

Chemical Analysis Report

NW-DIST-2014-02-25-02

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

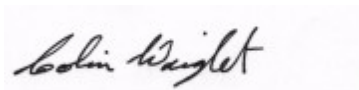
Event Description: **Project Greenshores**
Request ID: **RQ-2013-11-25-06**
Customer: **NW-DIST**
Project ID: **DISCRTNARY**

Send Reports to:
FL Dept. of Environmental Protection
160 Government Center
Suite 308
Pensacola, FL 32502-5794
Attn: Cheryl Bunch

For additional information please contact
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Certified by: Colin Wright, Environmental Administrator

Date Certified: 07-MAR-2014 12:35



NON-CONFORMANCE REPORT INCLUDED

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.

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

Sample Location: Range Marker E. of Texar

Collection Date/Time: 02/24/2014 10:40 AM

Field ID: 1

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1579849	EPA 180.1 Rev. 2.0	Turbidity	5.8	A	NTU	P264175	
	SM 2120 B	Color (true)	21	A	PCU	P264172	
	SM 2540 D-97	TSS	7	I	mg/L	P264430	
1579863	EPA 350.1 Rev. 2.0	Ammonia-N	0.014	Y	mg N/L	P264216	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.36	IY	mg N/L	P264369	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.048	Y	mg N/L	P264254	
	EPA 365.1 Rev. 2.0	Total-P	0.025	Y	mg P/L	P264362	

Ref. Method and Comment:

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 sample was received unpreserved: pH > 2. Sample preserved in laboratory.

EPA 351.2 Rev. 2.0: The sample was received unpreserved: pH > 2. Sample preserved in laboratory.

EPA 353.2 Rev. 2.0: The sample was received unpreserved: pH > 2. Sample preserved in laboratory.

EPA 365.1 Rev. 2.0: Total-P: The sample was received unpreserved: pH > 2. Sample preserved in laboratory.

Sample Location: 1/2 Bridge and Muscogee

Collection Date/Time: 02/24/2014 10:52 AM

Field ID: 2

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1579850	EPA 180.1 Rev. 2.0	Turbidity	3.8		NTU	P264175	
	SM 2120 B	Color (true)	18		PCU	P264172	
	SM 2540 D-97	TSS	4	I	mg/L	P264430	
1579864	EPA 350.1 Rev. 2.0	Ammonia-N	0.021		mg N/L	P264216	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.42		mg N/L	P264369	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.034		mg N/L	P264254	
	EPA 365.1 Rev. 2.0	Total-P	0.024		mg P/L	P264362	

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: E. of Primary Stormdrain PGS1

Collection Date/Time: 02/24/2014 10:58 AM

Field ID: 3

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1579851	EPA 180.1 Rev. 2.0	Turbidity	3.4		NTU	P264175	
	SM 2120 B	Color (true)	18		PCU	P264172	
	SM 2540 D-97	TSS	3	U	mg/L	P264430	
1579865	EPA 350.1 Rev. 2.0	Ammonia-N	0.015		mg N/L	P264216	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.33	I	mg N/L	P264369	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.025		mg N/L	P264254	
	EPA 365.1 Rev. 2.0	Total-P	0.025		mg P/L	P264362	

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: 100ft S. of Stormdrain

Collection Date/Time: 02/24/2014 11:04 AM

Field ID: 4

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1579852	EPA 180.1 Rev. 2.0	Turbidity	2.4		NTU	P264175	
	SM 2120 B	Color (true)	16		PCU	P264172	

Field ID: 4

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1579852	SM 2540 D-97	TSS	4	I	mg/L	P264430	
1579866	EPA 350.1 Rev. 2.0	Ammonia-N	0.023		mg N/L	P264216	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.29	I	mg N/L	P264369	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.029		mg N/L	P264254	
	EPA 365.1 Rev. 2.0	Total-P	0.018		mg P/L	P264362	

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: 02/24/2014 11:18 AM

Field ID: 5

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1579853	EPA 180.1 Rev. 2.0	Turbidity	2.7		NTU	P264175	
	SM 2120 B	Color (true)	17		PCU	P264172	
	SM 2540 D-97	TSS	3	I	mg/L	P264430	
1579867	EPA 350.1 Rev. 2.0	Ammonia-N	0.031		mg N/L	P264216	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.37	I	mg N/L	P264369	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.038		mg N/L	P264254	
	EPA 365.1 Rev. 2.0	Total-P	0.029		mg P/L	P264362	

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 400ft. from shore

Collection Date/Time: 02/24/2014 11:25 AM

Field ID: 6

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1579854	EPA 180.1 Rev. 2.0	Turbidity	3.1		NTU	P264175	
	SM 2120 B	Color (true)	16		PCU	P264172	
	SM 2540 D-97	TSS	6	I	mg/L	P264430	
1579868	EPA 350.1 Rev. 2.0	Ammonia-N	0.019		mg N/L	P264216	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.38	I	mg N/L	P264369	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.028		mg N/L	P264254	
	EPA 365.1 Rev. 2.0	Total-P	0.022		mg P/L	P264362	

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 Bridge and Port

Collection Date/Time: 02/24/2014 12:17 PM

Field ID: 7

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1579855	EPA 180.1 Rev. 2.0	Turbidity	5.9		NTU	P264175	
	SM 2120 B	Color (true)	24		PCU	P264172	
	SM 2540 D-97	TSS	6	I	mg/L	P264430	
1579869	EPA 350.1 Rev. 2.0	Ammonia-N	0.009		mg N/L	P264216	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.39	I	mg N/L	P264369	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.039		mg N/L	P264254	
	EPA 365.1 Rev. 2.0	Total-P	0.022		mg P/L	P264362	

Field ID: 7

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

Sample Location: West of Stormdrain - Inside Rocks

Collection Date/Time: 02/24/2014 11:12 AM

Field ID: 8

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
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1579856	EPA 180.1 Rev. 2.0	Turbidity	2.2		NTU	P264175	
	SM 2120 B	Color (true)	17		PCU	P264172	
	SM 2540 D-97	TSS	3	U	mg/L	P264430	
1579870	EPA 350.1 Rev. 2.0	Ammonia-N	0.028		mg N/L	P264216	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.28	I	mg N/L	P264369	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.035		mg N/L	P264254	
	EPA 365.1 Rev. 2.0	Total-P	0.020		mg P/L	P264362	

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. End of Hawkshaw 100ft. S. of Outfall

Collection Date/Time: 02/24/2014 11:51 AM

Field ID: 9

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
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1579857	EPA 180.1 Rev. 2.0	Turbidity	3.6		NTU	P264175	
	SM 2120 B	Color (true)	18		PCU	P264172	
	SM 2540 D-97	TSS	4	I	mg/L	P264430	
1579871	EPA 350.1 Rev. 2.0	Ammonia-N	0.019		mg N/L	P264216	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.36	I	mg N/L	P264369	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.039		mg N/L	P264254	
	EPA 365.1 Rev. 2.0	Total-P	0.024		mg P/L	P264362	

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: 02/24/2014 11:58 AM

Field ID: 10

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
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1579858	EPA 180.1 Rev. 2.0	Turbidity	4.5	A	NTU	P264176	
	SM 2120 B	Color (true)	19	A	PCU	P264173	
	SM 2540 D-97	TSS	5	I	mg/L	P264432	
1579872	EPA 350.1 Rev. 2.0	Ammonia-N	0.016		mg N/L	P264217	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.41		mg N/L	P264371	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.048		mg N/L	P264255	
	EPA 365.1 Rev. 2.0	Total-P	0.027		mg P/L	P264364	

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: 02/24/2014 12:04 PM

Field ID: 11

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
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Field ID: 11

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1579859	EPA 180.1 Rev. 2.0	Turbidity	4.8		NTU	P264176	
	SM 2120 B	Color (true)	19		PCU	P264173	
	SM 2540 D-97	TSS	4	I	mg/L	P264432	
1579873	EPA 350.1 Rev. 2.0	Ammonia-N	0.016		mg N/L	P264217	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.50		mg N/L	P264371	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.045		mg N/L	P264255	
	EPA 365.1 Rev. 2.0	Total-P	0.029		mg P/L	P264364	

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 Bridge and Port 400 feet from shore

Collection Date/Time: 02/24/2014 12:12 PM

Field ID: 12

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1579860	EPA 180.1 Rev. 2.0	Turbidity	5.2		NTU	P264176	
	SM 2120 B	Color (true)	20		PCU	P264173	
	SM 2540 D-97	TSS	5	I	mg/L	P264432	
1579874	EPA 350.1 Rev. 2.0	Ammonia-N	0.013		mg N/L	P264217	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.31	I	mg N/L	P264371	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.036		mg N/L	P264255	
	EPA 365.1 Rev. 2.0	Total-P	0.023		mg P/L	P264364	

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: 02/24/2014 11:45 AM

Field ID: 13

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1579861	EPA 180.1 Rev. 2.0	Turbidity	3.5		NTU	P264176	
	SM 2120 B	Color (true)	14		PCU	P264173	
	SM 2540 D-97	TSS	5	I	mg/L	P264429	
1579875	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P264217	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.46		mg N/L	P264371	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.011		mg N/L	P264255	
	EPA 365.1 Rev. 2.0	Total-P	0.044		mg P/L	P264364	

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: E. of Stormdrain Inside Rocks

Collection Date/Time: 02/24/2014 11:33 AM

Field ID: 14

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1579862	EPA 180.1 Rev. 2.0	Turbidity	3.0		NTU	P264176	
	SM 2120 B	Color (true)	17		PCU	P264173	
	SM 2540 D-97	TSS	3	I	mg/L	P264432	
1579876	EPA 350.1 Rev. 2.0	Ammonia-N	0.018		mg N/L	P264217	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.31	I	mg N/L	P264371	

Field ID: 14

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1579876	EPA 353.2 Rev. 2.0	NO2NO3-N	0.027		mg N/L	P264255	
	EPA 365.1 Rev. 2.0	Total-P	0.023		mg P/L	P264364	

Ref. Method and Comment:

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

Non-Conformance Report

NCR ID: 4828

Event(s)

Job(s)

Sample(s)

Test(s)

NW-DIST-2014-02-25-02

NCR Type: SHIPPING/RECEIVING

NCR Category: Preservation Not Intact

Observation: The following issue concerns RQ-2013-11-25-06.

Preservation was not intact for the plastic 500 mL bottle from site 1 containing the following tests (W-NH3, W-NO2NO3, W-S-A-TP, W-TKN).

Resolution: 1 vial of H2SO4 (Sulfuric Acid) was added to the sample container at 10:07 a.m. EST on 02/25/2014, effectively bringing the pH to < or = to 2.0.

Authorised by/Date: Kathryn Holland 3/3/2014

The Non-Conformance Report details exceptions or problems encountered with the events/jobs/samples/test.
Please address questions to:

Chemistry Tim Fitzpatrick (850) 245-8085
Biology David D. Whiting (850) 245-8177

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P264175

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P264176

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P264216

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

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P264217

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P264369

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P264371

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P264254

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P264255

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P264362

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P264364

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

Reference Method: SM 2120 B
Batch ID: P264172

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B
Batch ID: P264173

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2540 D-97
Batch ID: P264429

Component	Result	Code	Units
TSS	2	U	mg/L

Quality Assurance Report Method Blank Results

Reference Method: SM 2540 D-97
Batch ID: P264430

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P264432

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: P264216

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P264217

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: P264369

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	99.2		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P264371

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P264254

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P264255

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: P264362

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P264362

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P264364

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P264216

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1579863	Ammonia-N	100	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P264217

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1579873	Ammonia-N	103	103	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P264369

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1579846	Kjeldahl Nitrogen	104	104	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P264371

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1579872	Kjeldahl Nitrogen	105	106	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P264254

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1579846	NO2NO3-N	104	104	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P264255

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1579872	NO2NO3-N	101	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P264362

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: P264362

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1579863	Total-P	109	109	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P264364

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1579873	Total-P	107	106	P/P	90 - 110

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P264175

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1579849	Turbidity	1.04	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P264176

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1579858	Turbidity	0.442	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P264216

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1579863	Ammonia-N	0.398	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P264217

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1579873	Ammonia-N	0.121	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P264369

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1579846	Kjeldahl Nitrogen	0.0445	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P264371

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
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Quality Assurance Report Precision

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P264371

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1579872	Kjeldahl Nitrogen	1.43	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P264254

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1579846	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P264255

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1579872	NO2NO3-N	1.19	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P264362

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1579863	Total-P	0.491	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P264364

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1579873	Total-P	1.57	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P264172

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1579849	Color (true)	6.93	Sample	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P264173

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1579858	Color (true)	5.58	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

Quality Assurance Report Calibration Verification

Reference Method: SM 2120 B

Run ID: A55195

Included Lab Sample IDs: 1579849, 1579850, 1579851, 1579852, 1579853, 1579854, 1579855, 1579856, 1579857, 1579858, 1579859, 1579860, 1579861, 1579862

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	102	P/P	85 - 115
Color (true)	102	104	P/P	85 - 115

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A55196

Included Lab Sample IDs: 1579849, 1579850, 1579851, 1579852, 1579853, 1579854, 1579855, 1579856, 1579857, 1579858, 1579859, 1579860, 1579861, 1579862

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	99.5	P/P	95 - 105
Turbidity	99.5	100	P/P	95 - 105

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A55213

Included Lab Sample IDs: 1579863, 1579864, 1579865, 1579866, 1579867, 1579868, 1579869, 1579870, 1579871, 1579872, 1579873, 1579874, 1579875, 1579876

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A55230

Included Lab Sample IDs: 1579863, 1579864, 1579865, 1579866, 1579867, 1579868, 1579869, 1579870, 1579871, 1579872, 1579873, 1579874, 1579875, 1579876

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	101	104	P/P	90 - 110
NO2NO3-N	104	104	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A55273

Included Lab Sample IDs: 1579863, 1579864, 1579865, 1579866, 1579867, 1579868, 1579869, 1579870, 1579871, 1579872, 1579873, 1579874, 1579875, 1579876

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	102	98.2	P/P	90 - 110
Kjeldahl Nitrogen	93.8	99.2	P/P	90 - 110
Kjeldahl Nitrogen	97.0	95.0	P/P	90 - 110
Kjeldahl Nitrogen	98.2	97.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A55275

Included Lab Sample IDs: 1579863, 1579864, 1579865, 1579866, 1579867, 1579868, 1579869, 1579870, 1579871, 1579872, 1579873, 1579874, 1579875, 1579876

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	96.5	99.5	P/P	90 - 110
Total-P	98.8	96.5	P/P	90 - 110
Total-P	99.0	98.8	P/P	90 - 110

Quality Assurance Report Calibration Verification

* 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					1.04	
	Turbidity					0.442	
EPA 350.1 Rev. 2.0	Ammonia-N	99.5	100	101			0.398
	Ammonia-N	100	103	103			0.121
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	99.2	104	104			0.0445
	Kjeldahl Nitrogen	105	105	106			1.43
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	104	104	104			0.0
	NO ₂ NO ₃ -N	106	101	102			1.19
EPA 365.1 Rev. 2.0	Total-P	108	109	109			0.491
	Total-P	107	107	106			1.57
SM 2120 B	Color (true)					6.93	
	Color (true)					5.58	

Reference Method Descriptions

Method / NELAC Cert. #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1579849, 1579850, 1579851, 1579852, 1579853, 1579854, 1579855, 1579856, 1579857, 1579858, 1579859, 1579860, 1579861, 1579862
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1579863, 1579864, 1579865, 1579866, 1579867, 1579868, 1579869, 1579870, 1579871, 1579872, 1579873, 1579874, 1579875, 1579876
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1579863, 1579864, 1579865, 1579866, 1579867, 1579868, 1579869, 1579870, 1579871, 1579872, 1579873, 1579874, 1579875, 1579876
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1579863, 1579864, 1579865, 1579866, 1579867, 1579868, 1579869, 1579870, 1579871, 1579872, 1579873, 1579874, 1579875, 1579876
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1579863, 1579864, 1579865, 1579866, 1579867, 1579868, 1579869, 1579870, 1579871, 1579872, 1579873, 1579874, 1579875, 1579876
SM 2120 B / E31780	True Color measured at 450 nm	1579849, 1579850, 1579851, 1579852, 1579853, 1579854, 1579855, 1579856, 1579857, 1579858, 1579859, 1579860, 1579861, 1579862
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1579849, 1579850, 1579851, 1579852, 1579853, 1579854, 1579855, 1579856, 1579857, 1579858, 1579859, 1579860, 1579861, 1579862

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	02/25/2014			02/25/2014 13:45	Sima Feizi	1579849, 1579850, 1579851, 1579852, 1579853, 1579854, 1579855, 1579856, 1579857, 1579858, 1579859, 1579860, 1579861, 1579862
EPA 350.1 Rev. 2.0	02/25/2014			02/26/2014	Diana M. Turner	1579863, 1579864, 1579865, 1579866, 1579867, 1579868, 1579869, 1579870, 1579871, 1579872, 1579873, 1579874, 1579875, 1579876
EPA 351.2 Rev. 2.0	02/25/2014	02/27/2014	Christopher Armour	03/03/2014	Virginia P. Brown	1579863, 1579864, 1579865, 1579866, 1579867, 1579868, 1579869, 1579870, 1579871, 1579872, 1579873, 1579874, 1579875, 1579876
EPA 353.2 Rev. 2.0	02/25/2014			02/26/2014	Peter D. Kaus	1579863, 1579864, 1579865, 1579866, 1579867, 1579868, 1579869, 1579870, 1579871, 1579872, 1579873, 1579874, 1579875, 1579876
EPA 365.1 Rev. 2.0	02/25/2014	02/27/2014	Christopher Armour	03/03/2014	Pallavi R. Gadwal	1579863, 1579864, 1579865, 1579866, 1579867, 1579868, 1579869, 1579870, 1579871, 1579872, 1579873, 1579874, 1579875, 1579876
SM 2120 B	02/25/2014			02/25/2014 12:57	Rochelle Y Jackson	1579849
	02/25/2014			02/25/2014 12:58	Rochelle Y Jackson	1579850
	02/25/2014			02/25/2014 12:59	Rochelle Y Jackson	1579851
	02/25/2014			02/25/2014 13:00	Rochelle Y Jackson	1579852, 1579853
	02/25/2014			02/25/2014 13:01	Rochelle Y Jackson	1579854
	02/25/2014			02/25/2014 13:02	Rochelle Y Jackson	1579855
	02/25/2014			02/25/2014 13:03	Rochelle Y Jackson	1579856
	02/25/2014			02/25/2014 13:04	Rochelle Y Jackson	1579857
	02/25/2014			02/25/2014 13:09	Rochelle Y Jackson	1579858, 1579859
	02/25/2014			02/25/2014 13:10	Rochelle Y Jackson	1579860
	02/25/2014			02/25/2014 13:11	Rochelle Y Jackson	1579861
	02/25/2014			02/25/2014 13:12	Rochelle Y Jackson	1579862
SM 2540 D-97	02/25/2014			02/28/2014	Yijie Li	1579849, 1579850, 1579851, 1579852, 1579853, 1579854, 1579855, 1579856, 1579857, 1579858, 1579859, 1579860, 1579861, 1579862