

Chemical Analysis Report

NW-DIST-2017-05-31-01

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

Event Description: **Project Greenshores**
Request ID: **RQ-2017-05-29-30**
Customer: **NW-DIST**
Project ID: **DISTRICT**

Send Reports to:
FL Dept. of Environmental Protection
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Date Certified: 14-JUN-2017 09:33



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 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: Range Marker E of Texar

Collection Date/Time: 05/30/2017 11:27

Field ID: #1

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1902247	EPA 180.1 Rev. 2.0	Turbidity	8.0	A	NTU	P326050	
	SM 2120 B	Color (true)	38	A	PCU	P326046	
	SM 2540 D-97	TSS	4	I	mg/L	P326612	
1902262	EPA 350.1 Rev. 2.0	Ammonia-N	0.018		mg N/L	P326131	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.40	I	mg N/L	P326057	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.030		mg N/L	P326086	
	EPA 365.1 Rev. 2.0	Total-P	0.023		mg P/L	P326062	

Ref. Method and Comment:

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

Sample Location: 1/2 Bridge and Muscogee

Collection Date/Time: 05/30/2017 11:40

Field ID: #2

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1902248	EPA 180.1 Rev. 2.0	Turbidity	6.5		NTU	P326050	
	SM 2120 B	Color (true)	29		PCU	P326046	
	SM 2540 D-97	TSS	5	I	mg/L	P326612	
1902263	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P326131	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.40	I	mg N/L	P326057	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.017		mg N/L	P326086	
	EPA 365.1 Rev. 2.0	Total-P	0.021		mg P/L	P326062	

Ref. Method and Comment:

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

Sample Location: East of Primary Stormdrain

Collection Date/Time: 05/30/2017 11:50

Field ID: #3

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1902249	EPA 180.1 Rev. 2.0	Turbidity	3.4		NTU	P326050	
	SM 2120 B	Color (true)	18		PCU	P326046	
	SM 2540 D-97	TSS	4	I	mg/L	P326614	
1902264	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P326131	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.34	I	mg N/L	P326057	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.005	I	mg N/L	P326086	
	EPA 365.1 Rev. 2.0	Total-P	0.016		mg P/L	P326062	

Ref. Method and Comment:

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

Sample Location: 100 Ft. South of Stormdrain

Collection Date/Time: 05/30/2017 11:56

Field ID: #4

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1902250	EPA 180.1 Rev. 2.0	Turbidity	3.8		NTU	P326050	
	SM 2120 B	Color (true)	21		PCU	P326046	
	SM 2540 D-97	TSS	4	I	mg/L	P326614	
1902265	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P326131	

Field ID: #4

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1902265	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.39	I	mg N/L	P326057	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P326086	
	EPA 365.1 Rev. 2.0	Total-P	0.018		mg P/L	P326062	

Ref. Method and Comment:

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

Sample Location: End of Chase Street

Collection Date/Time: 05/30/2017 12:11

Field ID: #5

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1902251	EPA 180.1 Rev. 2.0	Turbidity	4.1		NTU	P326050	
	SM 2120 B	Color (true)	21		PCU	P326046	
	SM 2540 D-97	TSS	5	I	mg/L	P326614	
1902266	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P326131	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.42		mg N/L	P326057	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.01	I	mg N/L	P326086	
	EPA 365.1 Rev. 2.0	Total-P	0.017		mg P/L	P326062	

Ref. Method and Comment:

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

Sample Location: 1/2 Muscogee and Hawkshaw 400ft from shore

Collection Date/Time: 05/30/2017 12:18

Field ID: #6

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1902252	EPA 180.1 Rev. 2.0	Turbidity	4.8		NTU	P326050	
	SM 2120 B	Color (true)	24		PCU	P326046	
	SM 2540 D-97	TSS	4	IA	mg/L	P326614	
1902267	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P326131	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.36	I	mg N/L	P326412	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.011		mg N/L	P326086	
	EPA 365.1 Rev. 2.0	Total-P	0.018		mg P/L	P326062	

Ref. Method and Comment:

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

Sample Location: 1/2 Bridge and Port

Collection Date/Time: 05/30/2017 12:25

Field ID: #7

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1902253	EPA 180.1 Rev. 2.0	Turbidity	5.4		NTU	P326050	
	SM 2120 B	Color (true)	26		PCU	P326046	
	SM 2540 D-97	TSS	4	I	mg/L	P326612	
1902268	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	I	mg N/L	P326131	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.38	I	mg N/L	P326057	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.012		mg N/L	P326086	
	EPA 365.1 Rev. 2.0	Total-P	0.020		mg P/L	P326062	

Ref. Method and Comment:

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

Sample Location: West of Stormdrain, Inside Rocks

Collection Date/Time: 05/30/2017 12:02

Field ID: #8

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1902254	EPA 180.1 Rev. 2.0	Turbidity	3.1		NTU	P326050	
	SM 2120 B	Color (true)	20		PCU	P326046	
	SM 2540 D-97	TSS	3	U	mg/L	P326614	
1902269	EPA 350.1 Rev. 2.0	Ammonia-N	0.015		mg N/L	P326131	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.37	I	mg N/L	P326057	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.011		mg N/L	P326086	
	EPA 365.1 Rev. 2.0	Total-P	0.017		mg P/L	P326062	

Ref. Method and Comment:

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

Sample Location: West End of Hawkshaw 100 ft S. of Outfall

Collection Date/Time: 05/30/2017 12:54

Field ID: #9

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1902255	EPA 180.1 Rev. 2.0	Turbidity	3.4		NTU	P326050	
	SM 2120 B	Color (true)	22		PCU	P326046	
	SM 2540 D-97	TSS	4	I	mg/L	P326614	
1902270	EPA 350.1 Rev. 2.0	Ammonia-N	0.024		mg N/L	P326131	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.33	I	mg N/L	P326057	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.009	I	mg N/L	P326086	
	EPA 365.1 Rev. 2.0	Total-P	0.020		mg P/L	P326062	

Ref. Method and Comment:

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

Sample Location: West End of Hawkshaw 100 ft S. of Outfall

Collection Date/Time: 05/30/2017 12:54

Field ID: #9

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1902256	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P326050	
	SM 2120 B	Color (true)	2.5	U	PCU	P326046	
	SM 2540 D-97	TSS	2	U	mg/L	P326612	
1902271	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P326129	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P326056	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P326151	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P326064	

Ref. Method and Comment:

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

Sample Location: Between Marina and Outfall

Collection Date/Time: 05/30/2017 11:48

Field ID: #10

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1902257	EPA 180.1 Rev. 2.0	Turbidity	4.4	A	NTU	P326051	
	SM 2120 B	Color (true)	22		PCU	P326047	
	SM 2540 D-97	TSS	4	I	mg/L	P326614	
1902272	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P326131	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.36	I	mg N/L	P326057	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P326087	

Field ID: #10

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1902272	EPA 365.1 Rev. 2.0	Total-P	0.018		mg P/L	P326062	

Ref. Method and Comment:

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

Sample Location: Entrance of Marina

Collection Date/Time: 05/30/2017 12:41

Field ID: #11

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1902258	EPA 180.1 Rev. 2.0	Turbidity	4.3		NTU	P326051	
	SM 2120 B	Color (true)	21		PCU	P326047	
	SM 2540 D-97	TSS	4	I	mg/L	P326614	
1902273	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P326132	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.34	I	mg N/L	P326058	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P326087	
	EPA 365.1 Rev. 2.0	Total-P	0.019		mg P/L	P326063	

Ref. Method and Comment:

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

Sample Location: 1/4 Between Bridge & Port 400 ft from Shore

Collection Date/Time: 05/30/2017 12:32

Field ID: #12

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1902259	EPA 180.1 Rev. 2.0	Turbidity	5.4		NTU	P326051	
	SM 2120 B	Color (true)	27		PCU	P326047	
	SM 2540 D-97	TSS	4	I	mg/L	P326614	
1902274	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P326132	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.40	I	mg N/L	P326058	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.01	I	mg N/L	P326087	
	EPA 365.1 Rev. 2.0	Total-P	0.020		mg P/L	P326063	

Ref. Method and Comment:

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

Sample Location: Inside Hawkshaw Lagoon

Collection Date/Time: 05/30/2017 13:09

Field ID: #13

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1902260	EPA 180.1 Rev. 2.0	Turbidity	5.4		NTU	P326051	
	SM 2120 B	Color (true)	16		PCU	P326047	
	SM 2540 D-97	TSS	6	I	mg/L	P326615	
1902275	EPA 350.1 Rev. 2.0	Ammonia-N	0.037		mg N/L	P326132	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.60		mg N/L	P326058	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P326087	
	EPA 365.1 Rev. 2.0	Total-P	0.051		mg P/L	P326063	

Ref. Method and Comment:

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

Sample Location: East or Stormdrain Inside PGS site Z

Collection Date/Time: 05/30/2017 13:24

Field ID: #14

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1902261	EPA 180.1 Rev. 2.0	Turbidity	3.0		NTU	P326051	
	SM 2120 B	Color (true)	22		PCU	P326047	
	SM 2540 D-97	TSS	3	UA	mg/L	P326615	
1902276	EPA 350.1 Rev. 2.0	Ammonia-N	0.028		mg N/L	P326132	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.41		mg N/L	P326058	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.008	I	mg N/L	P326087	
	EPA 365.1 Rev. 2.0	Total-P	0.016		mg P/L	P326063	

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P326050

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P326051

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P326129

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

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P326131

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

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P326132

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

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P326056

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

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P326057

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: P326058

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P326412

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P326086

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P326087

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P326151

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P326062

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P326063

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P326064

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

Reference Method: SM 2120 B
Batch ID: P326046

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Quality Assurance Report Method Blank Results

Reference Method: SM 2120 B
 Batch ID: P326047

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2540 D-97
 Batch ID: P326612

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
 Batch ID: P326614

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 2540 D-97
 Batch ID: P326615

Component	Result	Code	Units
TSS	3	U	mg/L

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P326129

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

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P326131

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	108		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P326132

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

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P326056

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

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P326057

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
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Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P326057

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	99.0		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P326058

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P326412

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	97.3		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P326086

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P326087

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P326151

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	98.5		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P326062

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P326063

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P326064

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P326129

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1902503	Ammonia-N	107	106	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P326131

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1902262	Ammonia-N	107	105	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P326132

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1902273	Ammonia-N	109	110	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P326056

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1902365	Kjeldahl Nitrogen	92.4	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P326057

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1902262	Kjeldahl Nitrogen	99.1	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P326058

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1902330	Kjeldahl Nitrogen	101	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P326412

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1903516	Kjeldahl Nitrogen	102	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P326086

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1901822	NO2NO3-N	104	103	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P326087

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1902272	NO2NO3-N	101	101	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P326151

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1902367	NO2NO3-N	103	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P326062

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1902266	Total-P	103	96.1	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P326063

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1902273	Total-P	99.4	98.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P326064

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1902366	Total-P	94.9	105	P/P	90 - 110

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P326050

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1902247	Turbidity	0.624	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P326051

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1902257	Turbidity	0.459	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P326129

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1902503	Ammonia-N	0.526	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P326131

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1902262	Ammonia-N	1.20	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P326132

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1902273	Ammonia-N	0.437	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P326056

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1902365	Kjeldahl Nitrogen	4.45	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P326057

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1902262	Kjeldahl Nitrogen	1.14	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P326058

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1902330	Kjeldahl Nitrogen	1.06	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P326412

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1903516	Kjeldahl Nitrogen	0.879	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P326086

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1901822	NO2NO3-N	0.855	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P326087

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1902272	NO2NO3-N	0.495	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P326151

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1902367	NO2NO3-N	0.0	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P326062

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1902266	Total-P	7.23	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P326063

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1902273	Total-P	1.41	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P326064

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1902366	Total-P	8.58	Spike	P	0 - 20

Reference Method: SM 2120 B
 Batch ID: P326046

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1902247	Color (true)	3.70	Sample	P	0 - 20

Reference Method: SM 2120 B
 Batch ID: P326047

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1902364	Color (true)	0.618	Sample	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: SM 2120 B
 Run ID: A76786

Included Lab Sample IDs: 1902247, 1902248, 1902249, 1902250, 1902251, 1902252, 1902253, 1902254, 1902255, 1902256, 1902257, 1902258, 1902259, 1902260, 1902261

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	103	102	P/P	85 - 115
Color (true)	103	103	P/P	85 - 115

Reference Method: EPA 180.1 Rev. 2.0
 Run ID: A76787

Included Lab Sample IDs: 1902247, 1902248, 1902249, 1902250, 1902251, 1902252, 1902253, 1902254, 1902255, 1902256, 1902257, 1902258, 1902259, 1902260, 1902261

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
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Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A76787

Included Lab Sample IDs: 1902247, 1902248, 1902249, 1902250, 1902251, 1902252, 1902253, 1902254, 1902255, 1902256, 1902257, 1902258, 1902259, 1902260, 1902261

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	101	P/P	95 - 105
Turbidity	101	101	P/P	95 - 105

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A76797

Included Lab Sample IDs: 1902262, 1902263, 1902264, 1902265, 1902266, 1902267, 1902268, 1902269, 1902270, 1902272, 1902273, 1902274, 1902275, 1902276

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A76815

Included Lab Sample IDs: 1902262, 1902263, 1902264, 1902265, 1902266, 1902267, 1902268, 1902269, 1902270, 1902271, 1902272, 1902273, 1902274, 1902275, 1902276

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	104	104	P/P	90 - 110
Ammonia-N	105	104	P/P	90 - 110
Ammonia-N	105	106	P/P	90 - 110
Ammonia-N	106	105	P/P	90 - 110
Ammonia-N	106	105	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A76822

Included Lab Sample IDs: 1902271

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	99.5	99.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A76829

Included Lab Sample IDs: 1902262, 1902263, 1902264, 1902265, 1902266, 1902267, 1902268, 1902269, 1902270, 1902271, 1902272, 1902273, 1902274, 1902275, 1902276

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.0	99.8	P/P	90 - 110
Total-P	99.2	99.0	P/P	90 - 110
Total-P	99.8	99.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A76869

Included Lab Sample IDs: 1902262, 1902263, 1902264, 1902265, 1902266, 1902268, 1902269, 1902270, 1902271, 1902272, 1902273, 1902274, 1902275, 1902276

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	102	99.4	P/P	90 - 110
Kjeldahl Nitrogen	102	102	P/P	90 - 110
Kjeldahl Nitrogen	96.2	102	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A76990

Included Lab Sample IDs: 1902267

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	97.3	94.8	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						0.624	
	Turbidity						0.459	
EPA 350.1 Rev. 2.0	Ammonia-N	107		107	106			0.526
	Ammonia-N	108		107	105			1.20
	Ammonia-N	106		109	110			0.437
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	97.5		92.4	101			4.45
	Kjeldahl Nitrogen	99.0		99.1	100			1.14
	Kjeldahl Nitrogen	100		101	102			1.06
	Kjeldahl Nitrogen	97.3		102	102			0.879
EPA 353.2 Rev. 2.0	NO2NO3-N	102		104	103			0.855
	NO2NO3-N	103		101	101			0.495
	NO2NO3-N	98.5		103	103			0.0
EPA 365.1 Rev. 2.0	Total-P	103		103	96.1			7.23
	Total-P	100		99.4	98.0			1.41
	Total-P	101		94.9	105			8.58
SM 2120 B	Color (true)						3.70	
	Color (true)						0.618	

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1902247, 1902248, 1902249, 1902250, 1902251, 1902252, 1902253, 1902254, 1902255, 1902256, 1902257, 1902258, 1902259, 1902260, 1902261
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1902262, 1902263, 1902264, 1902265, 1902266, 1902267, 1902268, 1902269, 1902270, 1902271, 1902272, 1902273, 1902274, 1902275, 1902276
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1902262, 1902263, 1902264, 1902265, 1902266, 1902267, 1902268, 1902269, 1902270, 1902271, 1902272, 1902273, 1902274, 1902275, 1902276
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1902262, 1902263, 1902264, 1902265, 1902266, 1902267, 1902268, 1902269, 1902270, 1902271, 1902272, 1902273, 1902274, 1902275, 1902276
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1902262, 1902263, 1902264, 1902265, 1902266, 1902267, 1902268, 1902269, 1902270, 1902271, 1902272, 1902273, 1902274, 1902275, 1902276

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
SM 2120 B / E31780	True Color measured at 450 nm	1902247, 1902248, 1902249, 1902250, 1902251, 1902252, 1902253, 1902254, 1902255, 1902256, 1902257, 1902258, 1902259, 1902260, 1902261
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1902247, 1902248, 1902249, 1902250, 1902251, 1902252, 1902253, 1902254, 1902255, 1902256, 1902257, 1902258, 1902259, 1902260, 1902261

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	05/31/2017			05/31/2017 17:24	Sima Feizi	1902247, 1902248, 1902249, 1902250, 1902251, 1902252, 1902253, 1902254, 1902255, 1902256, 1902257, 1902258, 1902259, 1902260, 1902261
EPA 350.1 Rev. 2.0	05/31/2017			06/01/2017	Julie Michelle Frank	1902262, 1902263, 1902264, 1902265, 1902266, 1902267, 1902268, 1902269, 1902270, 1902271, 1902272, 1902273, 1902274, 1902275, 1902276
EPA 351.2 Rev. 2.0	05/31/2017	06/01/2017	Adrian Shelby	06/05/2017	Joseph Suarez	1902262, 1902263, 1902264, 1902265, 1902266, 1902268, 1902269, 1902270, 1902271, 1902272, 1902273, 1902274, 1902275, 1902276
EPA 353.2 Rev. 2.0	05/31/2017 05/31/2017	06/08/2017	Adrian Shelby	06/09/2017 06/01/2017	Joseph Suarez Beverly Y. Sanders	1902267 1902262, 1902263, 1902264, 1902265, 1902266, 1902267, 1902268, 1902269, 1902270, 1902272, 1902273, 1902274, 1902275, 1902276
EPA 365.1 Rev. 2.0	05/31/2017 05/31/2017	06/01/2017	Adrian Shelby	06/02/2017 06/02/2017	Beverly Y. Sanders Lipi Saha	1902271 1902262, 1902263, 1902264, 1902265, 1902266, 1902267, 1902268, 1902269, 1902270, 1902271, 1902272, 1902273, 1902274, 1902275, 1902276
SM 2120 B	05/31/2017 05/31/2017 05/31/2017 05/31/2017 05/31/2017 05/31/2017 05/31/2017 05/31/2017 05/31/2017 05/31/2017 05/31/2017 05/31/2017 05/31/2017			05/31/2017 15:51 05/31/2017 15:52 05/31/2017 15:53 05/31/2017 15:54 05/31/2017 15:55 05/31/2017 15:56 05/31/2017 15:57 05/31/2017 15:58 05/31/2017 16:01 05/31/2017 16:02 05/31/2017 16:03 05/31/2017 16:04	Tanya Welborn Tanya Welborn Tanya Welborn Tanya Welborn Tanya Welborn Tanya Welborn Tanya Welborn Tanya Welborn Tanya Welborn Tanya Welborn Tanya Welborn Tanya Welborn	1902247 1902248, 1902249 1902250 1902251 1902252, 1902253 1902254 1902255 1902256 1902257 1902258, 1902259 1902260 1902261
SM 2540 D-97	05/31/2017			06/02/2017	Yijie Li	1902247, 1902248, 1902249, 1902250, 1902251, 1902252, 1902253, 1902254, 1902255, 1902256, 1902257, 1902258, 1902259, 1902260, 1902261