

Chemical Analysis Report

NE-DIST-2020-10-14-01

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

Event Description: **GTM NERR-Guana River SMP = 7 Sites + 1 Field Blank**
Request ID: **RQ-2020-08-24-02**
Customer: **NE-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
2600 Blair Stone Rd.
MS 3560
Tallahassee, FL 32399-2400
Attn: Alicia Hogue

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: Colin Wright, Program Administrator

Date Certified: 03-NOV-2020 10:48

A handwritten signature in black ink, appearing to read "Colin Wright", is displayed on a light-colored 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 group are included in this report: 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: DEPGR3

Collection Date/Time: 10/13/2020 07:38

Field ID: GTMGR3NUT

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2201992	EPA 180.1 Rev. 2.0	Turbidity	3.3		NTU	P388670	
	EPA 300.0 Rev. 2.1	Bromide	36		mg Br/L	P389481	
	SM 2320 B-2011	Total Alkalinity	100		mg CaCO3/L	P388943	
	SM 2540 D-2011	TSS	4	I	mg/L	P389167	
	SM 4500 F-C-2011	Fluoride	0.81		mg F/L	P388957	
2201999	EPA 350.1 Rev. 2.0	Ammonia-N	0.068		mg N/L	P388837	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.69		mg N/L	P388830	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.042		mg N/L	P388786	
	EPA 365.1 Rev. 2.0	Total-P	0.072		mg P/L	P388733	
	SM 5310 B-2011	Organic Carbon	11		mg C/L	P388876	
2202006	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.043		mg P/L	P388680	
2202013	EPA 351.2 Rev. 2.0 dissolved	Kjeldahl Nitrogen	0.68		mg N/L	P388830	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Bromide: Batch relative percent difference and matrix spike recoveries for one of two spiked samples are unavailable because of high analyte concentration in the QC sample.

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: DEPGR2

Collection Date/Time: 10/13/2020 07:51

Field ID: GTMGRNUT

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2201993	EPA 180.1 Rev. 2.0	Turbidity	6.2		NTU	P388670	
	EPA 300.0 Rev. 2.1	Bromide	35		mg Br/L	P389481	
	SM 2320 B-2011	Total Alkalinity	98		mg CaCO3/L	P388943	
	SM 2540 D-2011	TSS	7	I	mg/L	P389167	
	SM 4500 F-C-2011	Fluoride	0.76		mg F/L	P388957	
2202000	EPA 350.1 Rev. 2.0	Ammonia-N	0.077		mg N/L	P388839	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.72		mg N/L	P389041	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.038		mg N/L	P388786	
	EPA 365.1 Rev. 2.0	Total-P	0.071		mg P/L	P388733	
	SM 5310 B-2011	Organic Carbon	9.8		mg C/L	P388880	
2202007	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.042		mg P/L	P388680	
2202014	EPA 351.2 Rev. 2.0 dissolved	Kjeldahl Nitrogen	0.69		mg N/L	P389041	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Bromide: Batch relative percent difference and matrix spike recoveries for one of two spiked samples are unavailable because of high analyte concentration in the QC sample.

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: DEPGR1

Collection Date/Time: 10/13/2020 08:08

Field ID: GTMGR1NUT

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2201994	EPA 180.1 Rev. 2.0	Turbidity	8.6	A	NTU	P388671	
	EPA 300.0 Rev. 2.1	Bromide	29		mg Br/L	P389481	
	SM 2320 B-2011	Total Alkalinity	87		mg CaCO3/L	P388943	
	SM 2540 D-2011	TSS	9	I	mg/L	P389167	
	SM 4500 F-C-2011	Fluoride	0.69		mg F/L	P388957	
2202001	EPA 350.1 Rev. 2.0	Ammonia-N	0.16		mg N/L	P388839	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.5		mg N/L	P389041	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.006	I	mg N/L	P388787	
	EPA 365.1 Rev. 2.0	Total-P	0.081		mg P/L	P388733	
	SM 5310 B-2011	Organic Carbon	6.7		mg C/L	P388880	
2202008	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.022		mg P/L	P388680	
2202015	EPA 351.2 Rev. 2.0 dissolved	Kjeldahl Nitrogen	1.1		mg N/L	P389041	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Bromide: Batch relative percent difference and matrix spike recoveries for one of two spiked samples are unavailable because of high analyte concentration in the QC sample.

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: DEPL4

Collection Date/Time: 10/13/2020 09:26

Field ID: GTMGL4NUT

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2201995	EPA 180.1 Rev. 2.0	Turbidity	8.9		NTU	P388671	
	EPA 300.0 Rev. 2.1	Bromide	21		mg Br/L	P389481	
	SM 2320 B-2011	Total Alkalinity	82		mg CaCO3/L	P388943	
	SM 2540 D-2011	TSS	8	IA	mg/L	P389167	
	SM 4500 F-C-2011	Fluoride	0.57		mg F/L	P388957	
2202002	EPA 350.1 Rev. 2.0	Ammonia-N	0.085		mg N/L	P388839	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.5		mg N/L	P389041	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	I	mg N/L	P388787	
	EPA 365.1 Rev. 2.0	Total-P	0.044		mg P/L	P388733	
	SM 5310 B-2011	Organic Carbon	15		mg C/L	P388880	
2202009	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.007	I	mg P/L	P388681	
2202016	EPA 351.2 Rev. 2.0 dissolved	Kjeldahl Nitrogen	1.2		mg N/L	P389041	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Bromide: Batch relative percent difference and matrix spike recoveries for one of two spiked samples are unavailable because of high analyte concentration in the QC sample.

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: DEPL3

Collection Date/Time: 10/13/2020 09:45

Field ID: GTMLMNUT

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2201996	EPA 180.1 Rev. 2.0	Turbidity	13		NTU	P388671	
	EPA 300.0 Rev. 2.1	Bromide	9.8		mg Br/L	P389481	
	SM 2320 B-2011	Total Alkalinity	99		mg CaCO3/L	P388941	
	SM 2540 D-2011	TSS	14		mg/L	P389163	
	SM 4500 F-C-2011	Fluoride	0.36		mg F/L	P388955	
2202003	EPA 350.1 Rev. 2.0	Ammonia-N	0.010		mg N/L	P388839	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.6		mg N/L	P389041	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P388787	
	EPA 365.1 Rev. 2.0	Total-P	0.058		mg P/L	P388733	
	SM 5310 B-2011	Organic Carbon	20		mg C/L	P388946	
2202010	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P388680	
2202017	EPA 351.2 Rev. 2.0 dissolved	Kjeldahl Nitrogen	1.3		mg N/L	P389041	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Bromide: Batch relative percent difference and matrix spike recoveries for one of two spiked samples are unavailable because of high analyte concentration in the QC sample.

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: DEPL2

Collection Date/Time: 10/13/2020 10:08

Field ID: GTMGL2NUT

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2201997	EPA 180.1 Rev. 2.0	Turbidity	9.3		NTU	P388671	
	EPA 300.0 Rev. 2.1	Bromide	0.75		mg Br/L	P389481	
	SM 2320 B-2011	Total Alkalinity	102		mg CaCO3/L	P388942	
	SM 2540 D-2011	TSS	16		mg/L	P389163	
	SM 4500 F-C-2011	Fluoride	0.18		mg F/L	P388956	
2202004	EPA 350.1 Rev. 2.0	Ammonia-N	0.005		mg N/L	P388838	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.3		mg N/L	P389042	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P388886	
	EPA 365.1 Rev. 2.0	Total-P	0.12		mg P/L	P388790	
	SM 5310 B-2011	Organic Carbon	19		mg C/L	P388946	
2202011	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.037		mg P/L	P388678	
2202018	EPA 351.2 Rev. 2.0 dissolved	Kjeldahl Nitrogen	1.1		mg N/L	P389042	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Bromide: Batch relative percent difference and matrix spike recoveries for one of two spiked samples are unavailable because of high analyte concentration in the QC sample.

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: DEPL1

Collection Date/Time: 10/13/2020 10:30

Field ID: GTMGL1NUT

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2201998	EPA 180.1 Rev. 2.0	Turbidity	2.3		NTU	P388671	
	EPA 300.0 Rev. 2.1	Bromide	0.22		mg Br/L	P389481	
	SM 2320 B-2011	Total Alkalinity	114		mg CaCO3/L	P388942	
	SM 2540 D-2011	TSS	3	IA	mg/L	P389164	
	SM 4500 F-C-2011	Fluoride	0.17		mg F/L	P388956	
2202005	EPA 350.1 Rev. 2.0	Ammonia-N	0.025		mg N/L	P388844	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P389042	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P388886	
	EPA 365.1 Rev. 2.0	Total-P	0.28		mg P/L	P388790	
	SM 5310 B-2011	Organic Carbon	19		mg C/L	P388946	
2202012	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.21		mg P/L	P388679	
2202019	EPA 351.2 Rev. 2.0 dissolved	Kjeldahl Nitrogen	0.99		mg N/L	P389042	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Bromide: Batch relative percent difference and matrix spike recoveries for one of two spiked samples are unavailable because of high analyte concentration in the QC sample.

SM 2540 D-2011: 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: P388670

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P388671

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P389481

Component	Result	Code	Units
Bromide	0.013	U	mg Br/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P388837

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P388838

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P388839

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P388844

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P388830

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P389041

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P389042

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

Reference Method: EPA 351.2 Rev. 2.0 dissolved
Batch ID: P388830

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

Reference Method: EPA 351.2 Rev. 2.0 dissolved
Batch ID: P389041

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

Reference Method: EPA 351.2 Rev. 2.0 dissolved
Batch ID: P389042

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P388786

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P388787

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P388886

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P388733

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P388790

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: P388678

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P388679

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P388680

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P388681

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

Reference Method: SM 2320 B-2011
Batch ID: P388941

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

Reference Method: SM 2320 B-2011
Batch ID: P388942

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

Reference Method: SM 2320 B-2011
Batch ID: P388943

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

Reference Method: SM 2540 D-2011
Batch ID: P389163

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P389164

Component	Result	Code	Units
TSS	2	U	mg/L

Quality Assurance Report Method Blank Results

Reference Method: SM 2540 D-2011
Batch ID: P389167

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P388955

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-2011
Batch ID: P388956

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-2011
Batch ID: P388957

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P388876

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

Reference Method: SM 5310 B-2011
Batch ID: P388880

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

Reference Method: SM 5310 B-2011
Batch ID: P388946

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P389481

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P388837

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P388838

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P388839

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P388844

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P388830

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: P389041

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P389042

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

Reference Method: EPA 351.2 Rev. 2.0 dissolved
Batch ID: P388830

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 351.2 Rev. 2.0 dissolved
Batch ID: P389041

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

Reference Method: EPA 351.2 Rev. 2.0 dissolved
Batch ID: P389042

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P388786

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P388787

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P388886

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P388733

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P388790

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P388678

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P388679

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: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P388680

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P388681

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

Reference Method: SM 2320 B-2011
Batch ID: P388941

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	93 - 104

Reference Method: SM 2320 B-2011
Batch ID: P388942

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.4		P	93 - 104

Reference Method: SM 2320 B-2011
Batch ID: P388943

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	101		P	93 - 104

Reference Method: SM 4500 F-C-2011
Batch ID: P388955

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.5		P	90 - 106

Reference Method: SM 4500 F-C-2011
Batch ID: P388956

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.1		P	90 - 106

Reference Method: SM 4500 F-C-2011
Batch ID: P388957

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.0		P	90 - 106

Reference Method: SM 5310 B-2011
Batch ID: P388876

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	100		P	85 - 115

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-2011
Batch ID: P388880

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	93.4		P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P388946

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	95.6		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P389481

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2202118	Bromide	94.3		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P388837

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2201522	Ammonia-N	103	105	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P388838

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2201844	Ammonia-N	102	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P388839

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2202074	Ammonia-N	101	103	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P388844

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2202309	Ammonia-N	101	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P388830

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2202074	Kjeldahl Nitrogen	98.0	106	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P389041

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2202017	Kjeldahl Nitrogen	107	104	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P389042

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2202019	Kjeldahl Nitrogen	100	103	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0 dissolved
Batch ID: P388830

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2202074	Kjeldahl Nitrogen	98.0	106	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 351.2 Rev. 2.0 dissolved
Batch ID: P389041

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2202017	Kjeldahl Nitrogen	107	104	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0 dissolved
Batch ID: P389042

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2202019	Kjeldahl Nitrogen	100	103	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P388786

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2201717	NO2NO3-N	101	100	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P388787

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2202001	NO2NO3-N	99.2	98.7	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P388886

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2201833	NO2NO3-N	96.5	97.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P388733

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2201999	Total-P	105	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P388790

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2202005	Total-P	107	108	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P388678

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2201845	O-Phosphate-P	99.8	98.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P388679

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2202120	O-Phosphate-P	97.9	97.9	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P388680

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2201914	O-Phosphate-P	100	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P388681

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2202009	O-Phosphate-P	97.1	97.4	P/P	90 - 110

Reference Method: SM 4500 F-C-2011
Batch ID: P388955

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2201327	Fluoride	100	100	P/P	94 - 107

Reference Method: SM 4500 F-C-2011
Batch ID: P388956

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2202126	Fluoride	103	104	P/P	94 - 107

Reference Method: SM 4500 F-C-2011
Batch ID: P388957

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2201372	Fluoride	101	101	P/P	94 - 107

Reference Method: SM 5310 B-2011
Batch ID: P388876

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2201717	Organic Carbon	99.1	99.6	P/P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P388880

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2201809	Organic Carbon	92.6	92.5	P/P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P388946

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2202003	Organic Carbon	101		P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P388670

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2201925	Turbidity	17.4	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P388671

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2201994	Turbidity	0.583	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P388837

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2201522	Ammonia-N	2.08	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P388838

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2201844	Ammonia-N	0.602	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P388839

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2202074	Ammonia-N	1.65	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P388844

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2202309	Ammonia-N	0.0671	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P388830

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2202074	Kjeldahl Nitrogen	6.26	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P389041

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2202017	Kjeldahl Nitrogen	1.39	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P389042

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2202019	Kjeldahl Nitrogen	1.75	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0 dissolved
Batch ID: P388830

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2202074	Kjeldahl Nitrogen	6.26	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0 dissolved
Batch ID: P389041

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2202017	Kjeldahl Nitrogen	1.39	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0 dissolved
Batch ID: P389042

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2202019	Kjeldahl Nitrogen	1.75	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P388786

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2201717	NO2NO3-N	0.432	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P388787

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2202001	NO2NO3-N	0.491	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P388886

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2201833	NO2NO3-N	0.517	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P388733

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2201999	Total-P	1.44	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P388790

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2202005	Total-P	0.492	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P388678

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2201845	O-Phosphate-P	0.778	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P388679

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2202120	O-Phosphate-P	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P388680

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2201914	O-Phosphate-P	0.148	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P388681

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2202009	O-Phosphate-P	0.288	Spike	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P388941

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2201327	Total Alkalinity	1.60	Sample	P	0 - 8.1

Reference Method: SM 2320 B-2011
Batch ID: P388942

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2202126	Total Alkalinity	7.08	Sample	P	0 - 8.1

Reference Method: SM 2320 B-2011
Batch ID: P388943

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2201372	Total Alkalinity	0.245	Sample	P	0 - 8.1

Quality Assurance Report Precision

Reference Method: SM 4500 F-C-2011
Batch ID: P388955

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2201327	Fluoride	0.0	Spike	P	0 - 2.8

Reference Method: SM 4500 F-C-2011
Batch ID: P388956

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2202126	Fluoride	0.479	Spike	P	0 - 2.8

Reference Method: SM 4500 F-C-2011
Batch ID: P388957

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2201372	Fluoride	0.477	Spike	P	0 - 2.8

Reference Method: SM 5310 B-2011
Batch ID: P388876

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2201717	Organic Carbon	0.517	Spike	P	0 - 20

Reference Method: SM 5310 B-2011
Batch ID: P388880

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2201809	Organic Carbon	0.150	Spike	P	0 - 20

Reference Method: SM 5310 B-2011
Batch ID: P388946

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2202003	Organic Carbon	0.0998	Spike	P	0 - 20

* Sample, spike and/or laboratory control sample precision (LCS) is reported.

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A101514

Included Lab Sample IDs: 2201992, 2201993, 2201994, 2201995, 2201996, 2201997, 2201998

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A101518

Included Lab Sample IDs: 2202006, 2202007, 2202008, 2202009, 2202010, 2202011, 2202012

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.7	98.2	P/P	90 - 110
O-Phosphate-P	99.4	98.1	P/P	90 - 110
O-Phosphate-P	99.7	99.4	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A101558

Included Lab Sample IDs: 2201999, 2202000, 2202001, 2202002, 2202003

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A101572

Included Lab Sample IDs: 2201999, 2202000, 2202001, 2202002, 2202003, 2202004

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	101	99.7	P/P	90 - 110
Ammonia-N	99.7	99.9	P/P	90 - 110
Ammonia-N	99.9	99.6	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A101575

Included Lab Sample IDs: 2202005

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

Reference Method: SM 5310 B-2011

Run ID: A101586

Included Lab Sample IDs: 2201999

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	99.9	96.4	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A101587

Included Lab Sample IDs: 2202000, 2202001, 2202002

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	90.9	93.1	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A101590

Included Lab Sample IDs: 2202004, 2202005

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A101602

Included Lab Sample IDs: 2202004, 2202005

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	103	101	P/P	90 - 110
Total-P	104	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A101607

Included Lab Sample IDs: 2201999, 2202000, 2202001, 2202002, 2202003

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	95.0	95.5	P/P	90 - 110
Total-P	95.5	95.0	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A101630

Included Lab Sample IDs: 2201992, 2201993, 2201994, 2201995, 2201996, 2201997, 2201998

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	101	96.4	P/P	90 - 110
Total Alkalinity	104	99.5	P/P	90 - 110
Total Alkalinity	96.4	99.1	P/P	90 - 110
Total Alkalinity	99.1	98.9	P/P	90 - 110
Total Alkalinity	99.5	101	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A101630

Included Lab Sample IDs: 2201992, 2201993, 2201994, 2201995, 2201996, 2201997, 2201998

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	100	99.5	P/P	90 - 110
Fluoride	101	102	P/P	90 - 110
Fluoride	97.6	101	P/P	90 - 110
Fluoride	99.5	97.6	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A101631

Included Lab Sample IDs: 2202003, 2202004, 2202005

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.2	99.8	P/P	90 - 110
Organic Carbon	99.8	97.4	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A101700

Included Lab Sample IDs: 2201999

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	99.9	94.7	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0 dissolved

Run ID: A101700

Included Lab Sample IDs: 2202013

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	99.9	94.7	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A101732

Included Lab Sample IDs: 2202000, 2202001, 2202002, 2202003, 2202004, 2202005

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	99.6	P/P	90 - 110
Kjeldahl Nitrogen	106	101	P/P	90 - 110
Kjeldahl Nitrogen	99.4	106	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0 dissolved

Run ID: A101732

Included Lab Sample IDs: 2202014, 2202015, 2202016, 2202017, 2202018, 2202019

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	99.6	P/P	90 - 110
Kjeldahl Nitrogen	106	101	P/P	90 - 110
Kjeldahl Nitrogen	99.4	106	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A101855

Included Lab Sample IDs: 2201992, 2201993, 2201994, 2201995, 2201996, 2201997, 2201998

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Bromide	91.6	97.1	P/P	90 - 110
Bromide	97.2	91.6	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		LCS	Precision	MS
						SMP	
EPA 180.1 Rev. 2.0	Turbidity					17.4	
	Turbidity					0.583	
EPA 300.0 Rev. 2.1	Bromide	103	94.3				
EPA 350.1 Rev. 2.0	Ammonia-N	101	103	105			2.08
	Ammonia-N	101	102	101			0.602
	Ammonia-N	100	101	103			1.65
	Ammonia-N	99.9	101	101			0.0671
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	99.5	98.0	106			6.26
	Kjeldahl Nitrogen	101	107	104			1.39
	Kjeldahl Nitrogen	102	100	103			1.75
EPA 351.2 Rev. 2.0 dissolved	Kjeldahl Nitrogen	99.5	98.0	106			6.26
	Kjeldahl Nitrogen	101	107	104			1.39
	Kjeldahl Nitrogen	102	100	103			1.75
EPA 353.2 Rev. 2.0	NO2NO3-N	100	101	100			0.432
	NO2NO3-N	100	99.2	98.7			0.491
	NO2NO3-N	100	96.5	97.0			0.517
EPA 365.1 Rev. 2.0	Total-P	107	105	103			1.44
	Total-P	110	107	108			0.492
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	97.7	99.8	98.8			0.778
	O-Phosphate-P	100	97.9	97.9			0.0
	O-Phosphate-P	98.5	100	100			0.148
	O-Phosphate-P	102	97.1	97.4			0.288
SM 2320 B-2011	Total Alkalinity	102				1.60	
	Total Alkalinity	99.4				7.08	
	Total Alkalinity	101				0.245	
SM 4500 F-C-2011	Fluoride	96.5	100	100			0.0
	Fluoride	96.1	103	104			0.479
	Fluoride	97.0	101	101			0.477
SM 5310 B-2011	Organic Carbon	100	99.1	99.6			0.517
	Organic Carbon	93.4	92.6	92.5			0.150
	Organic Carbon	95.6	101				0.0998

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2201992, 2201993, 2201994, 2201995, 2201996, 2201997, 2201998
EPA 300.0 Rev. 2.1	Bromide in aqueous matrices	2201992, 2201993, 2201994, 2201995, 2201996, 2201997, 2201998
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2201999, 2202000, 2202001, 2202002, 2202003, 2202004, 2202005
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2201999, 2202000, 2202001, 2202002, 2202003, 2202004, 2202005
EPA 351.2 Rev. 2.0 dissolved	Total Kjeldahl Nitrogen, dissolved, in filtered, aqueous matrices	2202013, 2202014, 2202015, 2202016, 2202017, 2202018, 2202019
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2201999, 2202000, 2202001, 2202002, 2202003, 2202004, 2202005
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2201999, 2202000, 2202001, 2202002, 2202003, 2202004, 2202005
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2202006, 2202007, 2202008, 2202009, 2202010, 2202011, 2202012
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2201992, 2201993, 2201994, 2201995, 2201996, 2201997, 2201998
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2201992, 2201993, 2201994, 2201995, 2201996, 2201997, 2201998

Reference Method Descriptions

Method	Description	<u>Associated Samples</u>
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2201992, 2201993, 2201994, 2201995, 2201996, 2201997, 2201998
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2201999, 2202000, 2202001, 2202002, 2202003, 2202004, 2202005

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	10/14/2020			10/14/2020 15:13	Yen Ta	2201992, 2201993, 2201994, 2201995, 2201996, 2201997, 2201998
EPA 300.0 Rev. 2.1	10/14/2020			10/28/2020 19:45	Lipi Saha	2201992
	10/14/2020			10/28/2020 20:03	Lipi Saha	2201993
	10/14/2020			10/28/2020 20:58	Lipi Saha	2201994
	10/14/2020			10/28/2020 21:16	Lipi Saha	2201995
	10/14/2020			10/28/2020 21:34	Lipi Saha	2201996
	10/14/2020			10/28/2020 21:53	Lipi Saha	2201997
	10/14/2020			10/28/2020 22:11	Lipi Saha	2201998
EPA 350.1 Rev. 2.0	10/14/2020			10/17/2020 13:36	Ping Hua	2201999
	10/14/2020			10/17/2020 14:01	Ping Hua	2202004
	10/14/2020			10/17/2020 14:18	Ping Hua	2202000
	10/14/2020			10/17/2020 14:19	Ping Hua	2202001
	10/14/2020			10/17/2020 14:21	Ping Hua	2202002
	10/14/2020			10/17/2020 14:22	Ping Hua	2202003
	10/14/2020			10/18/2020 11:19	Ping Hua	2202005
EPA 351.2 Rev. 2.0	10/14/2020	10/16/2020 14:15	David Boose	10/22/2020 19:24	Elliott Rodriguez	2201999
	10/14/2020	10/21/2020 13:53	David Boose	10/23/2020 14:30	Elliott Rodriguez	2202000
	10/14/2020	10/21/2020 13:53	David Boose	10/23/2020 14:32	Elliott Rodriguez	2202001
	10/14/2020	10/21/2020 13:53	David Boose	10/23/2020 14:37	Elliott Rodriguez	2202002
	10/14/2020	10/21/2020 13:53	David Boose	10/23/2020 14:39	Elliott Rodriguez	2202003
	10/14/2020	10/21/2020 13:53	David Boose	10/23/2020 15:03	Elliott Rodriguez	2202004
	10/14/2020	10/21/2020 13:53	David Boose	10/23/2020 15:05	Elliott Rodriguez	2202005
EPA 351.2 Rev. 2.0 dissolved	10/14/2020	10/16/2020 14:15	David Boose	10/22/2020 19:25	Elliott Rodriguez	2202013
	10/14/2020	10/21/2020 13:53	David Boose	10/23/2020 14:24	Elliott Rodriguez	2202017
	10/14/2020	10/21/2020 13:53	David Boose	10/23/2020 14:40	Elliott Rodriguez	2202014
	10/14/2020	10/21/2020 13:53	David Boose	10/23/2020 14:42	Elliott Rodriguez	2202015
	10/14/2020	10/21/2020 13:53	David Boose	10/23/2020 14:44	Elliott Rodriguez	2202016
	10/14/2020	10/21/2020 13:53	David Boose	10/23/2020 14:50	Elliott Rodriguez	2202019
	10/14/2020	10/21/2020 13:53	David Boose	10/23/2020 15:07	Elliott Rodriguez	2202018
EPA 353.2 Rev. 2.0	10/14/2020			10/16/2020 10:45	Beverly Y. Sanders	2201999
	10/14/2020			10/16/2020 10:47	Beverly Y. Sanders	2202000
	10/14/2020			10/16/2020 10:54	Beverly Y. Sanders	2202001
	10/14/2020			10/16/2020 11:00	Beverly Y. Sanders	2202002
	10/14/2020			10/16/2020 11:01	Beverly Y. Sanders	2202003
	10/14/2020			10/19/2020 11:10	Beverly Y. Sanders	2202004
	10/14/2020			10/19/2020 11:12	Beverly Y. Sanders	2202005
EPA 365.1 Rev. 2.0	10/14/2020	10/15/2020 12:59	Yen Ta	10/19/2020 15:38	Shengyu Wang	2201999
	10/14/2020	10/15/2020 12:59	Yen Ta	10/19/2020 15:49	Shengyu Wang	2202000
	10/14/2020	10/15/2020 12:59	Yen Ta	10/19/2020 15:50	Shengyu Wang	2202001

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 365.1 Rev. 2.0	10/14/2020	10/15/2020 12:59	Yen Ta	10/19/2020 15:51	Shengyu Wang	2202002
	10/14/2020	10/15/2020 12:59	Yen Ta	10/19/2020 15:52	Shengyu Wang	2202003
	10/14/2020	10/16/2020 14:57	Yen Ta	10/19/2020 14:56	Lipi Saha	2202005
	10/14/2020	10/16/2020 14:57	Yen Ta	10/19/2020 15:03	Lipi Saha	2202004
EPA 365.1 Rev. 2.0 dissolved	10/14/2020			10/14/2020 16:25	Samantha Davila	2202011
	10/14/2020			10/14/2020 16:49	Samantha Davila	2202006, 2202007
	10/14/2020			10/14/2020 16:50	Samantha Davila	2202008
	10/14/2020			10/14/2020 16:51	Samantha Davila	2202010
	10/14/2020			10/14/2020 16:54	Samantha Davila	2202009
	10/14/2020			10/14/2020 17:02	Samantha Davila	2202012
SM 2320 B-2011	10/14/2020			10/20/2020 01:20	Samantha Davila	2201996
	10/14/2020			10/20/2020 03:02	Samantha Davila	2201998
	10/14/2020			10/20/2020 05:59	Samantha Davila	2201997
	10/14/2020			10/20/2020 09:41	Samantha Davila	2201995
	10/14/2020			10/20/2020 10:07	Samantha Davila	2201994
	10/14/2020			10/20/2020 11:00	Samantha Davila	2201993
SM 2540 D-2011	10/14/2020			10/20/2020 11:13	Samantha Davila	2201992
	10/14/2020			10/15/2020 15:25	Yijie Li	2201992, 2201993, 2201994, 2201995, 2201996, 2201997, 2201998
SM 4500 F-C-2011	10/14/2020			10/20/2020 01:20	Samantha Davila	2201996
	10/14/2020			10/20/2020 03:02	Samantha Davila	2201998
	10/14/2020			10/20/2020 05:59	Samantha Davila	2201997
	10/14/2020			10/20/2020 08:24	Samantha Davila	2201995
	10/14/2020			10/20/2020 08:34	Samantha Davila	2201994
	10/14/2020			10/20/2020 08:40	Samantha Davila	2201993
SM 5310 B-2011	10/14/2020			10/20/2020 08:45	Samantha Davila	2201992
	10/14/2020			10/15/2020 17:44	Madeline Gruver	2201999
	10/14/2020			10/17/2020 07:23	Lauren Lees	2202000
	10/14/2020			10/17/2020 07:35	Lauren Lees	2202001
	10/14/2020			10/17/2020 07:47	Lauren Lees	2202002
	10/14/2020			10/19/2020 16:29	Lauren Lees	2202003
	10/14/2020			10/19/2020 17:19	Lauren Lees	2202004
	10/14/2020			10/19/2020 19:10	Lauren Lees	2202005