

Chemical Analysis Report

NE-DIST-2021-11-04-02

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

Event Description: **GTMNERR - Guana River SMP**
Request ID: **RQ-2021-11-01-42**
Customer: **NE-DIST**
Project ID: **SMP**

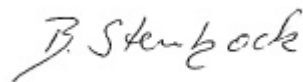
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Report Comment: Unauthorized to correct a Field ID.

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

Date Certified: 02-DEC-2021 14:47



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: 11/03/2021 08:55

Field ID: GTMGR3NUT

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2288159	EPA 180.1 Rev. 2.0	Turbidity	4.9		NTU	P406025	
	SM 2320 B-2011	Total Alkalinity	117	A	mg CaCO3/L	P406162	
	SM 2540 D-2011	TSS	9	I	mg/L	P406424	
	SM 4500 F-C-2011	Fluoride	1.2		mg F/L	P406165	
2288166	EPA 350.1 Rev. 2.0 dissolved	Ammonia-N	0.020		mg N/L	P406589	
	EPA 351.2 Rev. 2.0 dissolved	Kjeldahl Nitrogen	0.30	I	mg N/L	P406494	
	EPA 353.2 Rev. 2.0 dissolved	NO2NO3-N	0.004	I	mg N/L	P406193	
2288173	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.018		mg P/L	P406023	
2288180	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.32	I	mg N/L	P406662	
	EPA 365.1 Rev. 2.0	Total-P	0.043		mg P/L	P406141	
	SM 5310 B-2011	Organic Carbon	3.8		mg C/L	P406269	

Sample Location: DEPGR2

Collection Date/Time: 11/03/2021 09:15

Field ID: GTMGRNUT

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2288160	EPA 180.1 Rev. 2.0	Turbidity	4.9		NTU	P406025	
	SM 2320 B-2011	Total Alkalinity	117		mg CaCO3/L	P406162	
	SM 2540 D-2011	TSS	16		mg/L	P406424	
	SM 4500 F-C-2011	Fluoride	1.1		mg F/L	P406165	
2288167	EPA 350.1 Rev. 2.0 dissolved	Ammonia-N	0.018		mg N/L	P406589	
	EPA 351.2 Rev. 2.0 dissolved	Kjeldahl Nitrogen	0.34	I	mg N/L	P406494	
	EPA 353.2 Rev. 2.0 dissolved	NO2NO3-N	0.008	I	mg N/L	P406193	
2288174	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.023		mg P/L	P406023	
2288181	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.39	I	mg N/L	P406494	
	EPA 365.1 Rev. 2.0	Total-P	0.050		mg P/L	P406141	
	SM 5310 B-2011	Organic Carbon	5.0		mg C/L	P406269	

Sample Location: DEPGR1

Collection Date/Time: 11/03/2021 09:31

Field ID: GTMGR1NUT

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2288161	EPA 180.1 Rev. 2.0	Turbidity	6.0		NTU	P406025	
	SM 2320 B-2011	Total Alkalinity	119		mg CaCO3/L	P406162	
	SM 2540 D-2011	TSS	22		mg/L	P406424	
	SM 4500 F-C-2011	Fluoride	0.92		mg F/L	P406165	
2288168	EPA 350.1 Rev. 2.0 dissolved	Ammonia-N	0.046		mg N/L	P406589	
	EPA 351.2 Rev. 2.0 dissolved	Kjeldahl Nitrogen	0.58		mg N/L	P406494	
	EPA 353.2 Rev. 2.0 dissolved	NO2NO3-N	0.011		mg N/L	P406193	
2288175	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.025		mg P/L	P406023	
2288182	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.67		mg N/L	P406494	
	EPA 365.1 Rev. 2.0	Total-P	0.063		mg P/L	P406141	
	SM 5310 B-2011	Organic Carbon	9.2		mg C/L	P406269	

Sample Location: DEPGL4

Collection Date/Time: 11/03/2021 11:00

Field ID: GTMGL4NUT

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2288162	EPA 180.1 Rev. 2.0	Turbidity	11		NTU	P406025	
	SM 2320 B-2011	Total Alkalinity	131		mg CaCO3/L	P406162	
	SM 2540 D-2011	TSS	17		mg/L	P406425	
	SM 4500 F-C-2011	Fluoride	0.73		mg F/L	P406165	
2288169	EPA 350.1 Rev. 2.0 dissolved	Ammonia-N	0.013		mg N/L	P406589	
	EPA 351.2 Rev. 2.0 dissolved	Kjeldahl Nitrogen	0.90		mg N/L	P406494	
	EPA 353.2 Rev. 2.0 dissolved	NO2NO3-N	0.004	U	mg N/L	P406193	
2288176	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.008	I	mg P/L	P406023	
2288183	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.3		mg N/L	P406494	
	EPA 365.1 Rev. 2.0	Total-P	0.081		mg P/L	P406141	
	SM 5310 B-2011	Organic Carbon	15		mg C/L	P406269	

Ref. Method and Comment:

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

Sample Location: DEPGL3

Collection Date/Time: 11/03/2021 11:26

Field ID: GTMLMNUT

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2288163	EPA 180.1 Rev. 2.0	Turbidity	25		NTU	P406026	
	SM 2320 B-2011	Total Alkalinity	139		mg CaCO3/L	P406171	
	SM 2540 D-2011	TSS	142		mg/L	P406425	
	SM 4500 F-C-2011	Fluoride	0.55		mg F/L	P406165	
2288170	EPA 350.1 Rev. 2.0 dissolved	Ammonia-N	0.023		mg N/L	P406531	
	EPA 351.2 Rev. 2.0 dissolved	Kjeldahl Nitrogen	1.0		mg N/L	P406662	
	EPA 353.2 Rev. 2.0 dissolved	NO2NO3-N	0.004	U	mg N/L	P406193	
2288177	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.008	I	mg P/L	P406023	
2288184	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	2.2		mg N/L	P406662	
	EPA 365.1 Rev. 2.0	Total-P	0.069		mg P/L	P406141	
	SM 5310 B-2011	Organic Carbon	20		mg C/L	P406873	

Ref. Method and Comment:

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

Sample Location: DEPGL2

Collection Date/Time: 11/03/2021 11:57

Field ID: GTMGL2NUT

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2288164	EPA 180.1 Rev. 2.0	Turbidity	13		NTU	P406026	
	SM 2320 B-2011	Total Alkalinity	142		mg CaCO3/L	P406171	
	SM 2540 D-2011	TSS	24		mg/L	P406376	
	SM 4500 F-C-2011	Fluoride	0.38		mg F/L	P406175	
2288171	EPA 350.1 Rev. 2.0 dissolved	Ammonia-N	0.017		mg N/L	P406531	
	EPA 351.2 Rev. 2.0 dissolved	Kjeldahl Nitrogen	1.3		mg N/L	P406662	
	EPA 353.2 Rev. 2.0 dissolved	NO2NO3-N	0.004	U	mg N/L	P406193	
2288178	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.009	I	mg P/L	P406023	
2288185	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.8		mg N/L	P406662	
	EPA 365.1 Rev. 2.0	Total-P	0.13		mg P/L	P406141	
	SM 5310 B-2011	Organic Carbon	25		mg C/L	P406094	

Ref. Method and Comment:

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

Sample Location: DEPGL1

Collection Date/Time: 11/03/2021 12:20

Field ID: GTMGL1NUT

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2288165	EPA 180.1 Rev. 2.0	Turbidity	18		NTU	P406026	
	SM 2320 B-2011	Total Alkalinity	134		mg CaCO3/L	P406171	
	SM 2540 D-2011	TSS	29		mg/L	P406376	
	SM 4500 F-C-2011	Fluoride	0.18		mg F/L	P406175	
2288172	EPA 350.1 Rev. 2.0 dissolved	Ammonia-N	0.048		mg N/L	P406530	
	EPA 351.2 Rev. 2.0 dissolved	Kjeldahl Nitrogen	0.93		mg N/L	P406326	
	EPA 353.2 Rev. 2.0 dissolved	NO2NO3-N	0.028		mg N/L	P406130	
2288179	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.071		mg P/L	P406022	
2288186	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P406326	
	EPA 365.1 Rev. 2.0	Total-P	0.12		mg P/L	P406138	
	SM 5310 B-2011	Organic Carbon	20		mg C/L	P406094	

Ref. Method and Comment:

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: P406025

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P406026

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 350.1 Rev. 2.0 dissolved
Batch ID: P406530

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

Reference Method: EPA 350.1 Rev. 2.0 dissolved
Batch ID: P406531

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

Reference Method: EPA 350.1 Rev. 2.0 dissolved
Batch ID: P406589

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P406326

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P406494

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P406662

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

Reference Method: EPA 351.2 Rev. 2.0 dissolved
Batch ID: P406326

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 dissolved
Batch ID: P406494

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

Reference Method: EPA 351.2 Rev. 2.0 dissolved
Batch ID: P406662

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

Reference Method: EPA 353.2 Rev. 2.0 dissolved
Batch ID: P406130

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

Reference Method: EPA 353.2 Rev. 2.0 dissolved
Batch ID: P406193

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P406138

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P406141

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P406022

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P406023

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

Reference Method: SM 2320 B-2011
Batch ID: P406162

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

Quality Assurance Report

Method Blank Results

Reference Method: SM 2320 B-2011
Batch ID: P406171

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

Reference Method: SM 2540 D-2011
Batch ID: P406376

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P406424

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P406425

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P406165

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-2011
Batch ID: P406175

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P406094

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

Reference Method: SM 5310 B-2011
Batch ID: P406269

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

Reference Method: SM 5310 B-2011
Batch ID: P406873

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0 dissolved
Batch ID: P406530

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

Reference Method: EPA 350.1 Rev. 2.0 dissolved
Batch ID: P406531

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

Reference Method: EPA 350.1 Rev. 2.0 dissolved
Batch ID: P406589

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	96.8		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P406326

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	98.8		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P406494

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	98.4		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P406662

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

Reference Method: EPA 351.2 Rev. 2.0 dissolved
Batch ID: P406326

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	98.8		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0 dissolved
Batch ID: P406494

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	98.4		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0 dissolved
Batch ID: P406662

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0 dissolved
Batch ID: P406130

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

Reference Method: EPA 353.2 Rev. 2.0 dissolved
Batch ID: P406193

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: P406138

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P406141

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: P406022

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	97.0		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P406023

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

Reference Method: SM 2320 B-2011
Batch ID: P406162

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.3		P	94 - 106

Reference Method: SM 2320 B-2011
Batch ID: P406171

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.5		P	94 - 106

Reference Method: SM 4500 F-C-2011
Batch ID: P406165

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 4500 F-C-2011
Batch ID: P406175

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

Reference Method: SM 5310 B-2011
Batch ID: P406094

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	95.4		P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P406269

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.0		P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P406873

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0 dissolved
Batch ID: P406530

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2287181	Ammonia-N	98.6	99.8	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0 dissolved
Batch ID: P406531

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2289207	Ammonia-N	99.8	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0 dissolved
Batch ID: P406589

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2289092	Ammonia-N	98.0	99.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P406326

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2288150	Kjeldahl Nitrogen	99.4	99.3	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P406494

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2288182	Kjeldahl Nitrogen	103	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P406662

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2288789	Kjeldahl Nitrogen	99.8	106	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0 dissolved
Batch ID: P406326

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2288150	Kjeldahl Nitrogen	99.4	99.3	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0 dissolved
Batch ID: P406494

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2288182	Kjeldahl Nitrogen	103	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0 dissolved
Batch ID: P406662

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2288789	Kjeldahl Nitrogen	99.8	106	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 353.2 Rev. 2.0 dissolved
Batch ID: P406130

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2288150	NO2NO3-N	104	103	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0 dissolved
Batch ID: P406193

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2288115	NO2NO3-N	106	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P406138

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2288211	Total-P	102	106	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P406141

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2288183	Total-P	102	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P406022

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2288350	O-Phosphate-P	90.5	92.1	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P406023

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2288122	O-Phosphate-P	96.8	96.7	P/P	90 - 110

Reference Method: SM 4500 F-C-2011
Batch ID: P406165

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2288163	Fluoride	98.1	97.3	P/P	92 - 107

Reference Method: SM 4500 F-C-2011
Batch ID: P406175

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2287650	Fluoride	102	101	P/P	92 - 107

Reference Method: SM 5310 B-2011
Batch ID: P406094

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2287601	Organic Carbon	93.6	91.6	P/P	85 - 115

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: SM 5310 B-2011
Batch ID: P406269

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2288115	Organic Carbon	94.2	94.6	P/P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P406873

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2289665	Organic Carbon	97.6	95.5	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P406025

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2288112	Turbidity	2.68	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P406026

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2288263	Turbidity	2.24	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0 dissolved

Batch ID: P406530

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2287181	Ammonia-N	0.974	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0 dissolved

Batch ID: P406531

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2289207	Ammonia-N	0.710	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0 dissolved

Batch ID: P406589

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2289092	Ammonia-N	0.579	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P406326

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2288150	Kjeldahl Nitrogen	0.0938	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P406494

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2288182	Kjeldahl Nitrogen	1.59	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P406662

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2288789	Kjeldahl Nitrogen	5.11	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 351.2 Rev. 2.0 dissolved
Batch ID: P406326

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2288150	Kjeldahl Nitrogen	0.0938	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0 dissolved
Batch ID: P406494

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2288182	Kjeldahl Nitrogen	1.59	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0 dissolved
Batch ID: P406662

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2288789	Kjeldahl Nitrogen	5.11	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0 dissolved
Batch ID: P406130

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2288150	NO2NO3-N	0.943	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0 dissolved
Batch ID: P406193

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2288115	NO2NO3-N	1.40	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P406138

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2288211	Total-P	2.82	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P406141

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2288183	Total-P	0.204	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P406022

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2288350	O-Phosphate-P	1.57	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P406023

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2288122	O-Phosphate-P	0.0946	Spike	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P406162

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2288159	Total Alkalinity	0.451	Sample	P	0 - 5.2

Reference Method: SM 2320 B-2011
Batch ID: P406171

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2287650	Total Alkalinity	1.33	Sample	P	0 - 5.2

Reference Method: SM 2540 D-2011
Batch ID: P406424

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2288111	TSS	5.50	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P406165

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2288163	Fluoride	0.473	Spike	P	0 - 2.1

Reference Method: SM 4500 F-C-2011
Batch ID: P406175

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2287650	Fluoride	0.473	Spike	P	0 - 2.1

Reference Method: SM 5310 B-2011
Batch ID: P406094

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2287601	Organic Carbon	1.18	Spike	P	0 - 20

Reference Method: SM 5310 B-2011
Batch ID: P406269

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2288115	Organic Carbon	0.378	Spike	P	0 - 20

Quality Assurance Report

Precision

Reference Method: SM 5310 B-2011
Batch ID: P406873

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2289665	Organic Carbon	1.79	Spike	P	0 - 20

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A108723

Included Lab Sample IDs: 2288173, 2288174, 2288175, 2288176, 2288177, 2288178, 2288179

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.2	98.5	P/P	90 - 110
O-Phosphate-P	98.5	99.1	P/P	90 - 110
O-Phosphate-P	99.1	98.6	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A108726

Included Lab Sample IDs: 2288159, 2288160, 2288161, 2288162, 2288163, 2288164, 2288165

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	101	102	P/P	95 - 105
Turbidity	102	102	P/P	95 - 105

Reference Method: SM 5310 B-2011

Run ID: A108767

Included Lab Sample IDs: 2288185, 2288186

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.2	95.6	P/P	90 - 110
Organic Carbon	97.6	97.9	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0 dissolved

Run ID: A108779

Included Lab Sample IDs: 2288172

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

Reference Method: SM 2320 B-2011

Run ID: A108787

Included Lab Sample IDs: 2288159, 2288160, 2288161, 2288162

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	97.0	99.9	P/P	90 - 110
Total Alkalinity	99.9	94.5	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A108787

Included Lab Sample IDs: 2288159, 2288160, 2288161, 2288162, 2288163

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	102	103	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A108794

Included Lab Sample IDs: 2288163, 2288164, 2288165

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	98.1	99.6	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 4500 F-C-2011

Run ID: A108794

Included Lab Sample IDs: 2288164, 2288165

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	103	105	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0 dissolved

Run ID: A108802

Included Lab Sample IDs: 2288166, 2288167, 2288168, 2288169, 2288170, 2288171

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

Reference Method: SM 5310 B-2011

Run ID: A108857

Included Lab Sample IDs: 2288180, 2288181, 2288182, 2288183

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	92.8	93.7	P/P	90 - 110
Organic Carbon	94.8	96.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A108882

Included Lab Sample IDs: 2288186

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.1	99.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A108889

Included Lab Sample IDs: 2288185

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.6	99.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A108894

Included Lab Sample IDs: 2288180, 2288181, 2288182, 2288183, 2288184

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	97.0	96.5	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A108930

Included Lab Sample IDs: 2288186

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

Reference Method: EPA 351.2 Rev. 2.0 dissolved

Run ID: A108930

Included Lab Sample IDs: 2288172

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0 dissolved

Run ID: A108981

Included Lab Sample IDs: 2288170, 2288171, 2288172

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	100	101	P/P	90 - 110
Ammonia-N	104	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A109003

Included Lab Sample IDs: 2288181, 2288182, 2288183

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	98.5	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0 dissolved

Run ID: A109003

Included Lab Sample IDs: 2288166, 2288167, 2288168, 2288169

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	96.2	99.5	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0 dissolved

Run ID: A109005

Included Lab Sample IDs: 2288166, 2288167, 2288168, 2288169

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.6	98.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A109054

Included Lab Sample IDs: 2288180, 2288184, 2288185

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

Reference Method: EPA 351.2 Rev. 2.0 dissolved

Run ID: A109054

Included Lab Sample IDs: 2288170, 2288171

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	102	105	P/P	90 - 110
Kjeldahl Nitrogen	107	102	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A109141

Included Lab Sample IDs: 2288184

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.0	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				2.68	
	Turbidity				2.24	
EPA 350.1 Rev. 2.0 dissolved	Ammonia-N	99.4	98.6	99.8		0.974
	Ammonia-N	99.6	99.8	101		0.710
	Ammonia-N	96.8	98.0	99.0		0.579
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	98.8	99.4	99.3		0.0938
	Kjeldahl Nitrogen	98.4	101	103		1.59
	Kjeldahl Nitrogen	105	99.8	106		5.11
EPA 351.2 Rev. 2.0 dissolved	Kjeldahl Nitrogen	98.8	99.4	99.3		0.0938
	Kjeldahl Nitrogen	98.4	101	103		1.59
	Kjeldahl Nitrogen	105	99.8	106		5.11
EPA 353.2 Rev. 2.0 dissolved	NO2NO3-N	104	104	103		0.943
	NO2NO3-N	100	106	104		1.40
EPA 365.1 Rev. 2.0	Total-P	102	102	106		2.82
	Total-P	100	102	101		0.204
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	97.0	90.5	92.1		1.57
	O-Phosphate-P	97.5	96.8	96.7		0.0946
SM 2320 B-2011	Total Alkalinity	99.3			0.451	
	Total Alkalinity	99.5			1.33	
SM 2540 D-2011	TSS				5.50	
SM 4500 F-C-2011	Fluoride	101	98.1	97.3		0.473
	Fluoride	102	102	101		0.473
SM 5310 B-2011	Organic Carbon	95.4	93.6	91.6		1.18
	Organic Carbon	98.0	94.2	94.6		0.378
	Organic Carbon	97.3	97.6	95.5		1.79

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2288159, 2288160, 2288161, 2288162, 2288163, 2288164, 2288165
EPA 350.1 Rev. 2.0 dissolved	Ammonia, dissolved, in filtered, aqueous matrices as mg N/L	2288166, 2288167, 2288168, 2288169, 2288170, 2288171, 2288172
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2288180, 2288181, 2288182, 2288183, 2288184, 2288185, 2288186
EPA 351.2 Rev. 2.0 dissolved	Total Kjeldahl Nitrogen, dissolved, in filtered, aqueous matrices	2288166, 2288167, 2288168, 2288169, 2288170, 2288171, 2288172
EPA 353.2 Rev. 2.0 dissolved	Nitrite/Nitrate, dissolved, in filtered, aqueous matrices as mg N/L	2288166, 2288167, 2288168, 2288169, 2288170, 2288171, 2288172
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2288180, 2288181, 2288182, 2288183, 2288184, 2288185, 2288186
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2288173, 2288174, 2288175, 2288176, 2288177, 2288178, 2288179
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2288159, 2288160, 2288161, 2288162, 2288163, 2288164, 2288165
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2288159, 2288160, 2288161, 2288162, 2288163, 2288164, 2288165
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2288159, 2288160, 2288161, 2288162, 2288163, 2288164, 2288165
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2288180, 2288181, 2288182, 2288183, 2288184, 2288185, 2288186

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	11/04/2021			11/04/2021 15:24	Khloe J Berg	2288159, 2288160, 2288161, 2288162, 2288163, 2288164, 2288165
EPA 350.1 Rev. 2.0 dissolved	11/04/2021			11/18/2021 12:25	Ping Hua	2288172
	11/04/2021			11/18/2021 12:57	Ping Hua	2288170
	11/04/2021			11/18/2021 12:59	Ping Hua	2288171
	11/04/2021			11/19/2021 12:40	Ping Hua	2288166
	11/04/2021			11/19/2021 12:42	Ping Hua	2288167
	11/04/2021			11/19/2021 12:43	Ping Hua	2288168
	11/04/2021			11/19/2021 12:44	Ping Hua	2288169
EPA 351.2 Rev. 2.0	11/04/2021	11/15/2021 12:43	Benjamin T. Nordmann	11/16/2021 12:39	Alexandra J Mattheus	2288186
	11/04/2021	11/18/2021 12:33	Benjamin T. Nordmann	11/19/2021 13:06	Alexandra J Mattheus	2288181
	11/04/2021	11/18/2021 12:33	Benjamin T. Nordmann	11/19/2021 13:08	Alexandra J Mattheus	2288182
	11/04/2021	11/18/2021 12:33	Benjamin T. Nordmann	11/19/2021 13:13	Alexandra J Mattheus	2288183
	11/04/2021	11/22/2021 13:28	Benjamin T. Nordmann	11/23/2021 11:22	Alexandra J Mattheus	2288180
	11/04/2021	11/22/2021 13:28	Benjamin T. Nordmann	11/23/2021 11:23	Alexandra J Mattheus	2288184
	11/04/2021	11/22/2021 13:28	Benjamin T. Nordmann	11/23/2021 11:25	Alexandra J Mattheus	2288185
EPA 351.2 Rev. 2.0 dissolved	11/04/2021	11/15/2021 12:43	Benjamin T. Nordmann	11/16/2021 12:37	Alexandra J Mattheus	2288172
	11/04/2021	11/18/2021 12:33	Benjamin T. Nordmann	11/19/2021 11:34	Alexandra J Mattheus	2288166
	11/04/2021	11/18/2021 12:33	Benjamin T. Nordmann	11/19/2021 11:35	Alexandra J Mattheus	2288167
	11/04/2021	11/18/2021 12:33	Benjamin T. Nordmann	11/19/2021 11:37	Alexandra J Mattheus	2288168
	11/04/2021	11/18/2021 12:33	Benjamin T. Nordmann	11/19/2021 11:39	Alexandra J Mattheus	2288169
	11/04/2021	11/22/2021 13:28	Benjamin T. Nordmann	11/23/2021 11:13	Alexandra J Mattheus	2288170
	11/04/2021	11/22/2021 13:28	Benjamin T. Nordmann	11/23/2021 11:20	Alexandra J Mattheus	2288171
EPA 353.2 Rev. 2.0 dissolved	11/04/2021			11/08/2021 12:58	Beverly Y. Sanders	2288172
	11/04/2021			11/09/2021 11:36	Nathaniel J Jones	2288166
	11/04/2021			11/09/2021 11:37	Nathaniel J Jones	2288167
	11/04/2021			11/09/2021 11:38	Nathaniel J Jones	2288168
	11/04/2021			11/09/2021 11:39	Nathaniel J Jones	2288169
	11/04/2021			11/09/2021 11:40	Nathaniel J Jones	2288170
	11/04/2021			11/09/2021 11:42	Nathaniel J Jones	2288171
EPA 365.1 Rev. 2.0	11/04/2021	11/08/2021 16:19	Simonne.V. Calhoun	11/09/2021 17:21	Sarah A Nixon	2288186
	11/04/2021	11/09/2021 13:49	Simonne.V. Calhoun	11/12/2021 14:00	Sarah A Nixon	2288185
	11/04/2021	11/09/2021 13:49	Simonne.V. Calhoun	11/12/2021 17:15	Sarah A Nixon	2288183
	11/04/2021	11/09/2021 13:49	Simonne.V. Calhoun	11/12/2021 17:19	Sarah A Nixon	2288180
	11/04/2021	11/09/2021 13:49	Simonne.V. Calhoun	11/12/2021 17:20	Sarah A Nixon	2288181
	11/04/2021	11/09/2021 13:49	Simonne.V. Calhoun	11/12/2021 17:21	Sarah A Nixon	2288182, 2288184
EPA 365.1 Rev. 2.0 dissolved	11/04/2021			11/04/2021 14:56	James L Waggeberby	2288179
	11/04/2021			11/04/2021 15:11	James L Waggeberby	2288173
	11/04/2021			11/04/2021 15:12	James L Waggeberby	2288174
	11/04/2021			11/04/2021 15:17	James L Waggeberby	2288175

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 dissolved	11/04/2021			11/04/2021 15:18	James L Waggeberby	2288176
	11/04/2021			11/04/2021 15:19	James L Waggeberby	2288177
	11/04/2021			11/04/2021 15:20	James L Waggeberby	2288178
SM 2320 B-2011	11/04/2021			11/05/2021 18:25	Dale L. Simmons	2288165
	11/04/2021			11/05/2021 19:22	Dale L. Simmons	2288163
	11/04/2021			11/05/2021 19:54	Dale L. Simmons	2288164
	11/04/2021			11/09/2021 01:00	Dale L. Simmons	2288159
	11/04/2021			11/09/2021 02:46	Dale L. Simmons	2288160
	11/04/2021			11/09/2021 02:59	Dale L. Simmons	2288161
	11/04/2021			11/09/2021 03:13	Dale L. Simmons	2288162
SM 2540 D-2011	11/04/2021			11/05/2021 15:35	Yijie Li	2288159, 2288160, 2288161, 2288162, 2288163, 2288164, 2288165
SM 4500 F-C-2011	11/04/2021			11/05/2021 18:25	Dale L. Simmons	2288165
	11/04/2021			11/05/2021 19:54	Dale L. Simmons	2288164
	11/04/2021			11/08/2021 23:44	Dale L. Simmons	2288163
	11/04/2021			11/09/2021 00:20	Dale L. Simmons	2288159
	11/04/2021			11/09/2021 00:25	Dale L. Simmons	2288160
	11/04/2021			11/09/2021 00:30	Dale L. Simmons	2288161
	11/04/2021			11/09/2021 00:35	Dale L. Simmons	2288162
SM 5310 B-2011	11/04/2021			11/05/2021 15:36	Khloe J Berg	2288186
	11/04/2021			11/05/2021 20:13	Khloe J Berg	2288185
	11/04/2021			11/09/2021 00:42	Khloe J Berg	2288180
	11/04/2021			11/09/2021 12:38	Khloe J Berg	2288181
	11/04/2021			11/09/2021 13:28	Khloe J Berg	2288182
	11/04/2021			11/09/2021 14:19	Khloe J Berg	2288183
	11/04/2021			11/30/2021 09:49	Khloe J Berg	2288184