

Chemical Analysis Report

NW-DIST-2014-12-05-01

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-2014-12-08-31**
Customer: **NW-DIST**
Project ID: **DISTRICT**

Send Reports to:
FL Dept. of Environmental Protection
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Suite 308
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Abbreviations and data remark codes

CERT # - NELAP (National Environmental Laboratory Accreditation Program) Certification Number of the laboratory that performed the analysis.
LCS – Laboratory Control Sample; in the QC Failures column, this notation indicates a batch recovery failure.
MS – Matrix Spike; in the QC Failures column, this notation indicates a batch recovery failure.
RPD – Relative Percent Difference; in the QC Failures column, this notation indicates a batch failure for precision.
CCV – Continuing Calibration Verification; in the QC Failures column, this notation indicates a failure of the calibration verification check sample.
SUR – Surrogate; in the QC Failures column, this notation indicates a recovery failure for the associated surrogate.
RSD – Relative Standard Deviation expressed as a percentage.
SMP – Sample.
** - The laboratory is not NELAP certified for this analyte/method, or certification is not applicable.

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).

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.

Precision is reported as relative percent difference unless otherwise noted.

Uncertainty associated with the analytical results contained in this report can be estimated from the reported quality assurance results and from published test performance acceptance criteria.

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.

All sample collection performed by Bureau of Laboratories staff followed the field Standard Operating Procedures adopted by reference in Rule 62-160 FAC unless otherwise noted.

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.

Results for NELAP accredited tests contained in this report meet the requirements specified by the National Environmental Laboratory Accreditation Conference (NELAC). All samples received were in acceptable condition and met NELAC requirements unless otherwise noted. Results generated in this report pertain to the samples collected and submitted for analysis.

All times in this report are adjusted to the applicable Eastern Time Zone (EST or EDT).

Sample Location: Range Marker E. of Texer

Collection Date/Time: 12/04/2014 10:32

Field ID: 1

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1658518	EPA 180.1 Rev. 2.0	Turbidity	0.95		NTU	P277546	
	SM 2120 B	Color (true)	2.5	U	PCU	P277544	
	SM 2540 D-97	TSS	3	U	mg/L	P277963	
1658533	EPA 350.1 Rev. 2.0	Ammonia-N	0.008		mg N/L	P278081	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.37	I	mg N/L	P277798	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.048		mg N/L	P277710	
	EPA 365.1 Rev. 2.0	Total-P	0.014		mg P/L	P277823	

Ref. Method and Comment:

SM 2120 B: The precision data is unavailable due to the low analyte concentration in the QC sample.

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

Sample Location: 1/2 Bridge Muscogee

Collection Date/Time: 12/04/2014 10:45

Field ID: 2

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1658519	EPA 180.1 Rev. 2.0	Turbidity	1.2		NTU	P277546	
	SM 2120 B	Color (true)	3.5	I	PCU	P277544	
	SM 2540 D-97	TSS	6	I	mg/L	P277963	
1658534	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P278081	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.33	I	mg N/L	P277798	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.040		mg N/L	P277710	
	EPA 365.1 Rev. 2.0	Total-P	0.011		mg P/L	P277823	

Ref. Method and Comment:

SM 2120 B: The precision data is unavailable due to the low analyte concentration in the QC sample.

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

Sample Location: E. of Primary Storm Drain PGS 1

Collection Date/Time: 12/04/2014 11:08

Field ID: 3

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1658520	EPA 180.1 Rev. 2.0	Turbidity	1.2		NTU	P277546	
	SM 2120 B	Color (true)	2.5	U	PCU	P277544	
	SM 2540 D-97	TSS	4	I	mg/L	P277963	
1658535	EPA 350.1 Rev. 2.0	Ammonia-N	0.01		mg N/L	P278081	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.37	I	mg N/L	P277798	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.087		mg N/L	P277710	
	EPA 365.1 Rev. 2.0	Total-P	0.012		mg P/L	P277823	

Ref. Method and Comment:

SM 2120 B: The precision data is unavailable due to the low analyte concentration in the QC sample.

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

Sample Location: 100 ft South of Storm Drain

Collection Date/Time: 12/04/2014 11:34

Field ID: 4

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1658521	EPA 180.1 Rev. 2.0	Turbidity	1.2	A	NTU	P277547	
	SM 2120 B	Color (true)	2.5	U	PCU	P277544	

Field ID: 4

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1658521	SM 2540 D-97	TSS	6	I	mg/L	P277963	
1658536	EPA 350.1 Rev. 2.0	Ammonia-N	0.013		mg N/L	P278081	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.39	I	mg N/L	P277798	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.12		mg N/L	P277711	
	EPA 365.1 Rev. 2.0	Total-P	0.012		mg P/L	P277823	

Ref. Method and Comment:

SM 2120 B: The precision data is unavailable due to the low analyte concentration in the QC sample.

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

Sample Location: End of Chase St

Collection Date/Time: 12/04/2014 11:42

Field ID: 5

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1658522	EPA 180.1 Rev. 2.0	Turbidity	1.0		NTU	P277547	
	SM 2120 B	Color (true)	2.5	U	PCU	P277544	
	SM 2540 D-97	TSS	5	I	mg/L	P277963	
1658537	EPA 350.1 Rev. 2.0	Ammonia-N	0.009		mg N/L	P278081	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.37	I	mg N/L	P277798	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.077		mg N/L	P277711	
	EPA 365.1 Rev. 2.0	Total-P	0.012		mg P/L	P277823	

Ref. Method and Comment:

SM 2120 B: The precision data is unavailable due to the low analyte concentration in the QC sample.

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

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

Collection Date/Time: 12/04/2014 11:55

Field ID: 6

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1658523	EPA 180.1 Rev. 2.0	Turbidity	0.80		NTU	P277547	
	SM 2120 B	Color (true)	2.5	U	PCU	P277544	
	SM 2540 D-97	TSS	4	I	mg/L	P277963	
1658538	EPA 350.1 Rev. 2.0	Ammonia-N	0.011		mg N/L	P278081	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.38	I	mg N/L	P277798	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.046		mg N/L	P277711	
	EPA 365.1 Rev. 2.0	Total-P	0.008	I	mg P/L	P277824	

Ref. Method and Comment:

SM 2120 B: The precision data is unavailable due to the low analyte concentration in the QC sample.

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

Sample Location: 1/2 Bridge and Port

Collection Date/Time: 12/04/2014 12:09

Field ID: 7

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1658524	EPA 180.1 Rev. 2.0	Turbidity	0.80		NTU	P277547	
	SM 2120 B	Color (true)	2.5	U	PCU	P277544	
	SM 2540 D-97	TSS	5	I	mg/L	P277963	
1658539	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P278081	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.70		mg N/L	P277798	

Field ID: 7

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1658539	EPA 353.2 Rev. 2.0	NO2NO3-N	0.032		mg N/L	P277711	
	EPA 365.1 Rev. 2.0	Total-P	0.006	I	mg P/L	P277824	

Ref. Method and Comment:

SM 2120 B: The precision data is unavailable due to the low analyte concentration in the QC sample.

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

Sample Location: West of Storm drain Inside Rocks

Collection Date/Time: 12/04/2014 11:47

Field ID: 8

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1658525	EPA 180.1 Rev. 2.0	Turbidity	1.1		NTU	P277547	
	SM 2120 B	Color (true)	2.5	U	PCU	P277544	
	SM 2540 D-97	TSS	5	I	mg/L	P277963	
1658540	EPA 350.1 Rev. 2.0	Ammonia-N	0.016		mg N/L	P278081	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.32	I	mg N/L	P277798	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.12		mg N/L	P277711	
	EPA 365.1 Rev. 2.0	Total-P	0.01	I	mg P/L	P277824	

Ref. Method and Comment:

SM 2120 B: The precision data is unavailable due to the low analyte concentration in the QC sample.

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

Sample Location: West End of Hawkshaw 100 ft South of Outfall

Collection Date/Time: 12/04/2014 12:30

Field ID: 9

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1658526	EPA 180.1 Rev. 2.0	Turbidity	0.95		NTU	P277547	
	SM 2120 B	Color (true)	2.5	U	PCU	P277544	
	SM 2540 D-97	TSS	4	I	mg/L	P277963	
1658541	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P278081	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.37	I	mg N/L	P277798	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.040		mg N/L	P277711	
	EPA 365.1 Rev. 2.0	Total-P	0.012		mg P/L	P277824	

Ref. Method and Comment:

SM 2120 B: The precision data is unavailable due to the low analyte concentration in the QC sample.

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

Sample Location: Between Marina and Outfall

Collection Date/Time: 12/04/2014 12:25

Field ID: 10

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1658527	EPA 180.1 Rev. 2.0	Turbidity	0.95		NTU	P277547	
	SM 2120 B	Color (true)	2.5	U	PCU	P277545	
	SM 2540 D-97	TSS	7	I	mg/L	P277964	
1658542	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P278081	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.89		mg N/L	P277798	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.038		mg N/L	P277711	
	EPA 365.1 Rev. 2.0	Total-P	0.009	I	mg P/L	P277824	

Field ID: 10

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
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Ref. Method and Comment:

SM 2120 B: The precision data is unavailable due to the low analyte concentration in the QC sample.

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

Sample Location: Entrance of Marina

Collection Date/Time: 12/04/2014 12:18

Field ID: 11

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1658528	EPA 180.1 Rev. 2.0	Turbidity	1.0		NTU	P277547	
	SM 2120 B	Color (true)	2.7	I	PCU	P277545	
	SM 2540 D-97	TSS	6	I	mg/L	P277964	
1658543	EPA 350.1 Rev. 2.0	Ammonia-N	0.034		mg N/L	P278082	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.26	I	mg N/L	P277856	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.10		mg N/L	P277711	
	EPA 365.1 Rev. 2.0	Total-P	0.013		mg P/L	P277824	

Ref. Method and Comment:

SM 2120 B: The precision data is unavailable due to the low analyte concentration in the QC sample.

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

Sample Location: 1/2 Between Bridge and Port 400 ft from Shore

Collection Date/Time: 12/04/2014 12:13

Field ID: 12

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1658529	EPA 180.1 Rev. 2.0	Turbidity	0.80		NTU	P277547	
	SM 2120 B	Color (true)	3.1	I	PCU	P277545	
	SM 2540 D-97	TSS	6	I	mg/L	P277964	
1658544	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P278082	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.24	I	mg N/L	P277856	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.034		mg N/L	P277711	
	EPA 365.1 Rev. 2.0	Total-P	0.007	I	mg P/L	P277824	

Ref. Method and Comment:

SM 2120 B: The precision data is unavailable due to the low analyte concentration in the QC sample.

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

Sample Location: Inside Hawk show Lagoon

Collection Date/Time: 12/04/2014 12:41

Field ID: 13

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1658530	EPA 180.1 Rev. 2.0	Turbidity	1.8		NTU	P277547	
	SM 2120 B	Color (true)	4.2	I	PCU	P277545	
	SM 2540 D-97	TSS	6	I	mg/L	P277964	
1658545	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P278082	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.37	I	mg N/L	P277856	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.008	I	mg N/L	P277711	
	EPA 365.1 Rev. 2.0	Total-P	0.024		mg P/L	P277824	

Ref. Method and Comment:

SM 2120 B: The precision data is unavailable due to the low analyte concentration in the QC sample.

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

Sample Location: East of Stormdrain Inside PGS 2

Collection Date/Time: 12/04/2014 12:51

Field ID: 14

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1658531	EPA 180.1 Rev. 2.0	Turbidity	0.85		NTU	P277548	
	SM 2120 B	Color (true)	2.5	U	PCU	P277545	
	SM 2540 D-97	TSS	4	I	mg/L	P277964	
1658546	EPA 350.1 Rev. 2.0	Ammonia-N	0.017		mg N/L	P278082	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.20	I	mg N/L	P277856	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.040		mg N/L	P277705	
	EPA 365.1 Rev. 2.0	Total-P	0.010		mg P/L	P277824	

Ref. Method and Comment:

SM 2120 B: The precision data is unavailable due to the low analyte concentration in the QC sample.

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

Sample Location: East of Primary Storm drain PGS 1

Collection Date/Time: 12/04/2014 11:13

Field ID: FB

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1658532	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P277548	
	SM 2120 B	Color (true)	2.5	U	PCU	P277545	
	SM 2540 D-97	TSS	2	U	mg/L	P277962	
1658547	EPA 350.1 Rev. 2.0	Ammonia-N	0.075		mg N/L	P278158	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.21		mg N/L	P277797	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P277811	
	EPA 365.1 Rev. 2.0	Total-P	0.037		mg P/L	P277822	

Ref. Method and Comment:

SM 2120 B: The precision data is unavailable due to the low analyte concentration in the QC sample.

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

EPA 350.1 Rev. 2.0: The result was confirmed on 12/18/2014.

EPA 351.2 Rev. 2.0: Matrix spike recovery data is unavailable due to high analyte concentration in the QC sample. The result was confirmed on 12/17/2014.

EPA 365.1 Rev. 2.0: Total-P: The result was confirmed on 12/24/2014.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P277546

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P277547

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P277548

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Quality Assurance Report Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P278081

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P278082

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P278158

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P277797

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P277798

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P277856

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P277705

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P277710

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P277711

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P277811

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P277822

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P277823

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P277824

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

Reference Method: SM 2120 B
Batch ID: P277544

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B
Batch ID: P277545

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2540 D-97
Batch ID: P277962

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P277963

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P277964

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: P278081

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	93.6		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P278082

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	96.4		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P278158

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P277797

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P277798

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P277856

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P277705

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: P277710

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P277711

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P277811

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	108		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P277822

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: P277823

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	98.7		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P277824

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P278081

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1658534	Ammonia-N	98.6	102	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P278082

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1658544	Ammonia-N	98.4	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P278158

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1658435	Ammonia-N	100	98.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P277798

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1658533	Kjeldahl Nitrogen	93.9	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P277856

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P277856

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1658543	Kjeldahl Nitrogen	105	103	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P277705

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1657048	NO2NO3-N	105	105	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P277710

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1658463	NO2NO3-N	104	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P277711

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1658536	NO2NO3-N	106	109	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P277811

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1658452	NO2NO3-N	97.5	97.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P277822

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1658196	Total-P	103	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P277823

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1658463	Total-P	102	105	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P277824

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1658538	Total-P	95.5	96.2	P/P	90 - 110

Quality Assurance Report Precision

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P277546

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1658430	Turbidity	1.85	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P277547

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1658521	Turbidity	3.23	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P277548

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1658620	Turbidity	1.27	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P278081

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1658534	Ammonia-N	2.99	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P278082

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1658544	Ammonia-N	2.30	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P278158

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1658435	Ammonia-N	1.76	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P277797

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1658453	Kjeldahl Nitrogen	1.30	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P277798

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1658533	Kjeldahl Nitrogen	6.37	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P277856

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1658543	Kjeldahl Nitrogen	1.30	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P277705

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1657048	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P277710

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1658463	NO2NO3-N	1.47	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P277711

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1658536	NO2NO3-N	1.49	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P277811

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1658452	NO2NO3-N	0.514	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P277822

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1658196	Total-P	0.719	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P277823

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1658463	Total-P	2.11	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P277824

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1658538	Total-P	0.678	Spike	P	0 - 20

Quality Assurance Report Precision

* 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: A60021

Included Lab Sample IDs: 1658518, 1658519, 1658520, 1658521, 1658522, 1658523, 1658524, 1658525, 1658526, 1658527, 1658528, 1658529, 1658530, 1658531, 1658532

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	100	101	P/P	90 - 115
Color (true)	99.1	100	P/P	90 - 115

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A60022

Included Lab Sample IDs: 1658518, 1658519, 1658520, 1658521, 1658522, 1658523, 1658524, 1658525, 1658526, 1658527, 1658528, 1658529, 1658530, 1658531, 1658532

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.5	99.0	P/P	95 - 105
Turbidity	99.5	99.5	P/P	95 - 105

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A60059

Included Lab Sample IDs: 1658533, 1658534, 1658535, 1658536, 1658537, 1658538, 1658539, 1658540, 1658541, 1658542, 1658543, 1658544, 1658545, 1658546

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	101	105	P/P	90 - 110
NO2NO3-N	102	103	P/P	90 - 110
NO2NO3-N	103	106	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A60097

Included Lab Sample IDs: 1658547

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	99.8	99.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A60137

Included Lab Sample IDs: 1658533, 1658547

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A60138

Included Lab Sample IDs: 1658534, 1658535, 1658536, 1658537, 1658538, 1658539, 1658540, 1658541, 1658542

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	100	101	P/P	90 - 110
Kjeldahl Nitrogen	98.2	100	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A60180

Included Lab Sample IDs: 1658543, 1658544, 1658545, 1658546

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	104	97.2	P/P	90 - 110
Kjeldahl Nitrogen	97.2	98.8	P/P	90 - 110
Kjeldahl Nitrogen	98.8	102	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A60209

Included Lab Sample IDs: 1658533, 1658534, 1658535, 1658536, 1658537, 1658538, 1658539, 1658540, 1658541, 1658542, 1658543, 1658544, 1658545, 1658546

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.0	99.1	P/P	90 - 110
Ammonia-N	99.1	100	P/P	90 - 110
Ammonia-N	100	99.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A60219

Included Lab Sample IDs: 1658538, 1658539, 1658540, 1658541, 1658542, 1658543, 1658544, 1658545, 1658546

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	97.5	98.0	P/P	90 - 110
Total-P	98.8	97.5	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A60235

Included Lab Sample IDs: 1658547

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A60263

Included Lab Sample IDs: 1658533, 1658534, 1658535, 1658536, 1658537, 1658547

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

* Pass/Fail determinations are made for each bracketing calibration verification check.

Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery	LCS	Precision SMP	MS
EPA 180.1 Rev. 2.0	Turbidity				1.85	
	Turbidity				3.23	
	Turbidity				1.27	
EPA 350.1 Rev. 2.0	Ammonia-N	93.6	98.6 102			2.99

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision		
					LCS	SMP	MS
EPA 350.1 Rev. 2.0	Ammonia-N	96.4	98.4	101			2.30
	Ammonia-N	100	100	98.2			1.76
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	102					1.30
	Kjeldahl Nitrogen	102	93.9	101			6.37
	Kjeldahl Nitrogen	96.8	105	103			1.30
EPA 353.2 Rev. 2.0	NO2NO3-N	102	105	105			0.0
	NO2NO3-N	106	104	102			1.47
	NO2NO3-N	106	106	109			1.49
	NO2NO3-N	108	97.5	97.0			0.514
EPA 365.1 Rev. 2.0	Total-P	102	103	103			0.719
	Total-P	98.7	102	105			2.11
	Total-P	96.1	95.5	96.2			0.678

Reference Method Descriptions

Method / NELAC Cert. #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1658518, 1658519, 1658520, 1658521, 1658522, 1658523, 1658524, 1658525, 1658526, 1658527, 1658528, 1658529, 1658530, 1658531, 1658532
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1658533, 1658534, 1658535, 1658536, 1658537, 1658538, 1658539, 1658540, 1658541, 1658542, 1658543, 1658544, 1658545, 1658546, 1658547
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1658533, 1658534, 1658535, 1658536, 1658537, 1658538, 1658539, 1658540, 1658541, 1658542, 1658543, 1658544, 1658545, 1658546, 1658547
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1658533, 1658534, 1658535, 1658536, 1658537, 1658538, 1658539, 1658540, 1658541, 1658542, 1658543, 1658544, 1658545, 1658546, 1658547
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1658533, 1658534, 1658535, 1658536, 1658537, 1658538, 1658539, 1658540, 1658541, 1658542, 1658543, 1658544, 1658545, 1658546, 1658547
SM 2120 B / E31780	True Color measured at 450 nm	1658518, 1658519, 1658520, 1658521, 1658522, 1658523, 1658524, 1658525, 1658526, 1658527, 1658528, 1658529, 1658530, 1658531, 1658532
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1658518, 1658519, 1658520, 1658521, 1658522, 1658523, 1658524, 1658525, 1658526, 1658527, 1658528, 1658529, 1658530, 1658531, 1658532

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	12/05/2014			12/05/2014 14:54	Sima Feizi	1658518, 1658519, 1658520, 1658521, 1658522, 1658523, 1658524, 1658525, 1658526, 1658527, 1658528, 1658529, 1658530, 1658531, 1658532
EPA 350.1 Rev. 2.0	12/05/2014			12/17/2014	Diana M. Turner	1658533, 1658534, 1658535, 1658536, 1658537, 1658538, 1658539, 1658540, 1658541, 1658542, 1658543, 1658544, 1658545, 1658546
EPA 351.2 Rev. 2.0	12/05/2014	12/11/2014	Christopher Armour	12/18/2014	Diana M. Turner	1658547
	12/05/2014			12/12/2014	Bryan A. Werth	1658533, 1658534, 1658535, 1658536, 1658537, 1658538, 1658539, 1658540, 1658541, 1658542, 1658547
EPA 353.2 Rev. 2.0	12/05/2014	12/12/2014	Christopher Armour	12/16/2014	Bryan A. Werth	1658543, 1658544, 1658545, 1658546
	12/05/2014			12/09/2014	Peter D. Kaus	1658533, 1658534, 1658535, 1658536, 1658537, 1658538, 1658539, 1658540, 1658541, 1658542, 1658543, 1658544, 1658545, 1658546
EPA 365.1 Rev. 2.0	12/05/2014	12/11/2014	Christopher Armour	12/10/2014	Peter D. Kaus	1658547
	12/05/2014			12/17/2014	Lipi Saha	1658538, 1658539, 1658540, 1658541, 1658542, 1658543, 1658544, 1658545, 1658546
	12/05/2014	12/11/2014	Christopher Armour	12/19/2014	Lipi Saha	1658533, 1658534, 1658535, 1658536, 1658537, 1658547
SM 2120 B	12/05/2014			12/05/2014 14:58	Rochelle Y Jackson	1658518
	12/05/2014			12/05/2014 14:59	Rochelle Y Jackson	1658519
	12/05/2014			12/05/2014 15:00	Rochelle Y Jackson	1658520
	12/05/2014			12/05/2014 15:01	Rochelle Y Jackson	1658521, 1658522
	12/05/2014			12/05/2014 15:02	Rochelle Y Jackson	1658523
	12/05/2014			12/05/2014 15:03	Rochelle Y Jackson	1658524
	12/05/2014			12/05/2014 15:04	Rochelle Y Jackson	1658525, 1658526
	12/05/2014			12/05/2014 15:08	Rochelle Y Jackson	1658527, 1658528
	12/05/2014			12/05/2014 15:09	Rochelle Y Jackson	1658529
	12/05/2014			12/05/2014 15:11	Rochelle Y Jackson	1658530, 1658531
	12/05/2014			12/05/2014 15:12	Rochelle Y Jackson	1658532
SM 2540 D-97	12/05/2014			12/10/2014	Yijie Li	1658518, 1658519, 1658520, 1658521, 1658522, 1658523, 1658524, 1658525, 1658526, 1658527, 1658528, 1658529, 1658530, 1658531, 1658532