

Chemical Analysis Report

SO-DIST-2016-02-17-01

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

Event Description: **SMP: Florida Keys**
Request ID: **RQ-2016-02-15-36**
Customer: **SO-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FLDEP South District Office
2295 Victoria Ave. Suite 364
Fort Myers, FL 33901
Attn: Ben Paswater

For additional information please contact
Timothy W. Fitzpatrick
Liang-Tsair Lin, Ph.D.
Colin Wright, Ph.D.
Thekkekalathil Chandrasekhar, PhD, QA Officer
Phone (850) 245-8085

Certified by: Colin Wright, Environmental Administrator

Date Certified: 10-MAR-2016 14:50

A handwritten signature in black ink, appearing to read "Colin Wright", is written over a light gray rectangular background.

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: 8080 # 1

Collection Date/Time: 02/16/2016 11:36

Field ID: G5SD021616-1

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1771892	EPA 180.1 Rev. 2.0	Turbidity	5.0		NTU	P298794	
	SM 2320 B-97	Total Alkalinity	130		mg CaCO3/L	P298966	
	SM 2540 D-97	TSS	6	I	mg/L	P299288	
	SM 4500 F-C-97	Fluoride	1.2		mg F/L	P298957	
1771899	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P299257	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.31	I	mg N/L	P299003	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P299096	
	EPA 365.1 Rev. 2.0	Total-P	0.01	I	mg P/L	P298997	
	SM 5310 B-00	Organic Carbon	2.7		mg C/L	P298949	
1771906	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P298748	
1771948	EPA 200.7 Rev. 4.4	Iron	120	U	ug/L	P299110	
		Zinc	25	U	ug/L	P299110	
	EPA 200.8 Rev. 5.4	Arsenic	1.6		ug/L	P299110	
		Cadmium	0.10	U	ug/L	P299110	
		Chromium	0.25	U	ug/L	P299110	
		Copper	0.50	U	ug/L	P299110	
		Lead	0.25	U	ug/L	P299110	
		Nickel	0.25	U	ug/L	P299110	
		Silver	0.025	U	ug/L	P299110	

Ref. Method and Comment:

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

Sample Location: 8080 # 2 ENRG6

Collection Date/Time: 02/16/2016 12:20

Field ID: G5SD021616-2

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1771893	EPA 180.1 Rev. 2.0	Turbidity	6.9		NTU	P298794	
	SM 2320 B-97	Total Alkalinity	130		mg CaCO3/L	P298966	
	SM 2540 D-97	TSS	6	I	mg/L	P299288	
	SM 4500 F-C-97	Fluoride	1.2		mg F/L	P298957	
1771900	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P299257	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.36	I	mg N/L	P299003	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P299096	
	EPA 365.1 Rev. 2.0	Total-P	0.009	I	mg P/L	P298997	
	SM 5310 B-00	Organic Carbon	2.7		mg C/L	P298949	
1771907	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P298748	
1771949	EPA 200.7 Rev. 4.4	Iron	120	U	ug/L	P299110	
		Zinc	20	U	ug/L	P299110	
	EPA 200.8 Rev. 5.4	Arsenic	1.6		ug/L	P299110	
		Cadmium	0.10	U	ug/L	P299110	
		Chromium	0.25	U	ug/L	P299110	
		Copper	0.50	U	ug/L	P299110	
		Lead	0.25	U	ug/L	P299110	
		Nickel	0.25	U	ug/L	P299110	

Field ID: G5SD021616-2

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1771949	EPA 200.8 Rev. 5.4	Silver	0.025	U	ug/L	P299110	

Sample Location: 8079 # 1

Collection Date/Time: 02/16/2016 13:50

Field ID: G5SD021616-3

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1771894	EPA 180.1 Rev. 2.0	Turbidity	8.6		NTU	P298794	
	SM 2320 B-97	Total Alkalinity	124		mg CaCO3/L	P298966	
	SM 2540 D-97	TSS	6	I	mg/L	P299288	
	SM 4500 F-C-97	Fluoride	1.2		mg F/L	P298957	
1771901	EPA 350.1 Rev. 2.0	Ammonia-N	0.008		mg N/L	P299257	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.42		mg N/L	P299003	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P299096	
	EPA 365.1 Rev. 2.0	Total-P	0.01	I	mg P/L	P298997	
	SM 5310 B-00	Organic Carbon	2.5		mg C/L	P298949	
1771908	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P298748	
1771950	EPA 200.7 Rev. 4.4	Iron	120	U	ug/L	P299110	
		Zinc	20	U	ug/L	P299110	
	EPA 200.8 Rev. 5.4	Arsenic	1.4		ug/L	P299110	
		Cadmium	0.10	U	ug/L	P299110	
		Chromium	0.25	U	ug/L	P299110	
		Copper	0.50	U	ug/L	P299110	
		Lead	0.25	U	ug/L	P299110	
		Nickel	0.25	U	ug/L	P299110	
		Silver	0.025	U	ug/L	P299110	

Sample Location: 8079 # 2 ENRG6

Collection Date/Time: 02/16/2016 13:30

Field ID: G5SD021616-4

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1771895	EPA 180.1 Rev. 2.0	Turbidity	1.0	A	NTU	P298795	
	SM 2320 B-97	Total Alkalinity	125		mg CaCO3/L	P298966	
	SM 2540 D-97	TSS	3	U	mg/L	P299288	
	SM 4500 F-C-97	Fluoride	1.3		mg F/L	P298957	
1771902	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P299257	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.29	I	mg N/L	P299003	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P299096	
	EPA 365.1 Rev. 2.0	Total-P	0.007	I	mg P/L	P298997	
	SM 5310 B-00	Organic Carbon	1.4	I	mg C/L	P298949	
1771909	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.005	I	mg P/L	P298748	
1771951	EPA 200.7 Rev. 4.4	Iron	120	U	ug/L	P299110	
		Zinc	20	U	ug/L	P299110	
	EPA 200.8 Rev. 5.4	Arsenic	2.0		ug/L	P299110	
		Cadmium	0.10	U	ug/L	P299110	
		Chromium	0.37	I	ug/L	P299110	

Field ID: G5SD021616-4

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1771951	EPA 200.8 Rev. 5.4	Copper	0.50	U	ug/L	P299110	
		Lead	0.25	U	ug/L	P299110	
		Nickel	0.25	U	ug/L	P299110	
		Silver	0.025	U	ug/L	P299110	

Sample Location: 8073 # 1 South of Ft.Zach

Collection Date/Time: 02/16/2016 14:50

Field ID: G5SD021616-5

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1771896	EPA 180.1 Rev. 2.0	Turbidity	3.2		NTU	P298795	
	SM 2320 B-97	Total Alkalinity	135		mg CaCO3/L	P298966	
	SM 2540 D-97	TSS	5	I	mg/L	P299288	
	SM 4500 F-C-97	Fluoride	1.2		mg F/L	P298957	
1771903	EPA 350.1 Rev. 2.0	Ammonia-N	0.008		mg N/L	P299257	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.28	I	mg N/L	P299035	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	I	mg N/L	P299096	
	EPA 365.1 Rev. 2.0	Total-P	0.008	IJ	mg P/L	P299049	MS
	SM 5310 B-00	Organic Carbon	3.2		mg C/L	P298949	
1771910	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P298748	
1771952	EPA 200.7 Rev. 4.4	Iron	120	U	ug/L	P299110	
	EPA 200.8 Rev. 5.4	Arsenic	1.5		ug/L	P299110	
		Cadmium	0.10	U	ug/L	P299110	
		Chromium	0.25	U	ug/L	P299110	
		Copper	0.50	U	ug/L	P299110	
		Lead	0.25	U	ug/L	P299110	
		Nickel	0.25	U	ug/L	P299110	
		Silver	0.025	U	ug/L	P299110	
		Zinc	5.0	U	ug/L	P299110	

Ref. Method and Comment:

EPA 365.1 Rev. 2.0: Refer to the narrative for an explanation of QC Codes.

Sample Location: 8073 #2

Collection Date/Time: 02/16/2016 15:11

Field ID: G5SD021616-6

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1771897	EPA 180.1 Rev. 2.0	Turbidity	5.1		NTU	P298795	
	SM 2320 B-97	Total Alkalinity	126		mg CaCO3/L	P298966	
	SM 2540 D-97	TSS	7	I	mg/L	P299288	
	SM 4500 F-C-97	Fluoride	1.3		mg F/L	P298957	
1771904	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P299257	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.26	I	mg N/L	P299035	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.007	I	mg N/L	P299096	
	EPA 365.1 Rev. 2.0	Total-P	0.012		mg P/L	P299421	MS
	SM 5310 B-00	Organic Carbon	2.4		mg C/L	P298949	
1771911	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P298748	

Field ID: G5SD021616-6

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1771953	EPA 200.7 Rev. 4.4	Iron	120	U	ug/L	P299110	
		Zinc	20	U	ug/L	P299110	
	EPA 200.8 Rev. 5.4	Arsenic	1.7		ug/L	P299110	
		Cadmium	0.10	U	ug/L	P299110	
		Chromium	0.25	U	ug/L	P299110	
		Copper	0.50	U	ug/L	P299110	
		Lead	0.25	U	ug/L	P299110	
		Nickel	0.25	U	ug/L	P299110	
		Silver	0.025	U	ug/L	P299110	

Sample Location: Field Blank

Collection Date/Time: 02/16/2016 11:00

Field ID: G5SD021616-10

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1771898	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P298795	
	SM 2320 B-97	Total Alkalinity	0.65	UJ	mg CaCO3/L	P299328	LCS
	SM 2540 D-97	TSS	2	U	mg/L	P299285	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P299322	
1771905	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P299254	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P299034	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P299266	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P299050	
	SM 5310 B-00	Organic Carbon	0.50	U	mg C/L	P299193	
1771912	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P298746	
1771954	EPA 200.7 Rev. 4.4	Iron	30	U	ug/L	P299110	
		Zinc	5.0	U	ug/L	P299110	
	EPA 200.8 Rev. 5.4	Arsenic	0.050	U	ug/L	P299110	
		Cadmium	0.020	U	ug/L	P299110	
		Chromium	0.050	U	ug/L	P299110	
		Copper	0.10	U	ug/L	P299110	
		Lead	0.050	U	ug/L	P299110	
		Nickel	0.050	U	ug/L	P299110	
		Silver	0.0050	U	ug/L	P299110	

Ref. Method and Comment:

SM 2320 B-97: Refer to the narrative for an explanation of QC Codes.

SM 2540 D-97: The precision data is unavailable due to the low analyte concentration in the QC sample.

EPA 350.1 Rev. 2.0: Matrix spike recovery data is unavailable due to high analyte concentration in the QC sample.

Quality Assurance Report

Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P298794

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P298795

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P299110

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

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P299110

Component	Result	Code	Units
Arsenic	0.050	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.050	U	ug/L
Copper	0.10	U	ug/L
Lead	0.050	U	ug/L
Nickel	0.050	U	ug/L
Silver	0.0050	U	ug/L
Zinc	1.0	U	ug/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P299254

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P299257

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P299003

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P299034

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P299035

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P299096

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P299266

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P298997

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P299049

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P299050

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P299421

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P298746

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P298748

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

Reference Method: SM 2320 B-97
Batch ID: P298966

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

Quality Assurance Report Method Blank Results

Reference Method: SM 2320 B-97
Batch ID: P299328

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

Reference Method: SM 2540 D-97
Batch ID: P299285

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P299288

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P298957

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P299322

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P298949

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

Reference Method: SM 5310 B-00
Batch ID: P299193

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: P299110

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Iron	107		P	85 - 115
Zinc	103		P	85 - 115

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P299110

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Arsenic	92.5		P	85 - 115
Cadmium	91.7		P	85 - 115
Chromium	94.0		P	85 - 115
Copper	89.1		P	85 - 115
Lead	91.0		P	85 - 115
Nickel	91.7		P	85 - 115
Silver	94.9		P	85 - 115
Zinc	90.4		P	85 - 115

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P299254

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	97.4		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P299257

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	98.1		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P299003

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: P299034

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P299035

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	95.2		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P299096

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO ₂ NO ₃ -N	100		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P299266

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO ₂ NO ₃ -N	102		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P298997

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P299049

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	97.7		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P299050

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P299421

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	97.2		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P298746

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P298748

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

Reference Method: SM 2320 B-97
Batch ID: P298966

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	101		P	95 - 105

Reference Method: SM 2320 B-97
Batch ID: P299328

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	105		F	95 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P298957

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.9		P	94 - 108

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P299322

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.6		P	94 - 108

Reference Method: SM 5310 B-00
Batch ID: P298949

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	95.3		P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P299193

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	95.1		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P299110

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1771837	Iron	104	101	P/P	70 - 130
1771837	Zinc	104	102	P/P	70 - 130

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P299110

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1771837	Arsenic	95.4	96.5	P/P	70 - 130
1771837	Cadmium	89.0	89.6	P/P	70 - 130
1771837	Chromium	86.2	85.9	P/P	70 - 130
1771837	Copper	84.3	83.8	P/P	70 - 130
1771837	Lead	92.4	93.2	P/P	70 - 130
1771837	Nickel	88.4	86.5	P/P	70 - 130
1771837	Silver	86.6	90.9	P/P	70 - 130
1771837	Zinc	86.1	86.4	P/P	70 - 130

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P299257

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1771901	Ammonia-N	100	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P299003

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1771755	Kjeldahl Nitrogen	94.8	96.2	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P299034

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1771878	Kjeldahl Nitrogen	97.1	98.3	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P299035

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1771903	Kjeldahl Nitrogen	96.3	98.6	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P299096

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1771899	NO2NO3-N	100	100	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P299266

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1771877	NO2NO3-N	99.2		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P298997

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1771755	Total-P	91.6	90.1	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P299049

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1771903	Total-P	92.1	89.2	P/F	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P299050

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1772013	Total-P	102	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P299421

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1773387	Total-P	87.6	89.3	F/F	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P298746

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1772120	O-Phosphate-P	99.3	100	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P298748

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1771906	O-Phosphate-P	101	102	P/P	90 - 110

Reference Method: SM 4500 F-C-97
 Batch ID: P298957

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1771810	Fluoride	97.7	100	P/P	94 - 107

Reference Method: SM 4500 F-C-97
 Batch ID: P299322

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1772627	Fluoride	96.6	98.3	P/P	94 - 107

Reference Method: SM 5310 B-00
 Batch ID: P298949

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1771900	Organic Carbon	93.5	92.3	P/P	85 - 115

Reference Method: SM 5310 B-00
 Batch ID: P299193

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1771863	Organic Carbon	92.8	92.4	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P298794

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1771855	Turbidity	8.57	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P298795

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1771895	Turbidity	0.966	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
 Batch ID: P299110

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1771837	Iron	2.55	Spike	P	0 - 20
1771837	Zinc	2.22	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P299110

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1771837	Arsenic	1.12	Spike	P	0 - 20
1771837	Cadmium	0.645	Spike	P	0 - 20
1771837	Chromium	0.389	Spike	P	0 - 20
1771837	Copper	0.534	Spike	P	0 - 20
1771837	Lead	0.938	Spike	P	0 - 20
1771837	Nickel	1.79	Spike	P	0 - 20
1771837	Silver	4.79	Spike	P	0 - 20
1771837	Zinc	0.339	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P299254

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1772002	Ammonia-N	0.541	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P299257

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1771901	Ammonia-N	0.249	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P299003

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1771755	Kjeldahl Nitrogen	1.15	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P299034

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1771878	Kjeldahl Nitrogen	0.686	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P299035

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1771903	Kjeldahl Nitrogen	2.15	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P299096

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1771899	NO2NO3-N	0.499	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P299266

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1771877	NO2NO3-N	1.15	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P298997

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1771755	Total-P	1.64	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P299049

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1771903	Total-P	3.23	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P299050

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1772013	Total-P	0.0655	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P299421

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1773387	Total-P	1.88	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P298746

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1772120	O-Phosphate-P	0.804	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P298748

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1771906	O-Phosphate-P	0.983	Spike	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P298966

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1771810	Total Alkalinity	1.29	Sample	P	0 - 4.8

Quality Assurance Report Precision

Reference Method: SM 2320 B-97
Batch ID: P299328

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1772627	Total Alkalinity	0.129	Sample	P	0 - 4.8

Reference Method: SM 2540 D-97
Batch ID: P299288

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1772403	TSS	7.41	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P298957

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1771810	Fluoride	0.987	Spike	P	0 - 3.7

Reference Method: SM 4500 F-C-97
Batch ID: P299322

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1772627	Fluoride	0.940	Spike	P	0 - 3.7

Reference Method: SM 5310 B-00
Batch ID: P298949

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1771900	Organic Carbon	1.15	Spike	P	0 - 20

Reference Method: SM 5310 B-00
Batch ID: P299193

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1771863	Organic Carbon	0.292	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: A67652
Included Lab Sample IDs: 1771906, 1771907, 1771908, 1771909, 1771910, 1771911, 1771912

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.6	99.2	P/P	90 - 110
O-Phosphate-P	99.4	98.6	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A67652

Included Lab Sample IDs: 1771906, 1771907, 1771908, 1771909, 1771910, 1771911, 1771912

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.5	99.3	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A67661

Included Lab Sample IDs: 1771892, 1771893, 1771894, 1771895, 1771896, 1771897, 1771898

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

Reference Method: SM 5310 B-00

Run ID: A67710

Included Lab Sample IDs: 1771899, 1771900, 1771901, 1771902, 1771903, 1771904

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	94.4	95.0	P/P	90 - 110
Organic Carbon	95.0	93.6	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A67712

Included Lab Sample IDs: 1771892, 1771893, 1771894, 1771895, 1771896, 1771897

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.1	99.0	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A67716

Included Lab Sample IDs: 1771892, 1771893, 1771894, 1771895, 1771896, 1771897

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A67750

Included Lab Sample IDs: 1771899, 1771900, 1771901, 1771902

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	94.2	94.2	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A67764

Included Lab Sample IDs: 1771899, 1771900, 1771901, 1771902, 1771903, 1771904

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	100	104	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A67771

Included Lab Sample IDs: 1771899, 1771900, 1771901, 1771902

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	100	97.7	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A67786

Included Lab Sample IDs: 1771903, 1771905

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	97.2	97.2	P/P	90 - 110
Total-P	99.2	97.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A67795

Included Lab Sample IDs: 1771905

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

Reference Method: SM 5310 B-00

Run ID: A67804

Included Lab Sample IDs: 1771905

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	94.6	94.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A67805

Included Lab Sample IDs: 1771903, 1771904

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	105	99.2	P/P	90 - 110
Kjeldahl Nitrogen	99.2	97.4	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A67833

Included Lab Sample IDs: 1771899, 1771900, 1771901, 1771902, 1771903, 1771904, 1771905

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.2	99.8	P/P	90 - 110
Ammonia-N	99.9	99.1	P/P	90 - 110
Ammonia-N	99.9	99.2	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A67836

Included Lab Sample IDs: 1771905

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	100	101	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A67854

Included Lab Sample IDs: 1771898

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	98.5	99.0	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 2320 B-97
Run ID: A67855
Included Lab Sample IDs: 1771898

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

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A67907
Included Lab Sample IDs: 1771948, 1771949, 1771950, 1771951, 1771952, 1771953, 1771954

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	95.9	96.7	P/P	90 - 110
Arsenic	97.9	95.9	P/P	90 - 110
Cadmium	96.9	96.6	P/P	90 - 110
Cadmium	97.7	96.9	P/P	90 - 110
Chromium	97.2	97.6	P/P	90 - 110
Chromium	98.3	97.2	P/P	90 - 110
Copper	94.2	94.6	P/P	90 - 110
Copper	96.0	94.2	P/P	90 - 110
Lead	96.8	96.4	P/P	90 - 110
Lead	97.0	96.8	P/P	90 - 110
Nickel	95.1	95.6	P/P	90 - 110
Nickel	97.0	95.1	P/P	90 - 110
Zinc	94.4	94.1	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A67920
Included Lab Sample IDs: 1771904

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.8	100	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4
Run ID: A67926
Included Lab Sample IDs: 1771948, 1771949, 1771950, 1771951, 1771952, 1771953, 1771954

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Iron	101	102	P/P	95 - 105
Iron	97.8	99.0	P/P	90 - 110
Zinc	101	101	P/P	90 - 110
Zinc	101	101	P/P	95 - 105
Zinc	101	102	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A67998
Included Lab Sample IDs: 1771948, 1771949, 1771950, 1771951, 1771952, 1771953, 1771954

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Silver	97.5	97.8	P/P	90 - 110
Silver	97.8	97.6	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	MS
EPA 180.1 Rev. 2.0	Turbidity				8.57	
	Turbidity				0.966	
EPA 200.7 Rev. 4.4	Iron	107	101	104		2.55
	Zinc	103	102	104		2.22
EPA 200.8 Rev. 5.4	Arsenic	92.5	95.4	96.5		1.12
	Cadmium	91.7	89.0	89.6		0.645
	Chromium	94.0	86.2	85.9		0.389
	Copper	89.1	84.3	83.8		0.534
	Lead	91.0	92.4	93.2		0.938
	Nickel	91.7	88.4	86.5		1.79
	Silver	94.9	86.6	90.9		4.79
	Zinc	90.4	86.1	86.4		0.339
EPA 350.1 Rev. 2.0	Ammonia-N	97.4				0.541
	Ammonia-N	98.1	100	100		0.249
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	103	94.8	96.2		1.15
	Kjeldahl Nitrogen	99.5	97.1	98.3		0.686
	Kjeldahl Nitrogen	95.2	96.3	98.6		2.15
EPA 353.2 Rev. 2.0	NO2NO3-N	100	100	100		0.499
	NO2NO3-N	102	99.2			1.15
EPA 365.1 Rev. 2.0	Total-P	104	91.6	90.1		1.64
	Total-P	97.7	92.1	89.2		3.23
	Total-P	101	102	102		0.0655
	Total-P	97.2	87.6	89.3		1.88
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	104	99.3	100		0.804
	O-Phosphate-P	104	101	102		0.983
SM 2320 B-97	Total Alkalinity	101			1.29	
	Total Alkalinity	105			0.129	
SM 2540 D-97	TSS				7.41	
SM 4500 F-C-97	Fluoride	97.9	97.7	100		0.987
	Fluoride	97.6	96.6	98.3		0.940
SM 5310 B-00	Organic Carbon	95.3	93.5	92.3		1.15
	Organic Carbon	95.1	92.8	92.4		0.292

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1771892, 1771893, 1771894, 1771895, 1771896, 1771897, 1771898
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	1771948, 1771949, 1771950, 1771951, 1771952, 1771953, 1771954
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	1771948, 1771949, 1771950, 1771951, 1771952, 1771953, 1771954
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1771899, 1771900, 1771901, 1771902, 1771903, 1771904, 1771905
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1771899, 1771900, 1771901, 1771902, 1771903, 1771904, 1771905
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1771899, 1771900, 1771901, 1771902, 1771903, 1771904, 1771905
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1771899, 1771900, 1771901, 1771902, 1771903, 1771904, 1771905
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1771906, 1771907, 1771908, 1771909, 1771910, 1771911, 1771912
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	1771892, 1771893, 1771894, 1771895, 1771896, 1771897, 1771898

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1771892, 1771893, 1771894, 1771895, 1771896, 1771897, 1771898
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1771892, 1771893, 1771894, 1771895, 1771896, 1771897, 1771898
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1771899, 1771900, 1771901, 1771902, 1771903, 1771904, 1771905

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	02/17/2016			02/17/2016 16:45	Sima Feizi	1771892, 1771893, 1771894, 1771895, 1771896, 1771897, 1771898
EPA 200.7 Rev. 4.4	02/17/2016	02/23/2016	Elliott D. Healy	03/01/2016	Joshua Ayres	1771948, 1771949, 1771950, 1771951, 1771952, 1771953, 1771954
EPA 200.8 Rev. 5.4	02/17/2016	02/23/2016	Elliott D. Healy	03/01/2016	Charles J. Peterson	1771948, 1771949, 1771950, 1771951, 1771952, 1771953, 1771954
	02/17/2016	02/23/2016	Elliott D. Healy	03/04/2016	Charles J. Peterson	1771948, 1771949, 1771950, 1771951, 1771952, 1771953, 1771954
EPA 350.1 Rev. 2.0	02/17/2016			02/24/2016	Diana M. Turner	1771899, 1771900, 1771901, 1771902, 1771903, 1771904, 1771905
EPA 351.2 Rev. 2.0	02/17/2016	02/22/2016	Christopher Armour	02/23/2016	Bryan A. Werth	1771899, 1771900, 1771901, 1771902
	02/17/2016	02/23/2016	Christopher Armour	02/24/2016	Bryan A. Werth	1771903, 1771904, 1771905
EPA 353.2 Rev. 2.0	02/17/2016			02/23/2016	Peter D. Kaus	1771899, 1771900, 1771901, 1771902, 1771903, 1771904
	02/17/2016			02/25/2016	Peter D. Kaus	1771905
EPA 365.1 Rev. 2.0	02/17/2016	02/22/2016	Christopher Armour	02/23/2016	Lipi Saha	1771899, 1771900, 1771901, 1771902
	02/17/2016	02/23/2016	Christopher Armour	02/24/2016	Lipi Saha	1771903, 1771905
	02/17/2016	02/29/2016	Christopher Armour	03/01/2016	Lipi Saha	1771904
EPA 365.1 Rev. 2.0 dissolved	02/17/2016			02/17/2016 14:38	Bryan A. Werth	1771906
	02/17/2016			02/17/2016 15:00	Bryan A. Werth	1771912
	02/17/2016			02/17/2016 15:11	Bryan A. Werth	1771907, 1771908
	02/17/2016			02/17/2016 15:12	Bryan A. Werth	1771909
	02/17/2016			02/17/2016 15:13	Bryan A. Werth	1771910
	02/17/2016			02/17/2016 15:14	Bryan A. Werth	1771911
SM 2320 B-97	02/17/2016			02/21/2016	Dale L. Simmons	1771892, 1771893, 1771894, 1771895, 1771896, 1771897
	02/17/2016			02/23/2016	Dale L. Simmons	1771898
SM 2540 D-97	02/17/2016			02/19/2016	Yijie Li	1771892, 1771893, 1771894, 1771895, 1771896, 1771897, 1771898
SM 4500 F-C-97	02/17/2016			02/19/2016	Dale L. Simmons	1771892, 1771893, 1771894, 1771895, 1771896, 1771897
	02/17/2016			02/23/2016	Dale L. Simmons	1771898
SM 5310 B-00	02/17/2016			02/20/2016	Diana M. Turner	1771899, 1771900, 1771901, 1771902, 1771903, 1771904
	02/17/2016			02/24/2016	Sofia Elnemr	1771905