Chemical Analysis Report

NW-DIST-2012-02-28-01

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-2012-02-27-14**
Customer: **NW-DIST**
Project ID: **DISCRTNARY**

Send Reports to:
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160 Government Center
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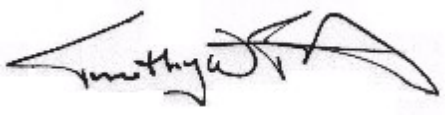
Certified by: Timothy Fitzpatrick, Program Administrator

Date Certified: 15-MAR-2012 08:59



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.
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
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).

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.

Sample Location: # 12 **Collection Date/Time: 02/27/2012 12:04 PM**

Field ID: # 12 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1410989	EPA 180.1 Rev. 2.0	Turbidity	5.2		NTU	P236595	
	SM 2120 B	Color (true)	39		PCU	P236604	
	SM 2540 D-97	TSS	7	I	mg/L	P237091	
1411003	EPA 350.1 Rev. 2.0	Ammonia-N	0.018	I	mg N/L	P236758	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.51		mg N/L	P236841	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.028		mg N/L	P236707	
	EPA 365.1 Rev. 2.0	Total-P	0.017	I	mg P/L	P236762	

Ref. Method and Comment:
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 MUSCOGEE **Collection Date/Time: 02/27/2012 11:11 AM**

Field ID: # 2 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1410980	EPA 180.1 Rev. 2.0	Turbidity	5.0		NTU	P236594	
	SM 2120 B	Color (true)	39	A	PCU	P236604	
	SM 2540 D-97	TSS	8	I	mg/L	P237090	
1410994	EPA 350.1 Rev. 2.0	Ammonia-N	0.020		mg N/L	P236757	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.33	I	mg N/L	P236751	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.024		mg N/L	P236706	
	EPA 365.1 Rev. 2.0	Total-P	0.016	I	mg P/L	P236761	

Ref. Method and Comment:
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 **Collection Date/Time: 02/27/2012 11:56 AM**

Field ID: # 7 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1410985	EPA 180.1 Rev. 2.0	Turbidity	5.0		NTU	P236595	
	SM 2120 B	Color (true)	40		PCU	P236604	
	SM 2540 D-97	TSS	3	I	mg/L	P237091	
1410999	EPA 350.1 Rev. 2.0	Ammonia-N	0.018	I	mg N/L	P236757	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.35	I	mg N/L	P236751	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.027		mg N/L	P236706	
	EPA 365.1 Rev. 2.0	Total-P	0.015	I	mg P/L	P236761	

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

Sample Location: 1/2 BETWEEN MUSCOGEE AND HAWKSHAW 400 FT FROM SHORE **Collection Date/Time: 02/27/2012 12:58 PM**

Field ID: # 6 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1410984	EPA 180.1 Rev. 2.0	Turbidity	4.9	A	NTU	P236595	
	SM 2120 B	Color (true)	38		PCU	P236604	
	SM 2540 D-97	TSS	8	I	mg/L	P237091	
1410998	EPA 350.1 Rev. 2.0	Ammonia-N	0.016	I	mg N/L	P236757	

Field ID: # 6 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1410998	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.40	I	mg N/L	P236751	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.026		mg N/L	P236706	
	EPA 365.1 Rev. 2.0	Total-P	0.015	I	mg P/L	P236761	

Ref. Method and Comment:
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 STORMDRAIN **Collection Date/Time: 02/27/2012 11:28 AM**

Field ID: # 4 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1410982	EPA 180.1 Rev. 2.0	Turbidity	4.3		NTU	P236594	
	SM 2120 B	Color (true)	37		PCU	P236604	
	SM 2540 D-97	TSS	7	I	mg/L	P237090	
1410996	EPA 350.1 Rev. 2.0	Ammonia-N	0.027		mg N/L	P236757	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.43		mg N/L	P236751	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.033		mg N/L	P236706	
	EPA 365.1 Rev. 2.0	Total-P	0.016	I	mg P/L	P236761	

Ref. Method and Comment:
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: 02/27/2012 12:24 PM**

Field ID: # 10 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1410988	EPA 180.1 Rev. 2.0	Turbidity	5.2		NTU	P236595	
	SM 2120 B	Color (true)	38		PCU	P236604	
	SM 2540 D-97	TSS	6	I	mg/L	P237091	
1411002	EPA 350.1 Rev. 2.0	Ammonia-N	0.024		mg N/L	P236757	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.32	I	mg N/L	P236841	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.032		mg N/L	P236707	
	EPA 365.1 Rev. 2.0	Total-P	0.017	I	mg P/L	P236762	

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

Sample Location: EAST OF PRIMARY STORMDRAIN **Collection Date/Time: 02/27/2012 11:20 AM**

Field ID: # 3 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1410981	EPA 180.1 Rev. 2.0	Turbidity	5.3		NTU	P236594	
	SM 2120 B	Color (true)	38		PCU	P236604	
	SM 2540 D-97	TSS	9	I	mg/L	P237090	
1410995	EPA 350.1 Rev. 2.0	Ammonia-N	0.019	I	mg N/L	P236757	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.42		mg N/L	P236751	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.027		mg N/L	P236706	
	EPA 365.1 Rev. 2.0	Total-P	0.015	I	mg P/L	P236761	

Ref. Method and Comment:
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 PG 2 **Collection Date/Time: 02/27/2012 12:38 PM**

Field ID: # 14 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1410991	EPA 180.1 Rev. 2.0	Turbidity	3.3		NTU	P236595	
	SM 2120 B	Color (true)	39	A	PCU	P236605	
	SM 2540 D-97	TSS	2	I	mg/L	P237091	
1411005	EPA 350.1 Rev. 2.0	Ammonia-N	0.023		mg N/L	P236758	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.37	I	mg N/L	P236841	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.026		mg N/L	P236707	
	EPA 365.1 Rev. 2.0	Total-P	0.013	I	mg P/L	P236762	

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

Sample Location: END OF CHASE STREET **Collection Date/Time: 02/27/2012 11:48 AM**

Field ID: # 5 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1410983	EPA 180.1 Rev. 2.0	Turbidity	4.8		NTU	P236594	
	SM 2120 B	Color (true)	38		PCU	P236604	
	SM 2540 D-97	TSS	8	I	mg/L	P237090	
1410997	EPA 350.1 Rev. 2.0	Ammonia-N	0.018	I	mg N/L	P236757	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.41		mg N/L	P236751	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.031		mg N/L	P236706	
	EPA 365.1 Rev. 2.0	Total-P	0.017	I	mg P/L	P236761	

Ref. Method and Comment:
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: 02/27/2012 12:15 PM**

Field ID: # 11 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1410992	EPA 180.1 Rev. 2.0	Turbidity	4.1		NTU	P236595	
	SM 2120 B	Color (true)	35		PCU	P236605	
	SM 2540 D-97	TSS	6	I	mg/L	P237091	
1411006	EPA 350.1 Rev. 2.0	Ammonia-N	0.049		mg N/L	P236758	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.41		mg N/L	P236841	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.20		mg N/L	P236707	
	EPA 365.1 Rev. 2.0	Total-P	0.021		mg P/L	P236762	

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

Sample Location: INSIDE HAWKSHAW LAGOON **Collection Date/Time: 02/27/2012 01:20 PM**

Field ID: # 13 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1410990	EPA 180.1 Rev. 2.0	Turbidity	8.0		NTU	P236595	
	SM 2120 B	Color (true)	12		PCU	P236605	
	SM 2540 D-97	TSS	18		mg/L	P237091	
1411004	EPA 350.1 Rev. 2.0	Ammonia-N	0.032		mg N/L	P236758	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.73		mg N/L	P236841	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.005	U	mg N/L	P236707	

Field ID: # 13 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1411004	EPA 365.1 Rev. 2.0	Total-P	0.084		mg P/L	P236762	

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

Sample Location: RANGE MARKER E OF TEXOR **Collection Date/Time: 02/27/2012 10:58 AM**

Field ID: # 1 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1410979	EPA 180.1 Rev. 2.0	Turbidity	11		NTU	P236594	
	SM 2120 B	Color (true)	39		PCU	P236603	
	SM 2540 D-97	TSS	13		mg/L	P237090	
1410993	EPA 350.1 Rev. 2.0	Ammonia-N	0.023		mg N/L	P236757	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.38	I	mg N/L	P236751	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.024		mg N/L	P236706	
	EPA 365.1 Rev. 2.0	Total-P	0.023		mg P/L	P236761	

Ref. Method and Comment:
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 100FT S OF OUTFALL **Collection Date/Time: 02/27/2012 12:30 PM**

Field ID: # 9 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1410987	EPA 180.1 Rev. 2.0	Turbidity	3.6		NTU	P236595	
	SM 2120 B	Color (true)	38		PCU	P236604	
	SM 2540 D-97	TSS	6	I	mg/L	P237091	
1411001	EPA 350.1 Rev. 2.0	Ammonia-N	0.024		mg N/L	P236757	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.29	I	mg N/L	P236841	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.029		mg N/L	P236706	
	EPA 365.1 Rev. 2.0	Total-P	0.016	I	mg P/L	P236762	

Ref. Method and Comment:
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 100FT SOUTH OF OUT FALL **Collection Date/Time: 02/27/2012 11:38 PM**

Field ID: # 8 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1410986	EPA 180.1 Rev. 2.0	Turbidity	3.3		NTU	P236595	
	SM 2120 B	Color (true)	36		PCU	P236604	
	SM 2540 D-97	TSS	4	I	mg/L	P237091	
1411000	EPA 350.1 Rev. 2.0	Ammonia-N	0.037		mg N/L	P236757	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.44		mg N/L	P236751	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.041		mg N/L	P236706	
	EPA 365.1 Rev. 2.0	Total-P	0.015	I	mg P/L	P236761	

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

Quality Assurance Report
Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P236594

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P236595

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P236757

Component	Result	Code	Units
Ammonia-N	0.010	U	mg N/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P236758

Component	Result	Code	Units
Ammonia-N	0.010	U	mg N/L

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P236751

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P236841

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P236706

Component	Result	Code	Units
NO2NO3-N	0.005	U	mg N/L

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P236707

Component	Result	Code	Units
NO2NO3-N	0.005	U	mg N/L

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P236761

Component	Result	Code	Units
Total-P	0.004	U	mg P/L

Quality Assurance Report
Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P236762

Component	Result	Code	Units
Total-P	0.004	U	mg P/L

Reference Method: SM 2120 B
Batch ID: P236603

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B
Batch ID: P236604

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B
Batch ID: P236605

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2540 D-97
Batch ID: P237090

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P237091

Component	Result	Code	Units
TSS	2	U	mg/L

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P236757

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P236758

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P236751

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P236751

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P236841

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P236706

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P236707

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P236761

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P236762

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

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P236757

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1410993	Ammonia-N	103	106	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P236758

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1411396	Ammonia-N	99.9	104	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P236751

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P236751

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1410996	Kjeldahl Nitrogen	104	108	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P236841

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1411209	Kjeldahl Nitrogen	109	98.9	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P236706

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1411000	NO2NO3-N	107	108	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P236707

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1411002	NO2NO3-N	107	108	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P236761

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1410863	Total-P	98.0	94.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P236762

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1411001	Total-P	97.9	99.5	P/P	90 - 110

Quality Assurance Report
Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P236594

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1410904	Turbidity	2.80	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P236595

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1410984	Turbidity	3.47	Sample	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P236757

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1410993	Ammonia-N	2.37	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P236758

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1411396	Ammonia-N	3.99	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P236751

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1410996	Kjeldahl Nitrogen	2.71	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P236841

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1411209	Kjeldahl Nitrogen	7.22	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P236706

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1411000	NO2NO3-N	0.391	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P236707

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1411002	NO2NO3-N	1.21	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P236761

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1410863	Total-P	2.69	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P236762

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1411001	Total-P	1.50	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: SM 2120 B
Batch ID: P236603

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1410896	Color (true)	2.36	Sample	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P236604

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1410980	Color (true)	1.97	Sample	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P236605

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1410991	Color (true)	2.98	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: EPA 180.1 Rev. 2.0
Run ID: A43768
Included Lab Sample IDs: 1410979, 1410980, 1410981, 1410982, 1410983, 1410984, 1410985, 1410986, 1410987, 1410988, 1410989, 1410990, 1410991, 1410992

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

Reference Method: SM 2120 B
Run ID: A43770
Included Lab Sample IDs: 1410979, 1410980, 1410981, 1410982, 1410983, 1410984, 1410985, 1410986, 1410987, 1410988, 1410989, 1410990, 1410991, 1410992

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	104	104	P/P	85 - 115
Color (true)	104	104	P/P	85 - 115
Color (true)	104	104	P/P	85 - 115

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A43817
Included Lab Sample IDs: 1410993, 1410994, 1410995, 1410996, 1410997, 1410998, 1410999, 1411000, 1411001, 1411002, 1411003, 1411004, 1411005, 1411006

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

Quality Assurance Report
Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A43836
Included Lab Sample IDs: 1410993, 1410994, 1410995, 1410996, 1410997, 1410998, 1410999, 1411000

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	97.6	100	P/P	90 - 110
Kjeldahl Nitrogen	99.7	103	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A43840
Included Lab Sample IDs: 1410993, 1410994, 1410995, 1410996, 1410997, 1410998, 1410999, 1411000, 1411001, 1411002, 1411003, 1411004, 1411005, 1411006

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

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A43843
Included Lab Sample IDs: 1410993, 1410994, 1410995, 1410996, 1410997, 1410998, 1410999, 1411000, 1411001, 1411002, 1411003, 1411004, 1411005, 1411006

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	96.4	98.5	P/P	90 - 110
Total-P	99.4	96.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A43876
Included Lab Sample IDs: 1411001, 1411002, 1411003, 1411004, 1411005, 1411006

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	96.9	98.2	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	SMP	MS
EPA 180.1 Rev. 2.0	Turbidity					2.80	
	Turbidity					3.47	
EPA 350.1 Rev. 2.0	Ammonia-N	98.6	103	106			2.37
	Ammonia-N	97.4	99.9	104			3.99
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	99.3	104	108			2.71
	Kjeldahl Nitrogen	100	109	98.9			7.22
EPA 353.2 Rev. 2.0	NO2NO3-N	105	107	108			0.391
	NO2NO3-N	106	107	108			1.21
EPA 365.1 Rev. 2.0	Total-P	101	98.0	94.4			2.69
	Total-P	99.1	97.9	99.5			1.50
SM 2120 B	Color (true)					2.36	
	Color (true)					1.97	
	Color (true)					2.98	

Reference Method Descriptions

Method / NELAC Cert. #	Description
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L
SM 2120 B / E31780	True Color measured at 450 nm or Apparent Color
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 180.1 Rev. 2.0	02/28/2012			02/28/2012 16:16	Bryan A. Werth	1410979, 1410980, 1410981, 1410982, 1410983, 1410984, 1410985, 1410986, 1410987, 1410988, 1410989, 1410990, 1410991, 1410992
EPA 350.1 Rev. 2.0	02/28/2012			03/02/2012	Diana M. Dunbar	1410993, 1410994, 1410995, 1410996, 1410997, 1410998, 1410999, 1411000, 1411001, 1411002, 1411003, 1411004, 1411005, 1411006
EPA 351.2 Rev. 2.0	02/28/2012	03/01/2012	Bryan A. Werth	03/02/2012	Christopher Armour	1410993, 1410994, 1410995, 1410996, 1410997, 1410998, 1410999, 1411000, 1411001, 1411002, 1411003, 1411004, 1411005, 1411006
EPA 353.2 Rev. 2.0	02/28/2012			03/01/2012	Diana M. Dunbar	1410993, 1410994, 1410995, 1410996, 1410997, 1410998, 1410999, 1411000, 1411001, 1411002, 1411003, 1411004, 1411005, 1411006
EPA 365.1 Rev. 2.0	02/28/2012	03/01/2012	Pallavi R. Gadwal	03/02/2012	Megan E. Faircloth	1410993, 1410994, 1410995, 1410996, 1410997, 1410998, 1410999, 1411000, 1411001, 1411002, 1411003, 1411004, 1411005, 1411006
SM 2120 B	02/28/2012			02/28/2012 15:06	Rochelle Y Jackson	1410979
	02/28/2012			02/28/2012 15:10	Rochelle Y Jackson	1410980
	02/28/2012			02/28/2012 15:11	Rochelle Y Jackson	1410981
	02/28/2012			02/28/2012 15:12	Rochelle Y Jackson	1410982
	02/28/2012			02/28/2012 15:13	Rochelle Y Jackson	1410983
	02/28/2012			02/28/2012 15:14	Rochelle Y Jackson	1410984
	02/28/2012			02/28/2012 15:15	Rochelle Y Jackson	1410985
	02/28/2012			02/28/2012 15:16	Rochelle Y Jackson	1410986
	02/28/2012			02/28/2012 15:17	Rochelle Y Jackson	1410987
	02/28/2012			02/28/2012 15:18	Rochelle Y Jackson	1410988
	02/28/2012			02/28/2012 15:19	Rochelle Y Jackson	1410989
	02/28/2012			02/28/2012 15:22	Rochelle Y Jackson	1410990
	02/28/2012			02/28/2012 15:24	Rochelle Y Jackson	1410991
	02/28/2012			02/28/2012 15:25	Rochelle Y Jackson	1410992
SM 2540 D-97	02/28/2012			03/02/2012	Yijie Li	1410979, 1410980, 1410981, 1410982, 1410983, 1410984, 1410985, 1410986, 1410987, 1410988, 1410989, 1410990, 1410991, 1410992