

Chemical Analysis Report

CEN-DIST-2019-01-17-02

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

Event Description: **Felter / Ingram X2 / Lotta / Cypress X2**

Request ID: **RQ-2019-01-14-19**

Customer: **CEN-DIST**

Project ID: **SMP**

Send Reports to:

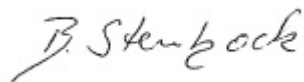
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Certified by: Dr. rer. nat. Bettina Steinbock, Environmental Administrator

Date Certified: 04-FEB-2019 15:52



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 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: LAKE LOTTA @ CENTER OF SOUTHERN LOBE Collection Date/Time: 01/16/2019 09:57

Field ID: G2CE0093

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2055092	EPA 180.1 Rev. 2.0	Turbidity	5.0		NTU	P357471	
	EPA 300.0 Rev. 2.1	Chloride	12		mg Cl/L	P357606	
		Sulfate	10		mg SO4/L	P357608	
	SM 2120 B	Color (true)	61		PCU	P357476	
	SM 2320 B-97	Total Alkalinity	57		mg CaCO3/L	P357951	
	SM 2540 C-97	TDS	114		mg/L	P357678	
	SM 2540 D-97	TSS	7	I	mg/L	P357697	
	SM 4500 F-C-97	Fluoride	0.12		mg F/L	P357954	
2055095	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P357688	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.0		mg N/L	P357623	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P357735	
	EPA 365.1 Rev. 2.0	Total-P	0.064		mg P/L	P357643	
	SM 5310 B-00	Organic Carbon	10		mg C/L	P357653	
2055098	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P357461	

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 FELTER @ CENTER

Collection Date/Time: 01/16/2019 12:45

Field ID: G1CE0042

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2055093	EPA 180.1 Rev. 2.0	Turbidity	1.2		NTU	P357471	
	EPA 300.0 Rev. 2.1	Chloride	16		mg Cl/L	P357691	
		Sulfate	1.4		mg SO4/L	P357692	
	SM 2120 B	Color (true)	97		PCU	P357476	
	SM 2320 B-97	Total Alkalinity	21		mg CaCO3/L	P357951	
	SM 2540 C-97	TDS	98		mg/L	P357678	
	SM 2540 D-97	TSS	2	U	mg/L	P357697	
	SM 4500 F-C-97	Fluoride	0.074	I	mg F/L	P357954	
2055096	EPA 350.1 Rev. 2.0	Ammonia-N	0.33		mg N/L	P357688	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	2.2		mg N/L	P357623	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.033		mg N/L	P357735	
	EPA 365.1 Rev. 2.0	Total-P	0.013		mg P/L	P357643	
	SM 5310 B-00	Organic Carbon	26		mg C/L	P357653	
2055099	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P357461	

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: 01/16/2019 10:43

Field ID: G4CE0155

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2055086	EPA 180.1 Rev. 2.0	Turbidity	1.4	A	NTU	P357471	
	EPA 300.0 Rev. 2.1	Chloride	8.4		mg Cl/L	P357606	
		Sulfate	3.3		mg SO4/L	P357608	
		Color (true)	40		PCU	P357475	
	SM 2320 B-97	Total Alkalinity	9.3		mg CaCO3/L	P357951	
	SM 2540 C-97	TDS	50		mg/L	P357676	
	SM 2540 D-97	TSS	2	I	mg/L	P357696	
	SM 4500 F-C-97	Fluoride	0.041	I	mg F/L	P357954	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P357688	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.90		mg N/L	P357532	
2055088	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P357734	
	EPA 365.1 Rev. 2.0	Total-P	0.013		mg P/L	P357642	
	SM 5310 B-00	Organic Carbon	11		mg C/L	P357653	
	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.004	U	mg P/L	P357461	
	dissolved						
2055124	EPA 200.7 Rev. 4.4	Barium	4.3		ug/L	P357479	
		Calcium	3.13		mg/L	P357479	
		Iron	73	I	ug/L	P357479	
		Magnesium	2.62		mg/L	P357479	
		Potassium	1.4		mg/L	P357479	
		Sodium	4.5		mg/L	P357479	
		Zinc	5.0	U	ug/L	P357479	
		Aluminum	36		ug/L	P357479	
		Antimony	0.13	I	ug/L	P357479	
		Arsenic	1.38		ug/L	P357479	
	EPA 200.8 Rev. 5.4	Boron**	24.5		ug/L	P357479	
		Cadmium	0.020	U	ug/L	P357479	
		Chromium	0.40	U	ug/L	P357479	
		Copper	1.25		ug/L	P357479	
		Lead	0.22	I	ug/L	P357479	
		Nickel	0.50	U	ug/L	P357479	
		Selenium	0.20	U	ug/L	P357479	
		Silver	0.010	U	ug/L	P357479	
		Thallium	0.10	U	ug/L	P357479	

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: 01/16/2019 10:52

Field ID: G4CE0154

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2055087	EPA 180.1 Rev. 2.0	Turbidity	1.3		NTU	P357471	
	EPA 300.0 Rev. 2.1	Chloride	8.5		mg Cl/L	P357606	
		Sulfate	3.4		mg SO4/L	P357608	
		Color (true)	40		PCU	P357475	
	SM 2320 B-97	Total Alkalinity	9.4		mg CaCO3/L	P357951	
	SM 2540 C-97	TDS	50		mg/L	P357676	
	SM 2540 D-97	TSS	2	U	mg/L	P357696	
	SM 4500 F-C-97	Fluoride	0.040	I	mg F/L	P357954	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P357688	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.92		mg N/L	P357623	
2055089	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P357735	
	EPA 365.1 Rev. 2.0	Total-P	0.011		mg P/L	P357642	
	SM 5310 B-00	Organic Carbon	12		mg C/L	P357653	
	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.004	U	mg P/L	P357461	
	dissolved						
2055125	EPA 200.7 Rev. 4.4	Barium	4.5		ug/L	P357479	
		Calcium	3.06		mg/L	P357479	
		Iron	71	I	ug/L	P357479	
		Magnesium	2.53		mg/L	P357479	
		Potassium	1.3		mg/L	P357479	
		Sodium	4.3		mg/L	P357479	
		Zinc	6.2	I	ug/L	P357479	
		Aluminum	34		ug/L	P357479	
		Antimony	0.14	I	ug/L	P357479	
		Arsenic	1.41		ug/L	P357479	
	EPA 200.8 Rev. 5.4	Boron**	24.8		ug/L	P357479	
		Cadmium	0.020	U	ug/L	P357479	
		Chromium	0.40	U	ug/L	P357479	
		Copper	1.09		ug/L	P357479	
		Lead	0.20	U	ug/L	P357479	
		Nickel	0.50	U	ug/L	P357479	
		Selenium	0.20	U	ug/L	P357479	
		Silver	0.010	U	ug/L	P357479	
		Thallium	0.10	U	ug/L	P357479	

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 CENTRAL LOBE

Collection Date/Time: 01/16/2019 11:31

Field ID: G4CE0156

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2055094	EPA 180.1 Rev. 2.0	Turbidity	1.5		NTU	P357471	
	EPA 300.0 Rev. 2.1	Chloride	30		mg Cl/L	P357691	
		Sulfate	23		mg SO4/L	P357692	
	SM 2120 B	Color (true)	22		PCU	P357476	
	SM 2320 B-97	Total Alkalinity	26	A	mg CaCO3/L	P357951	
	SM 2540 C-97	TDS	125		mg/L	P357678	
	SM 2540 D-97	TSS	2	U	mg/L	P357697	
	SM 4500 F-C-97	Fluoride	0.056	I	mg F/L	P357954	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.011		mg N/L	P357688	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.68		mg N/L	P357623	
2055097	EPA 353.2 Rev. 2.0	NO2NO3-N	0.026		mg N/L	P357735	
	EPA 365.1 Rev. 2.0	Total-P	0.015		mg P/L	P357643	
	SM 5310 B-00	Organic Carbon	8.2		mg C/L	P357653	
	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.004	U	mg P/L	P357461	
	dissolved						

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: CYPRESS CREEK @ SR 535

Collection Date/Time: 01/16/2019 14:02

Field ID: G4CE0008

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2055080	EPA 180.1 Rev. 2.0	Turbidity	0.55		NTU	P357470	
	EPA 300.0 Rev. 2.1	Chloride	37		mg Cl/L	P357606	
		Sulfate	18		mg SO4/L	P357608	
		Color (true)	150		PCU	P357475	
	SM 2320 B-97	Total Alkalinity	8.5		mg CaCO3/L	P357951	
	SM 2540 C-97	TDS	140		mg/L	P357676	
	SM 2540 D-97	TSS	2	U	mg/L	P357696	
	SM 4500 F-C-97	Fluoride	0.081	I	mg F/L	P357954	
2055082	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P357688	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.66		mg N/L	P357532	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.005	I	mg N/L	P357734	
	EPA 365.1 Rev. 2.0	Total-P	0.009		mg P/L	P357642	
	SM 5310 B-00	Organic Carbon	15		mg C/L	P357653	
2055084	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P357464	
2055122	EPA 200.7 Rev. 4.4	Barium	6.6		ug/L	P357479	
		Calcium	6.31		mg/L	P357479	
		Iron	79	I	ug/L	P357479	
		Magnesium	4.32		mg/L	P357479	
		Potassium	7.0		mg/L	P357479	
		Sodium	21.8		mg/L	P357479	
		Zinc	5.0	U	ug/L	P357479	
	EPA 200.8 Rev. 5.4	Aluminum	40		ug/L	P357479	
		Antimony	0.050	U	ug/L	P357479	
		Arsenic	0.43		ug/L	P357479	
		Boron**	40.3		ug/L	P357479	
		Cadmium	0.020	U	ug/L	P357479	
		Chromium	0.40	U	ug/L	P357479	
		Copper	0.40	U	ug/L	P357479	
		Lead	0.20	U	ug/L	P357479	
		Nickel	0.50	U	ug/L	P357479	
		Selenium	0.20	U	ug/L	P357479	
		Silver	0.010	U	ug/L	P357479	
		Thallium	0.10	U	ug/L	P357479	

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: CYPRESS CREEL @ JACARANDA

Collection Date/Time: 01/16/2019 14:42

Field ID: G4CE0157

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2055081	EPA 180.1 Rev. 2.0	Turbidity	0.60		NTU	P357470	
	EPA 300.0 Rev. 2.1	Chloride	37		mg Cl/L	P357606	
		Sulfate	18		mg SO4/L	P357608	
		Color (true)	130		PCU	P357475	
	SM 2320 B-97	Total Alkalinity	9.8		mg CaCO3/L	P357951	
	SM 2540 C-97	TDS	133		mg/L	P357676	
	SM 2540 D-97	TSS	2	U	mg/L	P357696	
	SM 4500 F-C-97	Fluoride	0.079	I	mg F/L	P357954	
2055083	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P357688	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.64		mg N/L	P357532	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.009	I	mg N/L	P357734	
	EPA 365.1 Rev. 2.0	Total-P	0.008		mg P/L	P357642	
	SM 5310 B-00	Organic Carbon	14		mg C/L	P357653	
2055085	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P357461	
2055123	EPA 200.7 Rev. 4.4	Barium	6.3		ug/L	P357479	
		Calcium	7.11		mg/L	P357479	
		Iron	68	I	ug/L	P357479	
		Magnesium	4.35		mg/L	P357479	
		Potassium	6.4		mg/L	P357479	
		Sodium	21.8		mg/L	P357479	
		Zinc	5.0	U	ug/L	P357479	
	EPA 200.8 Rev. 5.4	Aluminum	34		ug/L	P357479	
		Antimony	0.050	U	ug/L	P357479	
		Arsenic	0.48		ug/L	P357479	
		Boron**	37.5		ug/L	P357479	
		Cadmium	0.020	U	ug/L	P357479	
		Chromium	0.40	U	ug/L	P357479	
		Copper	0.40	U	ug/L	P357479	
		Lead	0.21	I	ug/L	P357479	
		Nickel	0.50	U	ug/L	P357479	
		Selenium	0.20	U	ug/L	P357479	
		Silver	0.010	U	ug/L	P357479	
		Thallium	0.10	U	ug/L	P357479	

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: P357470

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P357471

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P357479

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: P357479

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: P357606

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P357608

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Quality Assurance Report

Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P357691

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P357692

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P357688

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P357532

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P357623

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P357734

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P357735

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P357642

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P357643

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P357461

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P357464

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

Reference Method: SM 2120 B
Batch ID: P357475

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B
Batch ID: P357476

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P357951

Component	Result	Code	Units
Total Alkalinity	0.65	U	mg CaCO ₃ /L

Reference Method: SM 2540 C-97
Batch ID: P357676

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P357678

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P357696

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P357697

Component	Result	Code	Units
TSS	2	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 4500 F-C-97
Batch ID: P357954

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P357653

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: P357479

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	102		P	85 - 115
Calcium	105		P	85 - 115
Iron	106		P	85 - 115
Magnesium	109		P	85 - 115
Potassium	105		P	85 - 115
Sodium	105		P	85 - 115
Zinc	102		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P357479

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	101		P	85 - 115
Antimony	98.5		P	85 - 115
Arsenic	102		P	85 - 115
Boron	106		P	85 - 115
Cadmium	101		P	85 - 115
Chromium	98.9		P	85 - 115
Copper	99.4		P	85 - 115
Lead	98.4		P	85 - 115
Nickel	97.7		P	85 - 115
Selenium	101		P	85 - 115
Silver	103		P	85 - 115
Thallium	98.7		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P357606

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P357608

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P357691

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P357692

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	91.4		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P357688

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	96.7		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P357532

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	103		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P357623

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	104		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P357734

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: P357735

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: P357642

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: P357643

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	97.6		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P357461

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	96.2		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P357464

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	97.5		P	90 - 110

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 2120 B
Batch ID: P357475

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	102		P	85 - 115

Reference Method: SM 2120 B
Batch ID: P357476

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	104		P	85 - 115

Reference Method: SM 2320 B-97
Batch ID: P357951

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	101		P	98 - 107

Reference Method: SM 4500 F-C-97
Batch ID: P357954

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.9		P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P357653

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.3		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P357479

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2054962	Barium	99.3		P	80 - 120
2054962	Calcium	97.6		P	80 - 120
2054962	Iron	103		P	80 - 120
2054962	Magnesium	104		P	80 - 120
2054962	Potassium	102		P	80 - 120
2054962	Sodium	108		P	80 - 120
2054962	Zinc	103		P	80 - 120
2055124	Barium	98.6	98.2	P/P	80 - 120
2055124	Calcium	102	103	P/P	80 - 120
2055124	Iron	103	104	P/P	80 - 120
2055124	Magnesium	106	105	P/P	80 - 120
2055124	Potassium	104	104	P/P	80 - 120
2055124	Sodium	105		P	80 - 120
2055124	Zinc	101	100	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P357479

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2054962	Aluminum	97.5		P	80 - 120
2054962	Antimony	96.5		P	80 - 120
2054962	Arsenic	101		P	80 - 120
2054962	Boron	99.8		P	80 - 120
2054962	Cadmium	98.7		P	80 - 120
2054962	Chromium	95.2		P	80 - 120
2054962	Copper	95.6		P	80 - 120
2054962	Lead	97.7		P	80 - 120
2054962	Nickel	96.5		P	80 - 120
2054962	Selenium	96.8		P	80 - 120
2054962	Silver	100		P	80 - 120
2054962	Thallium	103		P	80 - 120
2055124	Aluminum	99.1	101	P/P	80 - 120
2055124	Antimony	96.6	97.7	P/P	80 - 120
2055124	Arsenic	103	105	P/P	80 - 120
2055124	Boron	101	103	P/P	80 - 120
2055124	Cadmium	100	101	P/P	80 - 120
2055124	Chromium	98.6	99.5	P/P	80 - 120
2055124	Copper	96.4	98.4	P/P	80 - 120
2055124	Lead	97.0	98.7	P/P	80 - 120
2055124	Nickel	97.4	99.0	P/P	80 - 120
2055124	Selenium	102	103	P/P	80 - 120
2055124	Silver	103	104	P/P	80 - 120
2055124	Thallium	105	107	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P357606

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2054923	Chloride	98.5		P	90 - 110
2054993	Chloride	100		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P357608

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2054923	Sulfate	99.8		P	90 - 110
2054993	Sulfate	99.0		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P357691

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2055093	Chloride	98.2		P	90 - 110
2055414	Chloride	96.4		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P357692

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2055093	Sulfate	95.8		P	90 - 110
2055414	Sulfate	92.7		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P357688

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2055095	Ammonia-N	98.7	96.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P357532

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2055056	Kjeldahl Nitrogen	95.0	97.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P357623

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2055287	Kjeldahl Nitrogen	102	99.1	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P357734

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2055052	NO2NO3-N	103	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P357735

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2055089	NO2NO3-N	102	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P357642

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2055088	Total-P	106	107	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P357643

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2055287	Total-P	104	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P357461

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2055091	O-Phosphate-P	90.8	92.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P357464

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2055084	O-Phosphate-P	98.5	99.1	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P357954

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2055094	Fluoride	96.9	96.9	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P357653

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2055054	Organic Carbon	96.4	95.2	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P357470

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2054945	Turbidity	6.98	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P357471

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2055086	Turbidity	5.52	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P357479

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2055124	Barium	0.448	Spike	P	0 - 20
2055124	Calcium	0.603	Spike	P	0 - 20
2055124	Iron	0.902	Spike	P	0 - 20
2055124	Magnesium	0.116	Spike	P	0 - 20
2055124	Potassium	0.145	Spike	P	0 - 20
2055124	Sodium	0.847	Spike	P	0 - 20
2055124	Zinc	0.442	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P357479

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2055124	Aluminum	1.43	Spike	P	0 - 20
2055124	Antimony	1.15	Spike	P	0 - 20
2055124	Arsenic	1.88	Spike	P	0 - 20
2055124	Boron	1.96	Spike	P	0 - 20
2055124	Cadmium	0.790	Spike	P	0 - 20
2055124	Chromium	0.943	Spike	P	0 - 20
2055124	Copper	1.95	Spike	P	0 - 20
2055124	Lead	1.72	Spike	P	0 - 20
2055124	Nickel	1.57	Spike	P	0 - 20
2055124	Selenium	1.01	Spike	P	0 - 20
2055124	Silver	1.13	Spike	P	0 - 20
2055124	Thallium	1.52	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P357606

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2054923	Chloride	0.252	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P357608

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2054923	Sulfate	0.265	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P357691

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2055414	Chloride	0.921	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P357692

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2055414	Sulfate	0.779	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P357688

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2055095	Ammonia-N	2.35	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P357532

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2055056	Kjeldahl Nitrogen	0.984	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P357623

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2055287	Kjeldahl Nitrogen	2.48	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P357734

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2055052	NO2NO3-N	1.01	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P357735

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2055089	NO2NO3-N	0.491	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P357642

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2055088	Total-P	0.252	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P357643

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2055287	Total-P	0.257	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P357461

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2055091	O-Phosphate-P	1.96	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P357464

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2055084	O-Phosphate-P	0.607	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P357475

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2054992	Color (true)	0.0669	Sample	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P357476

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2055191	Color (true)	1.77	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P357951

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2055094	Total Alkalinity	0.187	Sample	P	0 - 1.6

Reference Method: SM 2540 C-97
Batch ID: P357676

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2055203	TDS	1.06	Sample	P	0 - 10

Quality Assurance Report Precision

Reference Method: SM 2540 C-97
Batch ID: P357678

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2055234	TDS	0.465	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P357954

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2055094	Fluoride	0.0	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
Batch ID: P357653

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2055054	Organic Carbon	0.729	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 365.1 Rev. 2.0 dissolved

Run ID: A88882

Included Lab Sample IDs: 2055084, 2055085, 2055090, 2055091, 2055098, 2055099, 2055100

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	100	100	P/P	90 - 110
O-Phosphate-P	98.6	99.6	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A88883

Included Lab Sample IDs: 2055080, 2055081, 2055086, 2055087, 2055092, 2055093, 2055094

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	99.5	P/P	95 - 105
Turbidity	99.5	100	P/P	95 - 105

Reference Method: SM 2120 B

Run ID: A88884

Included Lab Sample IDs: 2055080, 2055081, 2055086, 2055087, 2055092, 2055093, 2055094

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	102	102	P/P	90 - 115
Color (true)	102	103	P/P	90 - 115
Color (true)	104	103	P/P	90 - 115

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A88925

Included Lab Sample IDs: 2055122, 2055123, 2055124, 2055125

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	96.9	96.0	P/P	90 - 110
Barium	98.7	96.9	P/P	90 - 110
Calcium	95.9	92.5	P/P	90 - 110
Calcium	97.5	95.9	P/P	90 - 110
Iron	97.6	96.8	P/P	90 - 110
Iron	99.5	97.6	P/P	90 - 110
Magnesium	97.0	96.1	P/P	90 - 110
Magnesium	98.9	97.0	P/P	90 - 110
Potassium	93.7	92.2	P/P	90 - 110
Potassium	95.0	93.7	P/P	90 - 110
Zinc	100	98.3	P/P	90 - 110
Zinc	98.3	97.9	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A88931

Included Lab Sample IDs: 2055080, 2055081, 2055086, 2055087, 2055092, 2055093, 2055094

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	104	105	P/P	90 - 110
Chloride	105	104	P/P	90 - 110
Chloride	99.3	100	P/P	90 - 110
Sulfate	103	104	P/P	90 - 110
Sulfate	104	103	P/P	90 - 110
Sulfate	97.8	98.1	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A88934

Included Lab Sample IDs: 2055122, 2055123, 2055124, 2055125

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sodium	95.0	97.5	P/P	90 - 110
Sodium	97.5	97.3	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A88948

Included Lab Sample IDs: 2055082, 2055083, 2055088, 2055089, 2055095, 2055096, 2055097

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.8	100	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A88964

Included Lab Sample IDs: 2055082, 2055083, 2055088, 2055089, 2055095, 2055096, 2055097

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	100	97.6	P/P	90 - 110
Ammonia-N	100	100	P/P	90 - 110
Ammonia-N	99.4	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A88976

Included Lab Sample IDs: 2055082, 2055083, 2055088, 2055089, 2055095, 2055096, 2055097

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A88978

Included Lab Sample IDs: 2055082, 2055083, 2055088

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	97.6	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A88979

Included Lab Sample IDs: 2055122, 2055123, 2055124, 2055125

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	102	102	P/P	90 - 110
Aluminum	102	102	P/P	90 - 110
Antimony	100	98.9	P/P	90 - 110
Antimony	98.9	98.2	P/P	90 - 110
Arsenic	102	105	P/P	90 - 110
Arsenic	105	105	P/P	90 - 110
Boron	102	105	P/P	90 - 110
Boron	105	107	P/P	90 - 110
Cadmium	100	101	P/P	90 - 110
Cadmium	101	100	P/P	90 - 110
Chromium	101	102	P/P	90 - 110
Chromium	102	102	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A88979

Included Lab Sample IDs: 2055122, 2055123, 2055124, 2055125

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Copper	101	101	P/P	90 - 110
Copper	101	101	P/P	90 - 110
Lead	102	101	P/P	90 - 110
Lead	102	102	P/P	90 - 110
Nickel	101	101	P/P	90 - 110
Nickel	101	100	P/P	90 - 110
Selenium	102	105	P/P	90 - 110
Selenium	105	105	P/P	90 - 110
Silver	104	104	P/P	90 - 110
Silver	105	104	P/P	90 - 110
Thallium	96.1	97.5	P/P	90 - 110
Thallium	96.8	96.1	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A88990

Included Lab Sample IDs: 2055089, 2055095, 2055096, 2055097

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	99.3	97.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A89014

Included Lab Sample IDs: 2055095

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	103	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A89033

Included Lab Sample IDs: 2055082, 2055083, 2055088, 2055089, 2055096, 2055097

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

Reference Method: SM 2320 B-97

Run ID: A89058

Included Lab Sample IDs: 2055080, 2055081, 2055086, 2055087, 2055092, 2055093, 2055094

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	102	99.8	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A89058

Included Lab Sample IDs: 2055080, 2055081, 2055086, 2055087, 2055092, 2055093, 2055094

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.5	100	P/P	90 - 110

Quality Assurance Report

Calibration Verification

* 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 SMP	MS
			LCS				
EPA 180.1 Rev. 2.0	Turbidity					6.98	
	Turbidity					5.52	
EPA 200.7 Rev. 4.4	Barium	102	99.3	98.6	98.2		0.448
	Calcium	105	97.6	102	103		0.603
	Iron	106	103	103	104		0.902
	Magnesium	109	104	106	105		0.116
	Potassium	105	102	104	104		0.145
	Sodium	105	108	105			0.847
	Zinc	102	103	101	100		0.442
EPA 200.8 Rev. 5.4	Aluminum	101	97.5	99.1	101		1.43
	Antimony	98.5	96.5	96.6	97.7		1.15
	Arsenic	102	101	103	105		1.88
	Boron	106	99.8	101	103		1.96
	Cadmium	101	98.7	100	101		0.790
	Chromium	98.9	95.2	98.6	99.5		0.943
	Copper	99.4	95.6	96.4	98.4		1.95
	Lead	98.4	97.7	97.0	98.7		1.72
	Nickel	97.7	96.5	97.4	99.0		1.57
	Selenium	101	96.8	102	103		1.01
	Silver	103	100	103	104		1.13
	Thallium	98.7	103	105	107		1.52
EPA 300.0 Rev. 2.1	Chloride	100	98.5	100		0.252	
	Chloride	100	96.4	98.2		0.921	
	Sulfate	102	99.8	99.0		0.265	
	Sulfate	91.4	92.7	95.8		0.779	
EPA 350.1 Rev. 2.0	Ammonia-N	96.7	98.7	96.2			2.35
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	103	95.0	97.0			0.984
	Kjeldahl Nitrogen	104	102	99.1			2.48
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	102	103	101			1.01
	NO ₂ NO ₃ -N	102	102	102			0.491
EPA 365.1 Rev. 2.0	Total-P	99.9	106	107			0.252
	Total-P	97.6	104	104			0.257
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	96.2	90.8	92.6			1.96
	O-Phosphate-P	97.5	98.5	99.1			0.607
SM 2120 B	Color (true)	102				0.0669	
	Color (true)	104				1.77	
SM 2320 B-97	Total Alkalinity	101				0.187	
SM 2540 C-97	TDS					1.06	
	TDS					0.465	
SM 4500 F-C-97	Fluoride	97.9	96.9	96.9			0.0
SM 5310 B-00	Organic Carbon	97.3	96.4	95.2			0.729

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2055080, 2055081, 2055086, 2055087, 2055092, 2055093, 2055094
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2055122, 2055123, 2055124, 2055125
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2055122, 2055123, 2055124, 2055125
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2055080, 2055081, 2055086, 2055087, 2055092, 2055093, 2055094

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2055080, 2055081, 2055086, 2055087, 2055092, 2055093, 2055094
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2055082, 2055083, 2055088, 2055089, 2055095, 2055096, 2055097
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2055082, 2055083, 2055088, 2055089, 2055095, 2055096, 2055097
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2055082, 2055083, 2055088, 2055089, 2055095, 2055096, 2055097
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2055082, 2055083, 2055088, 2055089, 2055095, 2055096, 2055097
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2055084, 2055085, 2055090, 2055091, 2055098, 2055099, 2055100
SM 2120 B / E31780	True Color measured at 450 nm	2055080, 2055081, 2055086, 2055087, 2055092, 2055093, 2055094
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2055080, 2055081, 2055086, 2055087, 2055092, 2055093, 2055094
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2055080, 2055081, 2055086, 2055087, 2055092, 2055093, 2055094
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2055080, 2055081, 2055086, 2055087, 2055092, 2055093, 2055094
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2055080, 2055081, 2055086, 2055087, 2055092, 2055093, 2055094
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2055082, 2055083, 2055088, 2055089, 2055095, 2055096, 2055097

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	01/17/2019			01/17/2019 16:08	Sima Feizi	2055080, 2055081, 2055086, 2055087, 2055092, 2055093, 2055094
EPA 200.7 Rev. 4.4	01/17/2019	01/17/2019 18:40	Elliott D. Healy	01/18/2019 16:55	Betina Topolski	2055122
	01/17/2019	01/17/2019 18:40	Elliott D. Healy	01/18/2019 17:02	Betina Topolski	2055123
	01/17/2019	01/17/2019 18:40	Elliott D. Healy	01/18/2019 17:30	Betina Topolski	2055124
	01/17/2019	01/17/2019 18:40	Elliott D. Healy	01/18/2019 17:52	Betina Topolski	2055125
	01/17/2019	01/17/2019 18:40	Elliott D. Healy	01/22/2019 12:10	Betina Topolski	2055122
	01/17/2019	01/17/2019 18:40	Elliott D. Healy	01/22/2019 12:13	Betina Topolski	2055123
	01/17/2019	01/17/2019 18:40	Elliott D. Healy	01/22/2019 12:21	Betina Topolski	2055124
	01/17/2019	01/17/2019 18:40	Elliott D. Healy	01/22/2019 12:39	Betina Topolski	2055125
EPA 200.8 Rev. 5.4	01/17/2019	01/17/2019 18:40	Elliott D. Healy	01/23/2019 20:14	Robert K Palmer	2055122
	01/17/2019	01/17/2019 18:40	Elliott D. Healy	01/23/2019 20:24	Robert K Palmer	2055123
	01/17/2019	01/17/2019 18:40	Elliott D. Healy	01/23/2019 20:33	Robert K Palmer	2055124
	01/17/2019	01/17/2019 18:40	Elliott D. Healy	01/23/2019 21:21	Robert K Palmer	2055125
EPA 300.0 Rev. 2.1	01/17/2019			01/19/2019 11:00	Lipi Saha	2055080
	01/17/2019			01/19/2019 11:12	Lipi Saha	2055081
	01/17/2019			01/19/2019 11:48	Lipi Saha	2055086
	01/17/2019			01/19/2019 12:00	Lipi Saha	2055087
	01/17/2019			01/19/2019 12:13	Lipi Saha	2055092
	01/17/2019			01/22/2019 17:36	Lipi Saha	2055093
	01/17/2019			01/22/2019 18:00	Lipi Saha	2055094
	01/17/2019			01/22/2019 12:32	Ping Hua	2055095
EPA 350.1 Rev. 2.0	01/17/2019			01/22/2019 12:41	Ping Hua	2055082
	01/17/2019			01/22/2019 12:42	Ping Hua	2055083
	01/17/2019			01/22/2019 12:50	Ping Hua	2055088
	01/17/2019			01/22/2019 12:51	Ping Hua	2055089
	01/17/2019			01/22/2019 13:59	Ping Hua	2055096
	01/17/2019			01/22/2019 14:00	Ping Hua	2055097
	01/17/2019	01/18/2019 11:15	Adrian Shelby	01/22/2019 14:43	Joseph Suarez	2055082
	01/17/2019	01/18/2019 11:15	Adrian Shelby	01/22/2019 14:44	Joseph Suarez	2055083
EPA 351.2 Rev. 2.0	01/17/2019	01/18/2019 11:15	Adrian Shelby	01/22/2019 14:46	Joseph Suarez	2055088
	01/17/2019	01/22/2019 12:00	Adrian Shelby	01/24/2019 09:40	Joseph Suarez	2055089
	01/17/2019	01/22/2019 12:00	Adrian Shelby	01/24/2019 09:41	Joseph Suarez	2055095
	01/17/2019	01/22/2019 12:00	Adrian Shelby	01/24/2019 09:43	Joseph Suarez	2055096
	01/17/2019	01/22/2019 12:00	Adrian Shelby	01/24/2019 09:44	Joseph Suarez	2055097
	01/17/2019			01/23/2019 11:04	Beverly Y. Sanders	2055082
	01/17/2019			01/23/2019 11:05	Beverly Y. Sanders	2055083
	01/17/2019			01/23/2019 11:06	Beverly Y. Sanders	2055088
EPA 353.2 Rev. 2.0	01/17/2019			01/23/2019 11:13	Beverly Y. Sanders	2055089
	01/17/2019			01/23/2019 11:19	Beverly Y. Sanders	2055095

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 353.2 Rev. 2.0	01/17/2019			01/23/2019 11:20	Beverly Y. Sanders	2055096
	01/17/2019			01/23/2019 11:22	Beverly Y. Sanders	2055097
EPA 365.1 Rev. 2.0	01/17/2019	01/22/2019 11:40	Sima Feizi	01/24/2019 15:42	Rosalyn Ballman	2055095
	01/17/2019	01/22/2019 11:40	Sima Feizi	01/25/2019 15:30	Rosalyn Ballman	2055082
	01/17/2019	01/22/2019 11:40	Sima Feizi	01/25/2019 15:31	Rosalyn Ballman	2055083
	01/17/2019	01/22/2019 11:40	Sima Feizi	01/25/2019 15:39	Rosalyn Ballman	2055088
	01/17/2019	01/22/2019 11:40	Sima Feizi	01/25/2019 15:40	Rosalyn Ballman	2055089
	01/17/2019	01/22/2019 11:40	Sima Feizi	01/25/2019 15:42	Rosalyn Ballman	2055096
	01/17/2019	01/22/2019 11:40	Sima Feizi	01/25/2019 15:43	Rosalyn Ballman	2055097
	01/17/2019			01/17/2019 13:32	Jhamieka S. Greenwood	2055091
EPA 365.1 Rev. 2.0 dissolved	01/17/2019			01/17/2019 13:35	Jhamieka S. Greenwood	2055085
	01/17/2019			01/17/2019 13:36	Jhamieka S. Greenwood	2055090, 2055098
	01/17/2019			01/17/2019 13:37	Jhamieka S. Greenwood	2055099
	01/17/2019			01/17/2019 13:38	Jhamieka S. Greenwood	2055100
	01/17/2019			01/17/2019 14:23	Jhamieka S. Greenwood	2055084
	01/17/2019			01/17/2019 15:46	Chelsea Hernandez	2055081
SM 2120 B	01/17/2019			01/17/2019 15:47	Chelsea Hernandez	2055086
	01/17/2019			01/17/2019 15:48	Chelsea Hernandez	2055087
	01/17/2019			01/17/2019 15:52	Chelsea Hernandez	2055092
	01/17/2019			01/17/2019 15:53	Chelsea Hernandez	2055093, 2055094
	01/17/2019			01/17/2019 16:19	Chelsea Hernandez	2055080
	01/17/2019			01/24/2019 08:40	Dale L. Simmons	2055094
SM 2320 B-97	01/17/2019			01/24/2019 08:58	Dale L. Simmons	2055080
	01/17/2019			01/24/2019 09:09	Dale L. Simmons	2055081
	01/17/2019			01/24/2019 09:20	Dale L. Simmons	2055086
	01/17/2019			01/24/2019 09:31	Dale L. Simmons	2055087
	01/17/2019			01/24/2019 09:44	Dale L. Simmons	2055092
	01/17/2019			01/24/2019 09:56	Dale L. Simmons	2055093
SM 2540 C-97	01/17/2019			01/18/2019 20:10	Mariam Hanna	2055080, 2055081, 2055086, 2055087, 2055092, 2055093, 2055094
SM 2540 D-97	01/17/2019			01/18/2019 20:10	Mariam Hanna	2055080, 2055081, 2055086, 2055087, 2055092, 2055093, 2055094
SM 4500 F-C-97	01/17/2019			01/24/2019 08:31	Dale L. Simmons	2055094
	01/17/2019			01/24/2019 08:58	Dale L. Simmons	2055080
	01/17/2019			01/24/2019 09:09	Dale L. Simmons	2055081
	01/17/2019			01/24/2019 09:20	Dale L. Simmons	2055086
	01/17/2019			01/24/2019 09:31	Dale L. Simmons	2055087
	01/17/2019			01/24/2019 09:44	Dale L. Simmons	2055092
	01/17/2019			01/24/2019 09:56	Dale L. Simmons	2055093
	01/17/2019			01/22/2019 16:16	Megan Treadwell	2055082

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 5310 B-00	01/17/2019			01/22/2019 16:29	Megan Treadwell	2055083
	01/17/2019			01/22/2019 16:41	Megan Treadwell	2055088
	01/17/2019			01/22/2019 16:53	Megan Treadwell	2055089
	01/17/2019			01/22/2019 17:05	Megan Treadwell	2055095
	01/17/2019			01/22/2019 17:17	Megan Treadwell	2055096
	01/17/2019			01/22/2019 17:30	Megan Treadwell	2055097