

Chemical Analysis Report

NW-DIST-2012-08-21-03

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

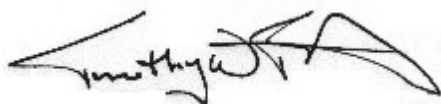
Event Description: **Project Greenshores**
Request ID: **RQ-2012-08-20-12**
Customer: **NW-DIST**
Project ID: **DISCRTNARY**

Send Reports to:
FL Dept. of Environmental Protection
160 Government Center
Suite 308
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Attn: Cheryl Bunch

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Certified by: Timothy Fitzpatrick, Program Administrator

Date Certified: 05-SEP-2012 08:51

A handwritten signature in black ink, appearing to read "Timothy W. Fitzpatrick", with a stylized flourish at the end.

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

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.

Sample Location: 1/2 BETWEEN BRIDGE AND PORT

Collection Date/Time: 08/20/2012 10:26 AM

Field ID: 7

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1449100	EPA 180.1 Rev. 2.0	Turbidity	2.3		NTU	P243343	
	SM 2120 B	Color (true)	11		PCU	P243313	
	SM 2540 D-97	TSS	3	U	mg/L	P243656	
1449114	EPA 350.1 Rev. 2.0	Ammonia-N	0.010	U	mg N/L	P243436	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.95		mg N/L	P243505	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.008	I	mg N/L	P243491	
	EPA 365.1 Rev. 2.0	Total-P	0.020		mg P/L	P243478	

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 MUSCOGEE AND HAWKSHAW + 400 FT FROM SHORE

Collection Date/Time: 08/20/2012 11:15 AM

Field ID: 6

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1449099	EPA 180.1 Rev. 2.0	Turbidity	3.3		NTU	P243343	
	SM 2120 B	Color (true)	11		PCU	P243313	
	SM 2540 D-97	TSS	3	I	mg/L	P243656	
1449113	EPA 350.1 Rev. 2.0	Ammonia-N	0.012	I	mg N/L	P243436	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.78		mg N/L	P243505	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.011		mg N/L	P243491	
	EPA 365.1 Rev. 2.0	Total-P	0.024		mg P/L	P243478	

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: 1/4 BETWEEN PORT/BRIDGE

Collection Date/Time: 08/20/2012 10:30 AM

Field ID: 12

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1449097	EPA 180.1 Rev. 2.0	Turbidity	2.4		NTU	P243343	
	SM 2120 B	Color (true)	11		PCU	P243313	
	SM 2540 D-97	TSS	3	U	mg/L	P243656	
1449111	EPA 350.1 Rev. 2.0	Ammonia-N	0.010	U	mg N/L	P243436	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.52		mg N/L	P243505	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.008	I	mg N/L	P243490	
	EPA 365.1 Rev. 2.0	Total-P	0.023		mg P/L	P243478	

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 STORM DRAIN

Collection Date/Time: 08/20/2012 10:11 AM

Field ID: 4

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1449105	EPA 180.1 Rev. 2.0	Turbidity	2.4		NTU	P243344	
	SM 2120 B	Color (true)	9.0		PCU	P243314	
	SM 2540 D-97	TSS	3	U	mg/L	P243657	
1449119	EPA 350.1 Rev. 2.0	Ammonia-N	0.060		mg N/L	P243440	

Field ID: 4

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1449119	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.48		mg N/L	P243664	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.022		mg N/L	P243491	
	EPA 365.1 Rev. 2.0	Total-P	0.020		mg P/L	P243480	

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: 08/20/2012 10:41 AM

Field ID: 10

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1449095	EPA 180.1 Rev. 2.0	Turbidity	2.9		NTU	P243343	
	SM 2120 B	Color (true)	11		PCU	P243313	
	SM 2540 D-97	TSS	3	U	mg/L	P243656	
1449109	EPA 350.1 Rev. 2.0	Ammonia-N	0.011	I	mg N/L	P243436	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.67		mg N/L	P243505	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.010	I	mg N/L	P243490	
	EPA 365.1 Rev. 2.0	Total-P	0.029		mg P/L	P243478	

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 STORM DRAIN

Collection Date/Time: 08/20/2012 10:06 AM

Field ID: 3

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1449104	EPA 180.1 Rev. 2.0	Turbidity	3.2		NTU	P243343	
	SM 2120 B	Color (true)	9.8		PCU	P243314	
	SM 2540 D-97	TSS	4	I	mg/L	P243657	
1449118	EPA 350.1 Rev. 2.0	Ammonia-N	0.035		mg N/L	P243440	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.50		mg N/L	P243800	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.013		mg N/L	P243491	
	EPA 365.1 Rev. 2.0	Total-P	0.022		mg P/L	P243480	

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 STORM DRAIN INSIDE PGS 2

Collection Date/Time: 08/20/2012 11:07 AM

Field ID: 14

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1449107	EPA 180.1 Rev. 2.0	Turbidity	4.1		NTU	P243344	
	SM 2120 B	Color (true)	7.4		PCU	P243314	
	SM 2540 D-97	TSS	4	I	mg/L	P243657	
1449121	EPA 350.1 Rev. 2.0	Ammonia-N	0.032		mg N/L	P243440	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.39	I	mg N/L	P243664	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.031		mg N/L	P243491	
	EPA 365.1 Rev. 2.0	Total-P	0.026		mg P/L	P243480	

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 ST

Collection Date/Time: 08/20/2012 10:20 AM

Field ID: 5

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1449098	EPA 180.1 Rev. 2.0	Turbidity	2.7		NTU	P243343	
	SM 2120 B	Color (true)	9.0		PCU	P243313	
	SM 2540 D-97	TSS	4	I	mg/L	P243656	
1449112	EPA 350.1 Rev. 2.0	Ammonia-N	0.041		mg N/L	P243436	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.66		mg N/L	P243505	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.020		mg N/L	P243490	
	EPA 365.1 Rev. 2.0	Total-P	0.026		mg P/L	P243478	

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: 08/20/2012 10:35 AM

Field ID: 11

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1449096	EPA 180.1 Rev. 2.0	Turbidity	6.0	A	NTU	P243343	
	SM 2120 B	Color (true)	8.5		PCU	P243313	
	SM 2540 D-97	TSS	7	I	mg/L	P243656	
1449110	EPA 350.1 Rev. 2.0	Ammonia-N	0.024		mg N/L	P243436	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.68		mg N/L	P243505	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.14		mg N/L	P243490	
	EPA 365.1 Rev. 2.0	Total-P	0.045		mg P/L	P243478	

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: 08/20/2012 11:00 AM

Field ID: 13

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1449106	EPA 180.1 Rev. 2.0	Turbidity	7.2	A	NTU	P243344	
	SM 2120 B	Color (true)	12		PCU	P243314	
	SM 2540 D-97	TSS	11		mg/L	P243657	
1449120	EPA 350.1 Rev. 2.0	Ammonia-N	0.010	U	mg N/L	P243440	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.84		mg N/L	P243800	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.009	I	mg N/L	P243491	
	EPA 365.1 Rev. 2.0	Total-P	0.054		mg P/L	P243453	

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: PENSACOLA BAY-E OF RANGE MARKER

Collection Date/Time: 08/20/2012 09:52 AM

Field ID: 1

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1449102	EPA 180.1 Rev. 2.0	Turbidity	3.5		NTU	P243343	
	SM 2120 B	Color (true)	12		PCU	P243313	
	SM 2540 D-97	TSS	3	I	mg/L	P243656	
1449116	EPA 350.1 Rev. 2.0	Ammonia-N	0.034		mg N/L	P243440	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.51		mg N/L	P243800	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.014		mg N/L	P243491	

Field ID: 1

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1449116	EPA 365.1 Rev. 2.0	Total-P	0.022		mg P/L	P243480	

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: PNS BAY 1/2 BRIDGE-MUSCOGEE

Collection Date/Time: 08/20/2012 10:00 AM

Field ID: 2

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1449103	EPA 180.1 Rev. 2.0	Turbidity	2.3		NTU	P243343	
	SM 2120 B	Color (true)	12		PCU	P243314	
	SM 2540 D-97	TSS	3	U	mg/L	P243656	
1449117	EPA 350.1 Rev. 2.0	Ammonia-N	0.010	U	mg N/L	P243440	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.45		mg N/L	P243800	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.008	I	mg N/L	P243491	
	EPA 365.1 Rev. 2.0	Total-P	0.020		mg P/L	P243480	

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: W OF STORMDRAIN- INSIDE ROCKS

Collection Date/Time: 08/20/2012 10:16 AM

Field ID: 8

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1449101	EPA 180.1 Rev. 2.0	Turbidity	2.8		NTU	P243343	
	SM 2120 B	Color (true)	7.8		PCU	P243313	
	SM 2540 D-97	TSS	3	I	mg/L	P243656	
1449115	EPA 350.1 Rev. 2.0	Ammonia-N	0.069		mg N/L	P243440	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.49		mg N/L	P243800	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.025		mg N/L	P243491	
	EPA 365.1 Rev. 2.0	Total-P	0.022		mg P/L	P243480	

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 OF HAWKSHAW 100 FT S OF OUTFALL

Collection Date/Time: 08/20/2012 10:45 AM

Field ID: 9

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1449094	EPA 180.1 Rev. 2.0	Turbidity	3.1		NTU	P243342	
	SM 2120 B	Color (true)	9.0	A	PCU	P243313	
	SM 2540 D-97	TSS	3	I	mg/L	P243656	
1449108	EPA 350.1 Rev. 2.0	Ammonia-N	0.027		mg N/L	P243436	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.60		mg N/L	P243505	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.030		mg N/L	P243490	
	EPA 365.1 Rev. 2.0	Total-P	0.027		mg P/L	P243478	

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P243342

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P243343

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P243344

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P243436

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P243440

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P243505

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P243664

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P243800

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P243490

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: P243491

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P243453

Component	Result	Code	Units
Total-P	0.005	U	mg P/L

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P243478

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P243480

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

Reference Method: SM 2120 B
Batch ID: P243313

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B
Batch ID: P243314

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2540 D-97
Batch ID: P243656

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P243657

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: P243436

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P243436

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P243440

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P243505

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P243664

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P243800

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P243490

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	99.0		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P243491

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	98.0		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P243453

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P243478

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P243480

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: P243436

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1448964	Ammonia-N	97.2	93.7	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P243440

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1449116	Ammonia-N	106	104	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P243505

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1449113	Kjeldahl Nitrogen	95.4	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P243664

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1449121	Kjeldahl Nitrogen	99.1	94.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P243800

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1449117	Kjeldahl Nitrogen	103	105	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P243490

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1448987	NO2NO3-N	98.2		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P243491

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1449113	NO2NO3-N	99.2	98.7	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P243453

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P243453

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1449118	Total-P	99.2	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P243478

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1449110	Total-P	103	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P243480

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1449118	Total-P	99.1	96.5	P/P	90 - 110

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P243342

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1448985	Turbidity	6.05	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P243343

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1449096	Turbidity	4.97	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P243344

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1449106	Turbidity	0.139	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P243436

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1448964	Ammonia-N	3.48	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P243440

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1449116	Ammonia-N	1.81	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P243505

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1449113	Kjeldahl Nitrogen	3.67	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P243664

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1449121	Kjeldahl Nitrogen	4.37	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P243800

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1449117	Kjeldahl Nitrogen	1.78	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P243490

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1448987	NO2NO3-N	0.813	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P243491

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1449113	NO2NO3-N	0.480	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P243453

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1449118	Total-P	0.705	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P243478

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1449110	Total-P	0.606	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P243480

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1449118	Total-P	2.17	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2120 B
Batch ID: P243313

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1449094	Color (true)	1.78	Sample	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P243314

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1449170	Color (true)	1.31	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: A46622

Included Lab Sample IDs: 1449094, 1449095, 1449096, 1449097, 1449098, 1449099, 1449100, 1449101, 1449102, 1449103, 1449104, 1449105, 1449106, 1449107

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	95.5	95.1	P/P	85 - 115
Color (true)	95.7	95.5	P/P	85 - 115

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A46629

Included Lab Sample IDs: 1449094, 1449095, 1449096, 1449097, 1449098, 1449099, 1449100, 1449101, 1449102, 1449103, 1449104, 1449105, 1449106, 1449107

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

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A46660

Included Lab Sample IDs: 1449108, 1449109, 1449110, 1449111, 1449112, 1449113, 1449114

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

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A46661

Included Lab Sample IDs: 1449115, 1449116, 1449117, 1449118, 1449119, 1449120, 1449121

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	105	104	P/P	90 - 110
Ammonia-N	106	101	P/P	90 - 110
Ammonia-N	106	105	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A46664
Included Lab Sample IDs: 1449120

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	97.0	97.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A46677

Included Lab Sample IDs: 1449108, 1449109, 1449110, 1449111, 1449112, 1449113, 1449114, 1449115, 1449116, 1449117, 1449118, 1449119, 1449121

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	97.8	99.0	P/P	90 - 110
Total-P	98.8	97.8	P/P	90 - 110
Total-P	99.0	96.6	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A46683

Included Lab Sample IDs: 1449108, 1449109, 1449110, 1449111, 1449112, 1449113, 1449114, 1449115, 1449116, 1449117, 1449118, 1449119, 1449120, 1449121

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	97.0	97.6	P/P	90 - 110
NO2NO3-N	97.6	97.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A46688

Included Lab Sample IDs: 1449108, 1449109, 1449110, 1449111, 1449112, 1449113, 1449114

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	98.1	P/P	90 - 110
Kjeldahl Nitrogen	96.3	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A46751

Included Lab Sample IDs: 1449119, 1449121

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	96.3	96.9	P/P	90 - 110
Kjeldahl Nitrogen	98.3	94.7	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A46805

Included Lab Sample IDs: 1449115, 1449116, 1449117, 1449118, 1449120

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	90.6	93.3	P/P	90 - 110
Kjeldahl Nitrogen	91.3	95.9	P/P	90 - 110
Kjeldahl Nitrogen	92.1	91.3	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					6.05	
	Turbidity					4.97	
	Turbidity					0.139	
EPA 350.1 Rev. 2.0	Ammonia-N	99.4	97.2	93.7			3.48
	Ammonia-N	101	106	104			1.81
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	107	95.4	100			3.67
	Kjeldahl Nitrogen	109	99.1	94.2			4.37
	Kjeldahl Nitrogen	102	103	105			1.78
EPA 353.2 Rev. 2.0	NO2NO3-N	99.0	98.2				0.813
	NO2NO3-N	98.0	99.2	98.7			0.480
EPA 365.1 Rev. 2.0	Total-P	99.4	99.2	100			0.705
	Total-P	102	103	104			0.606
	Total-P	101	99.1	96.5			2.17
SM 2120 B	Color (true)					1.78	
	Color (true)					1.31	

Reference Method Descriptions

Method / NELAC Cert. #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1449094, 1449095, 1449096, 1449097, 1449098, 1449099, 1449100, 1449101, 1449102, 1449103, 1449104, 1449105, 1449106, 1449107
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1449108, 1449109, 1449110, 1449111, 1449112, 1449113, 1449114, 1449115, 1449116, 1449117, 1449118, 1449119, 1449120, 1449121
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1449108, 1449109, 1449110, 1449111, 1449112, 1449113, 1449114, 1449115, 1449116, 1449117, 1449118, 1449119, 1449120, 1449121
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1449108, 1449109, 1449110, 1449111, 1449112, 1449113, 1449114, 1449115, 1449116, 1449117, 1449118, 1449119, 1449120, 1449121
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1449108, 1449109, 1449110, 1449111, 1449112, 1449113, 1449114, 1449115, 1449116, 1449117, 1449118, 1449119, 1449120, 1449121
SM 2120 B / E31780	True Color measured at 450 nm or Apparent Color	1449094, 1449095, 1449096, 1449097, 1449098, 1449099, 1449100, 1449101, 1449102, 1449103, 1449104, 1449105, 1449106, 1449107
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1449094, 1449095, 1449096, 1449097, 1449098, 1449099, 1449100, 1449101, 1449102, 1449103, 1449104, 1449105, 1449106, 1449107

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	08/21/2012			08/21/2012 16:24	Bryan A. Werth	1449094, 1449095, 1449096, 1449097, 1449098, 1449099, 1449100, 1449101, 1449102, 1449103, 1449104, 1449105, 1449106, 1449107
EPA 350.1 Rev. 2.0	08/21/2012			08/22/2012	Peter D. Kaus	1449108, 1449109, 1449110, 1449111, 1449112, 1449113, 1449114, 1449115, 1449116, 1449117, 1449118, 1449119, 1449120, 1449121
EPA 351.2 Rev. 2.0	08/21/2012	08/22/2012	Bryan A. Werth	08/23/2012	Christopher Armour	1449108, 1449109, 1449110, 1449111, 1449112, 1449113, 1449114
	08/21/2012	08/27/2012	Christopher Armour	08/29/2012	Bryan A. Werth	1449119, 1449121
	08/21/2012	08/31/2012	Bryan A. Werth	09/04/2012	Christopher Armour	1449115, 1449116, 1449117, 1449118, 1449120
EPA 353.2 Rev. 2.0	08/21/2012			08/23/2012	Sima Feizi	1449108, 1449109, 1449110, 1449111, 1449112, 1449113, 1449114, 1449115, 1449116, 1449117, 1449118, 1449119, 1449120, 1449121
EPA 365.1 Rev. 2.0	08/21/2012	08/22/2012	Megan E. Faircloth	08/23/2012	Christopher Armour	1449120
	08/21/2012	08/22/2012	Megan E. Faircloth	08/23/2012	Pallavi R. Gadwal	1449108, 1449109, 1449110, 1449111, 1449112, 1449113, 1449114, 1449115, 1449116, 1449117, 1449118, 1449119, 1449121
SM 2120 B	08/21/2012			08/21/2012 13:42	Rochelle Y Jackson	1449094
	08/21/2012			08/21/2012 13:43	Rochelle Y Jackson	1449095
	08/21/2012			08/21/2012 13:44	Rochelle Y Jackson	1449096
	08/21/2012			08/21/2012 13:45	Rochelle Y Jackson	1449097
	08/21/2012			08/21/2012 13:46	Rochelle Y Jackson	1449098
	08/21/2012			08/21/2012 13:47	Rochelle Y Jackson	1449099
	08/21/2012			08/21/2012 13:48	Rochelle Y Jackson	1449100
	08/21/2012			08/21/2012 13:49	Rochelle Y Jackson	1449101
	08/21/2012			08/21/2012 13:50	Rochelle Y Jackson	1449102
	08/21/2012			08/21/2012 13:53	Rochelle Y Jackson	1449103
	08/21/2012			08/21/2012 13:54	Rochelle Y Jackson	1449104
	08/21/2012			08/21/2012 13:55	Rochelle Y Jackson	1449105
	08/21/2012			08/21/2012 13:56	Rochelle Y Jackson	1449106
	08/21/2012			08/21/2012 13:57	Rochelle Y Jackson	1449107
SM 2540 D-97	08/21/2012			08/23/2012	Yijie Li	1449094, 1449095, 1449096, 1449097, 1449098, 1449099, 1449100, 1449101, 1449102, 1449103, 1449104, 1449105, 1449106, 1449107