride	0.042	I	mg F/L	P364313	
2086216	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	I	mg N/L	P364283	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.88		mg N/L	P364465	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P364216	
	EPA 365.1 Rev. 2.0	Total-P	0.012		mg P/L	P364386	
	SM 5310 B-00	Organic Carbon	14		mg C/L	P364413	
2086218	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P364003	
2086245	EPA 200.7 Rev. 4.4	Barium	2.6	I	ug/L	P364002	
		Calcium	3.21		mg/L	P364002	
		Iron	90	I	ug/L	P364002	
		Magnesium	2.68		mg/L	P364002	
		Potassium	1.4		mg/L	P364002	
		Sodium	4.7		mg/L	P364002	
		Zinc	5.0	U	ug/L	P364002	
	EPA 200.8 Rev. 5.4	Aluminum	13	I	ug/L	P364002	
		Antimony	0.096	I	ug/L	P364002	
		Arsenic	1.25		ug/L	P364002	
		Boron**	29.0		ug/L	P364002	
		Cadmium	0.020	U	ug/L	P364002	
		Chromium	0.40	U	ug/L	P364002	
		Copper	0.78	I	ug/L	P364002	
		Lead	0.20	U	ug/L	P364002	
		Nickel	0.50	U	ug/L	P364002	
		Selenium	0.20	U	ug/L	P364002	
		Silver	0.010	U	ug/L	P364002	
		Thallium	0.10	U	ug/L	P364002	

Ref. Method and Comment:
SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Quality Assurance Report
Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P364014

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P364015

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P364002

Component	Result	Code	Units
Barium	1.0	U	ug/L
Calcium	0.075	U	mg/L
Iron	30	U	ug/L
Magnesium	0.040	U	mg/L
Potassium	0.30	U	mg/L
Sodium	0.50	U	mg/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P364002

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Antimony	0.050	U	ug/L
Arsenic	0.050	U	ug/L
Boron	2.0	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.40	U	ug/L
Copper	0.40	U	ug/L
Lead	0.20	U	ug/L
Nickel	0.50	U	ug/L
Selenium	0.20	U	ug/L
Silver	0.010	U	ug/L
Thallium	0.10	U	ug/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P364113

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P364115

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Quality Assurance Report
Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P364283

Component	Result	Code	Units
Ammonia-N	0.002	U	mg N/L

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P364465

Component	Result	Code	Units
Kjeldahl Nitrogen	0.080	U	mg N/L

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P364467

Component	Result	Code	Units
Kjeldahl Nitrogen	0.080	U	mg N/L

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P364216

Component	Result	Code	Units
NO2NO3-N	0.004	U	mg N/L

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P364218

Component	Result	Code	Units
NO2NO3-N	0.004	U	mg N/L

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P364385

Component	Result	Code	Units
Total-P	0.002	U	mg P/L

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P364386

Component	Result	Code	Units
Total-P	0.002	U	mg P/L

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P364003

Component	Result	Code	Units
O-Phosphate-P	0.004	U	mg P/L

Reference Method: SM 2120 B
Batch ID: P364019

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Quality Assurance Report
Method Blank Results

Reference Method: SM 2320 B-97
Batch ID: P364309

Component	Result	Code	Units
Total Alkalinity	0.65	U	mg CaCO3/L

Reference Method: SM 2540 C-97
Batch ID: P364392

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P364398

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P364313

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P364413

Component	Result	Code	Units
Organic Carbon	0.50	U	mg C/L

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P364002

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	99.1		P	85 - 115
Calcium	94.5		P	85 - 115
Iron	99.0		P	85 - 115
Magnesium	105		P	85 - 115
Potassium	97.3		P	85 - 115
Sodium	90.7		P	85 - 115
Zinc	97.8		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P364002

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	96.1		P	85 - 115
Antimony	96.9		P	85 - 115
Arsenic	102		P	85 - 115
Boron	96.6		P	85 - 115
Cadmium	99.5		P	85 - 115
Chromium	99.8		P	85 - 115
Copper	99.8		P	85 - 115
Lead	99.9		P	85 - 115
Nickel	101		P	85 - 115
Selenium	99.8		P	85 - 115
Silver	97.9		P	85 - 115
Thallium	102		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P364113

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	98.7		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P364115

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	97.9		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P364283

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	102		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P364465

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	107		P	90 - 110

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P364467

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	97.8		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P364216

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	102		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P364218

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	102		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P364385

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	99.9		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P364386

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	100		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P364003

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	96.3		P	90 - 110

Reference Method: SM 2120 B
Batch ID: P364019

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	101		P	85 - 115

Reference Method: SM 2320 B-97
Batch ID: P364309

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	101		P	98 - 106

Reference Method: SM 4500 F-C-97
Batch ID: P364313

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.2		P	92 - 103

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-00
Batch ID: P364413

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.2		P	85 - 115

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P364002

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2085989	Barium	96.8		P	80 - 120
2085989	Calcium	92.4		P	80 - 120
2085989	Iron	101		P	80 - 120
2085989	Magnesium	95.0		P	80 - 120
2085989	Potassium	92.6		P	80 - 120
2085989	Sodium	91.1		P	80 - 120
2085989	Zinc	98.2		P	80 - 120
2086093	Barium	96.6	95.5	P/P	80 - 120
2086093	Calcium	95.2		P	80 - 120
2086093	Iron	98.5	97.3	P/P	80 - 120
2086093	Magnesium	100	99.8	P/P	80 - 120
2086093	Potassium	92.7	92.1	P/P	80 - 120
2086093	Sodium	95.4		P	80 - 120
2086093	Zinc	99.8	98.8	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P364002

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2085989	Aluminum	93.5		P	80 - 120
2085989	Antimony	97.4		P	80 - 120
2085989	Arsenic	103		P	80 - 120
2085989	Boron	93.6		P	80 - 120
2085989	Cadmium	99.4		P	80 - 120
2085989	Chromium	99.2		P	80 - 120
2085989	Copper	101		P	80 - 120
2085989	Lead	101		P	80 - 120
2085989	Nickel	100		P	80 - 120
2085989	Selenium	99.8		P	80 - 120
2085989	Silver	96.0		P	80 - 120
2085989	Thallium	104		P	80 - 120
2086093	Aluminum	93.1	91.6	P/P	80 - 120
2086093	Antimony	95.6	95.2	P/P	80 - 120
2086093	Arsenic	101	100	P/P	80 - 120
2086093	Boron	109	105	P/P	80 - 120
2086093	Cadmium	97.6	96.6	P/P	80 - 120
2086093	Chromium	95.1	94.8	P/P	80 - 120
2086093	Copper	98.3	97.1	P/P	80 - 120
2086093	Lead	98.9	98.4	P/P	80 - 120
2086093	Nickel	99.2	97.4	P/P	80 - 120
2086093	Selenium	98.5	97.6	P/P	80 - 120
2086093	Silver	94.9	94.4	P/P	80 - 120
2086093	Thallium	101	101	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P364113

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2086153	Chloride	101		P	90 - 110
2086219	Chloride	99.0		P	90 - 110

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P364115

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2086153	Sulfate	99.9		P	90 - 110
2086219	Sulfate	100		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P364283

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2086224	Ammonia-N	102	103	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P364465

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2086168	Kjeldahl Nitrogen	101	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P364467

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2086224	Kjeldahl Nitrogen	101	100	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P364216

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2086166	NO2NO3-N	101	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P364218

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2086223	NO2NO3-N	102	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P364385

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2086164	Total-P	99.6	96.3	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P364386

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2086216	Total-P	102	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P364003

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2086217	O-Phosphate-P	90.0	91.2	P/P	90 - 110

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P364313

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2086221	Fluoride	95.6	96.7	P/P	89 - 106

Reference Method: SM 5310 B-00
Batch ID: P364413

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2086216	Organic Carbon	97.9	96.7	P/P	85 - 115

Quality Assurance Report
Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P364014

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2086157	Turbidity	2.15	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P364015

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2086270	Turbidity	2.23	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P364002

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2086093	Barium	1.16	Spike	P	0 - 20
2086093	Calcium	0.130	Spike	P	0 - 20
2086093	Iron	1.22	Spike	P	0 - 20
2086093	Magnesium	0.482	Spike	P	0 - 20
2086093	Potassium	0.550	Spike	P	0 - 20
2086093	Sodium	0.617	Spike	P	0 - 20
2086093	Zinc	1.05	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P364002

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2086093	Aluminum	1.54	Spike	P	0 - 20
2086093	Antimony	0.421	Spike	P	0 - 20
2086093	Arsenic	1.13	Spike	P	0 - 20
2086093	Boron	2.14	Spike	P	0 - 20
2086093	Cadmium	0.978	Spike	P	0 - 20
2086093	Chromium	0.256	Spike	P	0 - 20
2086093	Copper	1.17	Spike	P	0 - 20
2086093	Lead	0.475	Spike	P	0 - 20
2086093	Nickel	1.85	Spike	P	0 - 20
2086093	Selenium	0.857	Spike	P	0 - 20
2086093	Silver	0.522	Spike	P	0 - 20
2086093	Thallium	0.373	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P364113

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2086219	Chloride	0.210	Sample	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P364115

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2086219	Sulfate	0.114	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P364283

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2086224	Ammonia-N	0.632	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P364465

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2086168	Kjeldahl Nitrogen	0.687	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P364467

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2086224	Kjeldahl Nitrogen	0.625	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P364216

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2086166	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P364218

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2086223	NO2NO3-N	0.489	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P364385

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2086164	Total-P	2.62	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P364386

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2086216	Total-P	1.29	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P364003

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2086217	O-Phosphate-P	1.32	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P364019

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2086213	Color (true)	1.24	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P364309

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2086221	Total Alkalinity	1.02	Sample	P	0 - 2.8

Reference Method: SM 2540 C-97
Batch ID: P364392

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2086219	TDS	2.92	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P364313

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2086221	Fluoride	0.968	Spike	P	0 - 2.5

Reference Method: SM 5310 B-00
Batch ID: P364413

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2086216	Organic Carbon	0.727	Spike	P	0 - 20

* Sample, spike and/or laboratory control sample precision (LCS) is reported.
Replicate spike precision may be reported when sample results are below quantifiable levels.

Quality Assurance Report
Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A91404
Included Lab Sample IDs: 2086213, 2086214, 2086219, 2086220, 2086221

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	101	102	P/P	90 - 110
Chloride	102	102	P/P	90 - 110
Sulfate	102	102	P/P	90 - 110
Sulfate	102	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A91453
Included Lab Sample IDs: 2086217, 2086218, 2086225, 2086226, 2086227

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	97.4	97.9	P/P	90 - 110
O-Phosphate-P	98.2	97.4	P/P	90 - 110
O-Phosphate-P	99.1	97.1	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A91457
Included Lab Sample IDs: 2086213, 2086214, 2086219, 2086220, 2086221

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.5	99.5	P/P	95 - 105

Reference Method: SM 2120 B
Run ID: A91460
Included Lab Sample IDs: 2086213, 2086214, 2086219, 2086220, 2086221

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	102	102	P/P	90 - 115

Reference Method: EPA 200.7 Rev. 4.4
Run ID: A91517
Included Lab Sample IDs: 2086244, 2086245

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	97.6	97.4	P/P	90 - 110
Calcium	97.9	97.6	P/P	90 - 110
Iron	97.9	97.4	P/P	90 - 110
Magnesium	97.9	96.8	P/P	90 - 110
Potassium	97.1	96.9	P/P	90 - 110
Sodium	97.5	100	P/P	90 - 110
Zinc	98.4	98.2	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A91529
Included Lab Sample IDs: 2086215, 2086216, 2086222, 2086223, 2086224

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	101	102	P/P	90 - 110
NO2NO3-N	102	102	P/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A91558
Included Lab Sample IDs: 2086215, 2086216, 2086222, 2086223, 2086224

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	104	105	P/P	90 - 110
Ammonia-N	105	105	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A91561
Included Lab Sample IDs: 2086244, 2086245

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	91.1	91.2	P/P	90 - 110
Antimony	93.7	92.7	P/P	90 - 110
Arsenic	97.1	95.8	P/P	90 - 110
Cadmium	93.8	93.9	P/P	90 - 110
Chromium	95.8	96.2	P/P	90 - 110
Copper	97.3	96.0	P/P	90 - 110
Lead	96.2	96.1	P/P	90 - 110
Nickel	96.9	95.8	P/P	90 - 110
Selenium	95.9	94.6	P/P	90 - 110
Silver	92.4	92.6	P/P	90 - 110
Thallium	93.0	92.2	P/P	90 - 110

Reference Method: SM 2320 B-97
Run ID: A91564
Included Lab Sample IDs: 2086213, 2086214, 2086219, 2086220, 2086221

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	100	102	P/P	90 - 110
Total Alkalinity	102	105	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Run ID: A91564
Included Lab Sample IDs: 2086213, 2086214, 2086219, 2086220, 2086221

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	98.5	99.1	P/P	90 - 110
Fluoride	98.6	98.5	P/P	90 - 110

Reference Method: SM 5310 B-00
Run ID: A91605
Included Lab Sample IDs: 2086215, 2086216, 2086222, 2086223, 2086224

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	99.1	99.1	P/P	90 - 110
Organic Carbon	99.1	99.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A91621
Included Lab Sample IDs: 2086215, 2086216, 2086222, 2086223, 2086224

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	100	100	P/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A91645
Included Lab Sample IDs: 2086244, 2086245

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Boron	95.9	106	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A91693
Included Lab Sample IDs: 2086215, 2086216, 2086222, 2086223, 2086224

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	100	96.2	P/P	90 - 110
Kjeldahl Nitrogen	96.2	93.9	P/P	90 - 110

* Pass/Fail determinations are made for each bracketing calibration verification check.
Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.
Where they are different, both control limits are provided.

Quality Assurance Report
Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery			Precision		
						LCS	SMP	MS
EPA 180.1 Rev. 2.0	Turbidity						2.15	
	Turbidity						2.23	
EPA 200.7 Rev. 4.4	Barium	99.1	96.8	96.6	95.5			1.16
	Calcium	94.5	92.4	95.2				0.130
	Iron	99.0	101	98.5	97.3			1.22
	Magnesium	105	95.0	100	99.8			0.482
	Potassium	97.3	92.6	92.7	92.1			0.550
	Sodium	90.7	91.1	95.4				0.617
	Zinc	97.8	98.2	99.8	98.8			1.05
EPA 200.8 Rev. 5.4	Aluminum	96.1	93.5	93.1	91.6			1.54
	Antimony	96.9	97.4	95.6	95.2			0.421
	Arsenic	102	103	101	100			1.13
	Boron	96.6	93.6	109	105			2.14
	Cadmium	99.5	99.4	97.6	96.6			0.978
	Chromium	99.8	99.2	95.1	94.8			0.256
	Copper	99.8	101	98.3	97.1			1.17
	Lead	99.9	101	98.9	98.4			0.475
	Nickel	101	100	99.2	97.4			1.85
	Selenium	99.8	99.8	98.5	97.6			0.857
	Silver	97.9	96.0	94.9	94.4			0.522
	Thallium	102	104	101	101			0.373
EPA 300.0 Rev. 2.1	Chloride	98.7	99.0	101			0.210	
	Sulfate	97.9	100	99.9			0.114	
EPA 350.1 Rev. 2.0	Ammonia-N	102	102	103				0.632
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	107	101	102				0.687
	Kjeldahl Nitrogen	97.8	101	100				0.625
EPA 353.2 Rev. 2.0	NO2NO3-N	102	101	101				0.0
	NO2NO3-N	102	102	102				0.489
EPA 365.1 Rev. 2.0	Total-P	99.9	99.6	96.3				2.62
	Total-P	100	102	101				1.29
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	96.3	90.0	91.2				1.32
SM 2120 B	Color (true)	101					1.24	
SM 2320 B-97	Total Alkalinity	101					1.02	
SM 2540 C-97	TDS						2.92	
SM 4500 F-C-97	Fluoride	97.2	95.6	96.7				0.968
SM 5310 B-00	Organic Carbon	98.2	97.9	96.7				0.727

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2086213, 2086214, 2086219, 2086220, 2086221
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2086244, 2086245
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2086244, 2086245
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2086213, 2086214, 2086219, 2086220, 2086221
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2086213, 2086214, 2086219, 2086220, 2086221
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2086215, 2086216, 2086222, 2086223, 2086224
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2086215, 2086216, 2086222, 2086223, 2086224

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2086215, 2086216, 2086222, 2086223, 2086224
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2086215, 2086216, 2086222, 2086223, 2086224
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2086217, 2086218, 2086225, 2086226, 2086227
SM 2120 B / E31780	True Color measured at 450 nm	2086213, 2086214, 2086219, 2086220, 2086221
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	2086213, 2086214, 2086219, 2086220, 2086221
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2086213, 2086214, 2086219, 2086220, 2086221
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2086213, 2086214, 2086219, 2086220, 2086221
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2086213, 2086214, 2086219, 2086220, 2086221
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2086215, 2086216, 2086222, 2086223, 2086224

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 180.1 Rev. 2.0	05/15/2019			05/15/2019 15:04	Sima Feizi	2086213, 2086214, 2086219, 2086220, 2086221
EPA 200.7 Rev. 4.4	05/15/2019	05/15/2019 17:15	Elliott D. Healy	05/17/2019 15:02	Betina Topolski	2086244
	05/15/2019	05/15/2019 17:15	Elliott D. Healy	05/17/2019 15:09	Betina Topolski	2086245
EPA 200.8 Rev. 5.4	05/15/2019	05/15/2019 17:15	Elliott D. Healy	05/21/2019 01:59	Martin Acosta	2086244
	05/15/2019	05/15/2019 17:15	Elliott D. Healy	05/21/2019 02:09	Martin Acosta	2086245
	05/15/2019	05/15/2019 17:15	Elliott D. Healy	05/23/2019 17:27	Martin Acosta	2086244
	05/15/2019	05/15/2019 17:15	Elliott D. Healy	05/23/2019 17:36	Martin Acosta	2086245
EPA 300.0 Rev. 2.1	05/15/2019			05/16/2019 21:15	Lipi Saha	2086219
	05/15/2019			05/17/2019 00:29	Lipi Saha	2086213
	05/15/2019			05/17/2019 00:41	Lipi Saha	2086214
	05/15/2019			05/17/2019 00:53	Lipi Saha	2086220
	05/15/2019			05/17/2019 01:05	Lipi Saha	2086221
EPA 350.1 Rev. 2.0	05/15/2019			05/17/2019 12:15	Ping Hua	2086224
	05/15/2019			05/17/2019 12:23	Ping Hua	2086215
	05/15/2019			05/17/2019 12:32	Ping Hua	2086216
	05/15/2019			05/17/2019 12:33	Ping Hua	2086222
	05/15/2019			05/17/2019 12:35	Ping Hua	2086223
EPA 351.2 Rev. 2.0	05/15/2019	05/23/2019 13:15	Adrian Shelby	05/28/2019 13:57	Joseph Suarez	2086215
	05/15/2019	05/23/2019 13:15	Adrian Shelby	05/28/2019 13:58	Joseph Suarez	2086216
	05/15/2019	05/23/2019 13:15	Adrian Shelby	05/28/2019 14:09	Joseph Suarez	2086222
	05/15/2019	05/23/2019 13:15	Adrian Shelby	05/28/2019 14:11	Joseph Suarez	2086223
	05/15/2019	05/23/2019 13:15	Adrian Shelby	05/28/2019 14:12	Joseph Suarez	2086224
EPA 353.2 Rev. 2.0	05/15/2019			05/20/2019 11:51	Beverly Y. Sanders	2086215
	05/15/2019			05/20/2019 11:52	Beverly Y. Sanders	2086216
	05/15/2019			05/20/2019 11:53	Beverly Y. Sanders	2086222
	05/15/2019			05/20/2019 12:00	Beverly Y. Sanders	2086223
	05/15/2019			05/20/2019 12:07	Beverly Y. Sanders	2086224
EPA 365.1 Rev. 2.0	05/15/2019	05/22/2019 02:01	Lipi Saha	05/23/2019 12:40	Rosalyn Ballman	2086215
	05/15/2019	05/22/2019 02:01	Lipi Saha	05/23/2019 12:42	Rosalyn Ballman	2086216
	05/15/2019	05/22/2019 02:01	Lipi Saha	05/23/2019 12:43	Rosalyn Ballman	2086222
	05/15/2019	05/22/2019 02:01	Lipi Saha	05/23/2019 12:44	Rosalyn Ballman	2086223
	05/15/2019	05/22/2019 02:01	Lipi Saha	05/23/2019 12:45	Rosalyn Ballman	2086224
EPA 365.1 Rev. 2.0 dissolved	05/15/2019			05/15/2019 15:48	Jhamieka S. Greenwood	2086217
	05/15/2019			05/15/2019 16:31	Jhamieka S. Greenwood	2086218
	05/15/2019			05/15/2019 16:32	Jhamieka S. Greenwood	2086225
	05/15/2019			05/15/2019 16:37	Jhamieka S. Greenwood	2086226
	05/15/2019			05/15/2019 16:38	Jhamieka S. Greenwood	2086227
SM 2120 B	05/15/2019			05/15/2019 16:45	Madeline Funaro	2086213
	05/15/2019			05/15/2019 16:46	Madeline Funaro	2086214

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 2120 B	05/15/2019			05/15/2019 16:47	Madeline Funaro	2086219
	05/15/2019			05/15/2019 16:48	Madeline Funaro	2086220
	05/15/2019			05/15/2019 16:49	Madeline Funaro	2086221
SM 2320 B-97	05/15/2019			05/21/2019 00:52	Dale L. Simmons	2086221
	05/15/2019			05/21/2019 03:39	Dale L. Simmons	2086213
	05/15/2019			05/21/2019 03:50	Dale L. Simmons	2086214
	05/15/2019			05/21/2019 04:02	Dale L. Simmons	2086219
	05/15/2019			05/21/2019 04:13	Dale L. Simmons	2086220
SM 2540 C-97	05/15/2019			05/16/2019 15:31	Yijie Li	2086213, 2086214, 2086219, 2086220, 2086221
SM 2540 D-97	05/15/2019			05/16/2019 15:31	Yijie Li	2086213, 2086214, 2086219, 2086220, 2086221
SM 4500 F-C-97	05/15/2019			05/21/2019 00:43	Dale L. Simmons	2086221
	05/15/2019			05/21/2019 03:39	Dale L. Simmons	2086213
	05/15/2019			05/21/2019 03:50	Dale L. Simmons	2086214
	05/15/2019			05/21/2019 04:02	Dale L. Simmons	2086219
	05/15/2019			05/21/2019 04:13	Dale L. Simmons	2086220
SM 5310 B-00	05/15/2019			05/22/2019 06:12	Julia Storbeck	2086216
	05/15/2019			05/22/2019 07:20	Julia Storbeck	2086215
	05/15/2019			05/22/2019 07:33	Julia Storbeck	2086222
	05/15/2019			05/22/2019 08:14	Julia Storbeck	2086223
	05/15/2019			05/22/2019 08:27	Julia Storbeck	2086224