

Chemical Analysis Report

NE-DIST-2019-07-11-02

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

Event Description: **Nassau East Boat**
Request ID: **RQ-2019-07-08-20**
Customer: **NE-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
8800 Baymeadows Way West
Suite 100
Jacksonville, FL 32256
Attn: Jeremy Parrish

For additional information please contact
Colin Wright, Ph.D.
Liang-Tsair Lin, Ph.D.
Kerry Tate, Ph.D.
Dr. rer. nat. Bettina Steinbock
Thekkekalathil Chandrasekhar, Ph.D, QA Officer
Phone (850) 245-8085

Certified by: Thekkekalathil Chandrasekhar, Chemist Administrator

Date Certified: 01-AUG-2019 13:46



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: THOMAS CR 6.0 MI BELOW CITY PRISON

Collection Date/Time: 07/10/2019 11:00

Field ID: G4NE0008

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2102021	EPA 180.1 Rev. 2.0	Turbidity	9.9		NTU	P367119	
	EPA 300.0	Bromide	22		mg Br/L	P367487	
	SM 2320 B-97	Total Alkalinity	37	A	mg CaCO3/L	P367448	
	SM 2540 D-97	TSS	20		mg/L	P367514	
	SM 4500 F-C-97	Fluoride	0.31		mg F/L	P367452	
2102023	EPA 350.1 Rev. 2.0	Ammonia-N	0.013		mg N/L	P367628	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.89		mg N/L	P367287	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.022		mg N/L	P367207	
	EPA 365.1 Rev. 2.0	Total-P	0.084		mg P/L	P367282	
	SM 5310 B-00	Organic Carbon	15		mg C/L	P367870	
2102025	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.035		mg P/L	P367099	
2102037	EPA 200.7 Rev. 4.4	Iron	580		ug/L	P367416	
		Manganese	100		ug/L	P367416	
		Zinc	15	U	ug/L	P367416	
	EPA 200.8 Rev. 5.4	Aluminum	440		ug/L	P367416	
		Antimony	0.50	U	ug/L	P367416	
		Arsenic	1.3	I	ug/L	P367416	
		Cadmium	0.20	U	ug/L	P367416	
		Chromium	1.6	U	ug/L	P367416	
		Copper	1.6	U	ug/L	P367416	
		Lead	2.0	U	ug/L	P367416	
		Nickel	2.0	U	ug/L	P367416	
		Selenium	2.0	U	ug/L	P367416	
		Silver	0.10	U	ug/L	P367416	
		Thallium	1.0	U	ug/L	P367416	

Ref. Method and Comment:

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

EPA 200.7 Rev. 4.4: The sample required dilution due to matrix interference.

EPA 200.8 Rev. 5.4: The sample required dilution due to matrix interference.

Sample Location: TMOMAS CR 4 MI BELOW CITY PRISON

Collection Date/Time: 07/10/2019 11:35

Field ID: 19020033

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2102022	EPA 180.1 Rev. 2.0	Turbidity	4.8	A	NTU	P367119	
	EPA 300.0	Bromide	11		mg Br/L	P367487	
	SM 2320 B-97	Total Alkalinity	16		mg CaCO3/L	P367553	
	SM 2540 D-97	TSS	8	I	mg/L	P367240	
	SM 4500 F-C-97	Fluoride	0.14		mg F/L	P367558	
2102024	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P367628	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.76		mg N/L	P367287	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P367207	
	EPA 365.1 Rev. 2.0	Total-P	0.061		mg P/L	P367282	
	SM 5310 B-00	Organic Carbon	16		mg C/L	P367488	
2102026	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.028		mg P/L	P367099	
2102038	EPA 200.7 Rev. 4.4	Iron	250		ug/L	P367227	
		Manganese	53.7		ug/L	P367227	
		Zinc	5.0	U	ug/L	P367227	
	EPA 200.8 Rev. 5.4	Aluminum	274		ug/L	P367227	
		Antimony	0.052	I	ug/L	P367227	
		Arsenic	0.77		ug/L	P367227	
		Cadmium	0.020	U	ug/L	P367227	
		Chromium	0.40	U	ug/L	P367227	
		Copper	0.40	U	ug/L	P367227	
		Lead	0.21	I	ug/L	P367227	
		Nickel	0.50	U	ug/L	P367227	
		Selenium	0.20	U	ug/L	P367833	
		Silver	0.010	U	ug/L	P367833	
		Thallium	0.10	U	ug/L	P367227	

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: ALLIGATOR CR AT HOBBS LANDING

Collection Date/Time: 07/10/2019 13:00

Field ID: G4NE0280

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2102027	EPA 180.1 Rev. 2.0	Turbidity	4.4		NTU	P367119	
	EPA 300.0 Rev. 2.1	Chloride	1.9E+03		mg Cl/L	P367302	
		Sulfate	250		mg SO4/L	P367304	
		Color (true)	110		PCU	P367108	
	SM 2320 B-97	Total Alkalinity	29		mg CaCO3/L	P367553	
	SM 2540 C-97	TDS	3.30E+03	J	mg/L	P367439	
	SM 2540 D-97	TSS	6	I	mg/L	P367239	
	SM 4500 F-C-97	Fluoride	0.14		mg F/L	P367558	
2102028	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P367628	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.86		mg N/L	P367287	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P367207	
	EPA 365.1 Rev. 2.0	Total-P	0.059		mg P/L	P367282	
	SM 5310 B-00	Organic Carbon	21		mg C/L	P367488	
2102029	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.022		mg P/L	P367099	
2102039	EPA 200.7 Rev. 4.4	Barium	88.1		ug/L	P367227	
		Calcium	68.0		mg/L	P367227	
		Iron	270		ug/L	P367227	
		Magnesium	126		mg/L	P367227	
		Potassium	36		mg/L	P367227	
		Sodium	1.07E+03		mg/L	P367227	
		Zinc	5.0	U	ug/L	P367227	
	EPA 200.8 Rev. 5.4	Aluminum	189		ug/L	P367227	
		Antimony	0.051	I	ug/L	P367227	
		Arsenic	0.80		ug/L	P367227	
		Boron**	389		ug/L	P367227	
		Cadmium	0.020	U	ug/L	P367227	
		Chromium	0.40	U	ug/L	P367227	
		Copper	0.40	U	ug/L	P367227	
		Lead	0.20	I	ug/L	P367227	
		Nickel	0.50	U	ug/L	P367227	
		Selenium	0.20	U	ug/L	P367833	
		Silver	0.010	U	ug/L	P367833	
		Thallium	0.10	U	ug/L	P367227	

Ref. Method and Comment:

SM 2540 C-97: Because of analytical difficulties a constant dry weight was not attained.

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

EPA 200.7 Rev. 4.4: Batch matrix spike recoveries for magnesium and potassium are unavailable for one of two spiked samples because of high analyte concentration in the QC sample.

EPA 200.8 Rev. 5.4: Batch matrix spike recoveries for boron are unavailable for one of two spiked samples because of high analyte concentration in the QC sample.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P367119

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P367227

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
Manganese	1.0	U	ug/L
Potassium	0.30	U	mg/L
Sodium	0.50	U	mg/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P367416

Component	Result	Code	Units
Iron	30	U	ug/L
Manganese	1.0	U	ug/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P367227

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
Thallium	0.10	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P367416

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Antimony	0.050	U	ug/L
Arsenic	0.050	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

Quality Assurance Report Method Blank Results

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P367416

Component	Result	Code	Units
Thallium	0.10	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P367833

Component	Result	Code	Units
Selenium	0.20	U	ug/L
Silver	0.010	U	ug/L

Reference Method: EPA 300.0
Batch ID: P367487

Component	Result	Code	Units
Bromide	0.013	U	mg Br/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P367302

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P367304

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P367628

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P367287

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P367207

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P367282

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: P367099

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

Reference Method: SM 2120 B
Batch ID: P367108

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P367448

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

Reference Method: SM 2320 B-97
Batch ID: P367553

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

Reference Method: SM 2540 C-97
Batch ID: P367439

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P367239

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P367240

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P367514

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P367452

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 4500 F-C-97
Batch ID: P367558

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P367488

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

Reference Method: SM 5310 B-00
Batch ID: P367870

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: P367227

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	98.7		P	85 - 115
Calcium	101		P	85 - 115
Iron	103		P	85 - 115
Magnesium	100		P	85 - 115
Manganese	100		P	85 - 115
Potassium	111		P	85 - 115
Sodium	110		P	85 - 115
Zinc	98.3		P	85 - 115

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P367416

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Iron	98.3		P	85 - 115
Manganese	98.9		P	85 - 115
Zinc	96.1		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P367227

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	104		P	85 - 115
Antimony	104		P	85 - 115
Arsenic	104		P	85 - 115
Boron	103		P	85 - 115
Cadmium	103		P	85 - 115
Chromium	101		P	85 - 115
Copper	99.1		P	85 - 115
Lead	103		P	85 - 115
Nickel	101		P	85 - 115
Thallium	106		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P367416

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	100		P	85 - 115
Antimony	98.2		P	85 - 115
Arsenic	102		P	85 - 115
Cadmium	101		P	85 - 115
Chromium	106		P	85 - 115
Copper	105		P	85 - 115
Lead	99.9		P	85 - 115
Nickel	106		P	85 - 115
Selenium	99.7		P	85 - 115
Silver	104		P	85 - 115
Thallium	103		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P367833

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
-----------	---------	---------	-----------	----------------

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P367833

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Selenium	103		P	85 - 115
Silver	104		P	85 - 115

Reference Method: EPA 300.0
Batch ID: P367487

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P367302

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: P367304

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P367628

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	109		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P367287

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P367207

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: P367282

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: P367099

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 2120 B
Batch ID: P367108

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

Reference Method: SM 2320 B-97
Batch ID: P367448

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	104		P	98 - 106

Reference Method: SM 2320 B-97
Batch ID: P367553

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	104		P	98 - 106

Reference Method: SM 4500 F-C-97
Batch ID: P367452

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.1		P	92 - 103

Reference Method: SM 4500 F-C-97
Batch ID: P367558

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.9		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P367488

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.8		P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P367870

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	94.9		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P367227

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2101785	Barium	94.0		P	80 - 120
2101785	Calcium	98.7		P	80 - 120
2101785	Iron	97.0		P	80 - 120
2101785	Manganese	93.4		P	80 - 120
2101785	Sodium	105		P	80 - 120
2101785	Zinc	93.9		P	80 - 120
2101890	Barium	95.5	96.2	P/P	80 - 120
2101890	Calcium	94.4		P	80 - 120
2101890	Iron	98.7	98.8	P/P	80 - 120
2101890	Magnesium	96.0		P	80 - 120
2101890	Manganese	97.0	97.7	P/P	80 - 120
2101890	Potassium	103	104	P/P	80 - 120
2101890	Sodium	103		P	80 - 120
2101890	Zinc	97.6	98.1	P/P	80 - 120

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P367416

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2102037	Iron	95.2	94.1	P/P	70 - 130
2102037	Manganese	92.4	93.1	P/P	70 - 130
2102037	Zinc	97.0	98.1	P/P	70 - 130

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P367227

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2101785	Aluminum	104		P	80 - 120
2101785	Antimony	105		P	80 - 120
2101785	Arsenic	106		P	80 - 120
2101785	Cadmium	104		P	80 - 120
2101785	Chromium	97.7		P	80 - 120
2101785	Copper	96.2		P	80 - 120
2101785	Lead	104		P	80 - 120
2101785	Nickel	98.3		P	80 - 120
2101785	Thallium	109		P	80 - 120
2101890	Aluminum	98.9	97.3	P/P	80 - 120
2101890	Antimony	102	102	P/P	80 - 120
2101890	Arsenic	104	103	P/P	80 - 120
2101890	Boron	102	104	P/P	80 - 120
2101890	Cadmium	103	103	P/P	80 - 120
2101890	Chromium	103	104	P/P	80 - 120
2101890	Copper	98.0	97.6	P/P	80 - 120
2101890	Lead	103	105	P/P	80 - 120
2101890	Nickel	100	100	P/P	80 - 120
2101890	Thallium	108	110	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P367416

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2102037	Aluminum	102	101	P/P	70 - 130

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P367416

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2102037	Antimony	98.7	98.7	P/P	70 - 130
2102037	Arsenic	111	110	P/P	70 - 130
2102037	Cadmium	98.4	97.2	P/P	70 - 130
2102037	Chromium	95.8	94.5	P/P	70 - 130
2102037	Copper	100	101	P/P	70 - 130
2102037	Lead	100	99.9	P/P	70 - 130
2102037	Nickel	96.2	95.6	P/P	70 - 130
2102037	Selenium	105	110	P/P	70 - 130
2102037	Silver	98.5	97.8	P/P	70 - 130
2102037	Thallium	94.5	94.1	P/P	70 - 130

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P367833

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2101891	Selenium	109		P	80 - 120
2101891	Silver	101		P	80 - 120
2105258	Selenium	109	105	P/P	80 - 120
2105258	Silver	107	100	P/P	80 - 120

Reference Method: EPA 300.0
Batch ID: P367487

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2103149	Bromide	98.2	98.1	P/P	90 - 110
2103440	Bromide	93.7		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P367302

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2101847	Chloride	97.7		P	90 - 110
2102049	Chloride	99.6		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P367304

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2101847	Sulfate	99.3		P	90 - 110
2102049	Sulfate	99.4		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P367628

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2102023	Ammonia-N	106	104	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P367287

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2101854	Kjeldahl Nitrogen	93.0	94.0	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P367207

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2101661	NO2NO3-N	101	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P367282

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2101854	Total-P	103	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P367099

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2102025	O-Phosphate-P	94.5	95.3	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P367452

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2102021	Fluoride	93.4	94.0	P/P	89 - 106

Reference Method: SM 4500 F-C-97
Batch ID: P367558

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2102049	Fluoride	95.7	95.7	P/P	89 - 106

Reference Method: SM 5310 B-00
Batch ID: P367488

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2102054	Organic Carbon	97.8	98.4	P/P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P367870

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2100976	Organic Carbon	93.8	93.8	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P367119

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2102022	Turbidity	1.46	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P367227

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2101890	Barium	0.653	Spike	P	0 - 20
2101890	Calcium	0.249	Spike	P	0 - 20
2101890	Iron	0.0784	Spike	P	0 - 20
2101890	Magnesium	0.790	Spike	P	0 - 20
2101890	Manganese	0.606	Spike	P	0 - 20
2101890	Potassium	0.187	Spike	P	0 - 20
2101890	Sodium	0.971	Spike	P	0 - 20
2101890	Zinc	0.473	Spike	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P367416

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2102037	Iron	0.998	Spike	P	0 - 20
2102037	Manganese	0.465	Spike	P	0 - 20
2102037	Zinc	1.12	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P367227

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2101890	Aluminum	1.46	Spike	P	0 - 20
2101890	Antimony	0.0110	Spike	P	0 - 20
2101890	Arsenic	0.642	Spike	P	0 - 20
2101890	Boron	1.18	Spike	P	0 - 20
2101890	Cadmium	0.182	Spike	P	0 - 20
2101890	Chromium	0.379	Spike	P	0 - 20
2101890	Copper	0.310	Spike	P	0 - 20
2101890	Lead	1.78	Spike	P	0 - 20
2101890	Nickel	0.317	Spike	P	0 - 20
2101890	Thallium	1.67	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P367416

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2102037	Aluminum	0.263	Spike	P	0 - 20
2102037	Antimony	0.0218	Spike	P	0 - 20
2102037	Arsenic	1.24	Spike	P	0 - 20
2102037	Cadmium	1.26	Spike	P	0 - 20
2102037	Chromium	1.40	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P367416

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2102037	Copper	1.03	Spike	P	0 - 20
2102037	Lead	0.527	Spike	P	0 - 20
2102037	Nickel	0.710	Spike	P	0 - 20
2102037	Selenium	4.62	Spike	P	0 - 20
2102037	Silver	0.726	Spike	P	0 - 20
2102037	Thallium	0.435	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P367833

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2105258	Selenium	3.61	Spike	P	0 - 20
2105258	Silver	6.95	Spike	P	0 - 20

Reference Method: EPA 300.0
Batch ID: P367487

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2103149	Bromide	0.0837	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P367302

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2101847	Chloride	0.0650	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P367304

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2101847	Sulfate	0.130	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P367628

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2102023	Ammonia-N	0.961	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P367287

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2101854	Kjeldahl Nitrogen	0.845	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P367207

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2101661	NO2NO3-N	0.406	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P367282

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2101854	Total-P	1.63	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P367099

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2102025	O-Phosphate-P	0.616	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P367108

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2102050	Color (true)	1.22	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P367448

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2102021	Total Alkalinity	0.899	Sample	P	0 - 2.8

Reference Method: SM 2320 B-97
Batch ID: P367553

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2102049	Total Alkalinity	0.263	Sample	P	0 - 2.8

Reference Method: SM 2540 C-97
Batch ID: P367439

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2101857	TDS	4.95	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P367452

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2102021	Fluoride	0.509	Spike	P	0 - 2.5

Quality Assurance Report Precision

Reference Method: SM 4500 F-C-97
Batch ID: P367558

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2102049	Fluoride	0.0	Spike	P	0 - 2.5

Reference Method: SM 5310 B-00
Batch ID: P367488

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2102054	Organic Carbon	0.401	Spike	P	0 - 20

Reference Method: SM 5310 B-00
Batch ID: P367870

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2100976	Organic Carbon	0.0	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: A92716

Included Lab Sample IDs: 2102025, 2102026, 2102029

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.2	99.3	P/P	90 - 110
O-Phosphate-P	99.3	97.7	P/P	90 - 110
O-Phosphate-P	99.9	98.7	P/P	90 - 110

Reference Method: SM 2120 B

Run ID: A92718

Included Lab Sample IDs: 2102027

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	100	101	P/P	90 - 115

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A92721

Included Lab Sample IDs: 2102021, 2102022, 2102027

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	102	102	P/P	95 - 105

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A92760

Included Lab Sample IDs: 2102023, 2102024, 2102028

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	100	102	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A92796

Included Lab Sample IDs: 2102027

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

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A92819

Included Lab Sample IDs: 2102038, 2102039

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	99.3	99.7	P/P	90 - 110
Calcium	96.8	99.0	P/P	90 - 110
Iron	98.9	98.3	P/P	90 - 110
Magnesium	98.3	98.0	P/P	90 - 110
Manganese	103	102	P/P	90 - 110
Potassium	101	101	P/P	90 - 110
Sodium	106	105	P/P	90 - 110
Zinc	99.2	101	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A92827

Included Lab Sample IDs: 2102023, 2102024, 2102028

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	104	95.8	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A92846

Included Lab Sample IDs: 2102021

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	104	102	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A92846

Included Lab Sample IDs: 2102021

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A92856

Included Lab Sample IDs: 2102023, 2102024, 2102028

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	100	101	P/P	90 - 110

Reference Method: EPA 300.0

Run ID: A92857

Included Lab Sample IDs: 2102021, 2102022

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Bromide	103	104	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A92860

Included Lab Sample IDs: 2102024, 2102028

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

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A92881

Included Lab Sample IDs: 2102037

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Iron	98.6	97.9	P/P	90 - 110
Manganese	102	102	P/P	90 - 110
Zinc	101	101	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A92887

Included Lab Sample IDs: 2102022, 2102027

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
-----------	---------	---------	------------	----------------

Quality Assurance Report Calibration Verification

Reference Method: SM 2320 B-97

Run ID: A92887

Included Lab Sample IDs: 2102022, 2102027

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	102	104	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A92887

Included Lab Sample IDs: 2102022, 2102027

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.0	98.6	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A92906

Included Lab Sample IDs: 2102023, 2102024, 2102028

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

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A92928

Included Lab Sample IDs: 2102038, 2102039

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	99.7	103	P/P	90 - 110
Antimony	100	101	P/P	90 - 110
Arsenic	100	102	P/P	90 - 110
Boron	101	102	P/P	90 - 110
Cadmium	100	101	P/P	90 - 110
Chromium	101	97.3	P/P	90 - 110
Copper	97.8	98.7	P/P	90 - 110
Lead	100	101	P/P	90 - 110
Nickel	97.5	99.5	P/P	90 - 110
Thallium	98.9	99.7	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A93016

Included Lab Sample IDs: 2102023

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.5	91.6	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A93030

Included Lab Sample IDs: 2102037

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	99.7	99.8	P/P	90 - 110
Antimony	94.5	96.3	P/P	90 - 110
Arsenic	101	102	P/P	90 - 110
Cadmium	97.0	99.2	P/P	90 - 110
Lead	101	100	P/P	90 - 110
Selenium	98.1	98.4	P/P	90 - 110
Silver	102	104	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A93069
Included Lab Sample IDs: 2102038, 2102039

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Selenium	100	101	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A93081
Included Lab Sample IDs: 2102038, 2102039

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Silver	96.3	93.5	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A93117
Included Lab Sample IDs: 2102037

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chromium	101	101	P/P	90 - 110
Copper	103	103	P/P	90 - 110
Nickel	101	102	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A93121
Included Lab Sample IDs: 2102037

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Thallium	93.5	91.0	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			LCS	Precision SMP	MS
EPA 180.1 Rev. 2.0	Turbidity						1.46	
EPA 200.7 Rev. 4.4	Barium	98.7	94.0	95.5	96.2			0.653
	Calcium	101	98.7	94.4				0.249
	Iron	103	97.0	98.7	98.8			0.0784
	Iron	98.3	95.2	94.1				0.998
	Magnesium	100	96.0					0.790
	Manganese	100	93.4	97.0	97.7			0.606
	Manganese	98.9	92.4	93.1				0.465
	Potassium	111	103	104				0.187
	Sodium	110	105	103				0.971
	Zinc	98.3	93.9	97.6	98.1			0.473
	Zinc	96.1	97.0	98.1				1.12
EPA 200.8 Rev. 5.4	Aluminum	104	98.9	97.3	104			1.46
	Aluminum	100	102	101				0.263
	Antimony	104	102	102	105			0.0110
	Antimony	98.2	98.7	98.7				0.0218
	Arsenic	104	104	103	106			0.642
	Arsenic	102	111	110				1.24
	Boron	103	102	104				1.18
	Cadmium	103	103	103	104			0.182
	Cadmium	101	98.4	97.2				1.26
	Chromium	101	103	104	97.7			0.379
	Chromium	106	95.8	94.5				1.40
	Copper	99.1	98.0	97.6	96.2			0.310
	Copper	105	100	101				1.03
	Lead	103	103	105	104			1.78
	Lead	99.9	100	99.9				0.527
	Nickel	101	100	100	98.3			0.317
	Nickel	106	96.2	95.6				0.710
	Selenium	99.7	105	110				4.62
	Selenium	103	109	109	105			3.61
	Silver	104	98.5	97.8				0.726
	Silver	104	100	101	107			6.95
	Thallium	106	108	110	109			1.67
	Thallium	103	94.5	94.1				0.435
EPA 300.0	Bromide	100	98.2	98.1	93.7			0.0837
EPA 300.0 Rev. 2.1	Chloride	98.7	97.7	99.6			0.0650	
	Sulfate	99.5	99.3	99.4			0.130	
EPA 350.1 Rev. 2.0	Ammonia-N	109	106	104				0.961
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	101	93.0	94.0				0.845
EPA 353.2 Rev. 2.0	NO2NO3-N	102	101	101				0.406
EPA 365.1 Rev. 2.0	Total-P	100	103	101				1.63
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	100	94.5	95.3				0.616
SM 2120 B	Color (true)	102					1.22	
SM 2320 B-97	Total Alkalinity	104					0.899	
	Total Alkalinity	104					0.263	
SM 2540 C-97	TDS						4.95	
SM 4500 F-C-97	Fluoride	97.1	93.4	94.0				0.509
	Fluoride	96.9	95.7	95.7				0.0
SM 5310 B-00	Organic Carbon	97.8	97.8	98.4				0.401
	Organic Carbon	94.9	93.8	93.8				0.0

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2102021, 2102022, 2102027
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2102037, 2102038, 2102039
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2102037, 2102038, 2102039
EPA 300.0 / E31780	Bromide in aqueous matrices	2102021, 2102022
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2102027
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2102027
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2102023, 2102024, 2102028
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2102023, 2102024, 2102028
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2102023, 2102024, 2102028
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2102023, 2102024, 2102028
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2102025, 2102026, 2102029
SM 2120 B / E31780	True Color measured at 450 nm	2102027
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2102021, 2102022, 2102027
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2102027
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2102021, 2102022, 2102027
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2102021, 2102022, 2102027
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2102023, 2102024, 2102028

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	07/11/2019			07/11/2019 17:53	Samantha Davila	2102021, 2102022, 2102027
EPA 200.7 Rev. 4.4	07/11/2019	07/15/2019 15:00	Elliott D. Healy	07/16/2019 21:46	Betina Topolski	2102038
	07/11/2019	07/15/2019 15:00	Elliott D. Healy	07/16/2019 22:05	Betina Topolski	2102039
	07/11/2019	07/15/2019 15:00	Elliott D. Healy	07/16/2019 22:16	Betina Topolski	2102039
	07/11/2019	07/18/2019 08:47	Alexander Thompson	07/18/2019 19:24	Betina Topolski	2102037
EPA 200.8 Rev. 5.4	07/11/2019	07/15/2019 15:00	Elliott D. Healy	07/19/2019 20:04	Martin Acosta	2102038
	07/11/2019	07/15/2019 15:00	Elliott D. Healy	07/19/2019 20:14	Martin Acosta	2102039
	07/11/2019	07/18/2019 08:47	Alexander Thompson	07/24/2019 20:15	Robert K Palmer	2102037
	07/11/2019	07/18/2019 08:47	Alexander Thompson	07/29/2019 17:44	Robert K Palmer	2102037
	07/11/2019	07/18/2019 08:47	Alexander Thompson	07/30/2019 01:22	Robert K Palmer	2102037
	07/11/2019	07/24/2019 17:15	Elliott D. Healy	07/26/2019 21:12	Robert K Palmer	2102038
	07/11/2019	07/24/2019 17:15	Elliott D. Healy	07/26/2019 21:19	Robert K Palmer	2102039
	07/11/2019	07/24/2019 17:15	Elliott D. Healy	07/29/2019 02:21	Robert K Palmer	2102038
	07/11/2019	07/24/2019 17:15	Elliott D. Healy	07/29/2019 02:27	Robert K Palmer	2102039
EPA 300.0	07/11/2019			07/18/2019 01:55	Jhamieka S. Greenwood	2102021
	07/11/2019			07/18/2019 02:12	Jhamieka S. Greenwood	2102022
EPA 300.0 Rev. 2.1	07/11/2019			07/16/2019 03:02	Jhamieka S. Greenwood	2102027
EPA 350.1 Rev. 2.0	07/11/2019			07/19/2019 11:41	Virginia P. Brown	2102023
	07/11/2019			07/19/2019 11:46	Virginia P. Brown	2102024
	07/11/2019			07/19/2019 11:47	Virginia P. Brown	2102028
EPA 351.2 Rev. 2.0	07/11/2019	07/16/2019 12:35	Sima Feizi	07/17/2019 12:32	Joseph Suarez	2102023
	07/11/2019	07/16/2019 12:35	Sima Feizi	07/17/2019 12:34	Joseph Suarez	2102024
	07/11/2019	07/16/2019 12:35	Sima Feizi	07/17/2019 12:35	Joseph Suarez	2102028
EPA 353.2 Rev. 2.0	07/11/2019			07/15/2019 12:14	Beverly Y. Sanders	2102023
	07/11/2019			07/15/2019 12:15	Beverly Y. Sanders	2102024
	07/11/2019			07/15/2019 12:16	Beverly Y. Sanders	2102028
EPA 365.1 Rev. 2.0	07/11/2019	07/16/2019 13:30	Sima Feizi	07/17/2019 11:39	Lipi Saha	2102023
	07/11/2019	07/16/2019 13:30	Sima Feizi	07/17/2019 11:40	Lipi Saha	2102024
	07/11/2019	07/16/2019 13:30	Sima Feizi	07/17/2019 11:41	Lipi Saha	2102028
EPA 365.1 Rev. 2.0 dissolved	07/11/2019			07/11/2019 16:01	Jhamieka S. Greenwood	2102025
	07/11/2019			07/11/2019 16:28	Jhamieka S. Greenwood	2102029
	07/11/2019			07/11/2019 16:37	Jhamieka S. Greenwood	2102026
SM 2120 B	07/11/2019			07/11/2019 16:59	Madeline Funaro	2102027
SM 2320 B-97	07/11/2019			07/17/2019 13:06	Dale L. Simmons	2102021
	07/11/2019			07/18/2019 08:05	Dale L. Simmons	2102022
	07/11/2019			07/18/2019 08:17	Dale L. Simmons	2102027
SM 2540 C-97	07/11/2019			07/12/2019 20:35	Rosalyn Ballman	2102027
SM 2540 D-97	07/11/2019			07/12/2019 20:35	Rosalyn Ballman	2102022, 2102027
	07/11/2019			07/15/2019 15:02	Yijie Li	2102021
SM 4500 F-C-97	07/11/2019			07/17/2019 12:20	Dale L. Simmons	2102021

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 4500 F-C-97	07/11/2019			07/18/2019 08:05	Dale L. Simmons	2102022
	07/11/2019			07/18/2019 08:17	Dale L. Simmons	2102027
SM 5310 B-00	07/11/2019			07/17/2019 07:40	Madeline Funaro	2102023
	07/11/2019			07/17/2019 18:18	Madeline Funaro	2102024
	07/11/2019			07/17/2019 18:31	Madeline Funaro	2102028