

Chemical Analysis Report

NW-DIST-2013-03-05-02

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

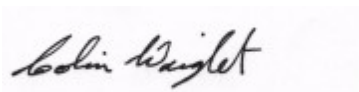
Event Description: **Project Greenshores**
Request ID: **RQ-2013-02-25-11**
Customer: **NW-DIST**
Project ID: **DISCRTNARY**

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: 19-MAR-2013 15:39



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.

Sample Location: HAWKSHAW LAGOON

Collection Date/Time: 03/04/2013 12:58 PM

Field ID: 13

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1487377	EPA 180.1 Rev. 2.0	Turbidity	3.0		NTU	P250022	
	SM 2120 B	Color (true)	12		PCU	P250013	
	SM 2540 D-97	TSS	6	I	mg/L	P250335	
1487391	EPA 350.1 Rev. 2.0	Ammonia-N	0.025		mg N/L	P250048	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.46		mg N/L	P250174	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.086		mg N/L	P250062	
	EPA 365.1 Rev. 2.0	Total-P	0.027		mg P/L	P250114	

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: PEN BAY @ RANGE MARKER

Collection Date/Time: 03/04/2013 10:40 AM

Field ID: 1

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1487365	EPA 180.1 Rev. 2.0	Turbidity	21		NTU	P250021	
	SM 2120 B	Color (true)	57		PCU	P250012	
	SM 2540 D-97	TSS	9	I	mg/L	P250334	
1487379	EPA 350.1 Rev. 2.0	Ammonia-N	0.032		mg N/L	P250047	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.49		mg N/L	P250308	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.032		mg N/L	P250155	
	EPA 365.1 Rev. 2.0	Total-P	0.038		mg P/L	P250111	

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: PEN BAY 1/2 BRIDGE / MUSCOGEE

Collection Date/Time: 03/04/2013 10:55 AM

Field ID: 2

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1487366	EPA 180.1 Rev. 2.0	Turbidity	9.2		NTU	P250021	
	SM 2120 B	Color (true)	39		PCU	P250012	
	SM 2540 D-97	TSS	7	I	mg/L	P250334	
1487380	EPA 350.1 Rev. 2.0	Ammonia-N	0.026		mg N/L	P250046	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.44		mg N/L	P250308	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.039		mg N/L	P250155	
	EPA 365.1 Rev. 2.0	Total-P	0.020		mg P/L	P250111	

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: PEN BAY 1/2 BRIDGE AND PORT

Collection Date/Time: 03/04/2013 12:10 PM

Field ID: 7

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1487371	EPA 180.1 Rev. 2.0	Turbidity	5.5		NTU	P250021	
	SM 2120 B	Color (true)	38		PCU	P250013	
	SM 2540 D-97	TSS	7	I	mg/L	P250335	
1487385	EPA 350.1 Rev. 2.0	Ammonia-N	0.033		mg N/L	P250047	

Field ID: 7

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1487385	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.39	I	mg N/L	P250308	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.053		mg N/L	P250156	
	EPA 365.1 Rev. 2.0	Total-P	0.019		mg P/L	P250111	

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: PEN BAY 1/2 BTW MUSCOGEE AND HAWKSHAW

Collection Date/Time: 03/04/2013 12:05 PM

Field ID: 6

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1487370	EPA 180.1 Rev. 2.0	Turbidity	9.2		NTU	P250021	
	SM 2120 B	Color (true)	42	A	PCU	P250013	
	SM 2540 D-97	TSS	9	I	mg/L	P250335	
1487384	EPA 350.1 Rev. 2.0	Ammonia-N	0.036		mg N/L	P250047	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.44		mg N/L	P250308	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.046		mg N/L	P250155	
	EPA 365.1 Rev. 2.0	Total-P	0.023		mg P/L	P250111	

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: PEN BAY 100FT SO. OF STORM DRAIN

Collection Date/Time: 03/04/2013 11:30 AM

Field ID: 4

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1487368	EPA 180.1 Rev. 2.0	Turbidity	6.0		NTU	P250021	
	SM 2120 B	Color (true)	37		PCU	P250012	
	SM 2540 D-97	TSS	5	I	mg/L	P250334	
1487382	EPA 350.1 Rev. 2.0	Ammonia-N	0.039		mg N/L	P250046	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.39	I	mg N/L	P250308	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.040		mg N/L	P250155	
	EPA 365.1 Rev. 2.0	Total-P	0.018		mg P/L	P250111	

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: PEN BAY BTW BRIDGE AND PORT

Collection Date/Time: 03/04/2013 12:19 PM

Field ID: 12

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1487376	EPA 180.1 Rev. 2.0	Turbidity	5.5		NTU	P250022	
	SM 2120 B	Color (true)	40		PCU	P250013	
	SM 2540 D-97	TSS	6	I	mg/L	P250335	
1487390	EPA 350.1 Rev. 2.0	Ammonia-N	0.034		mg N/L	P250047	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.40	I	mg N/L	P250307	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.040		mg N/L	P250156	
	EPA 365.1 Rev. 2.0	Total-P	0.018		mg P/L	P250113	

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: PEN BAY BTW MARINA AND OUTFALL

Collection Date/Time: 03/04/2013 12:32 PM

Field ID: 10

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1487374	EPA 180.1 Rev. 2.0	Turbidity	5.5		NTU	P250022	
	SM 2120 B	Color (true)	38		PCU	P250013	
	SM 2540 D-97	TSS	6	I	mg/L	P250335	
1487388	EPA 350.1 Rev. 2.0	Ammonia-N	0.030		mg N/L	P250047	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.45		mg N/L	P250307	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.037		mg N/L	P250156	
	EPA 365.1 Rev. 2.0	Total-P	0.019		mg P/L	P250113	

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: PEN BAY EAST OF PRIMARY STORM DRAIN

Collection Date/Time: 03/04/2013 11:20 AM

Field ID: 3

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1487367	EPA 180.1 Rev. 2.0	Turbidity	4.1		NTU	P250021	
	SM 2120 B	Color (true)	36		PCU	P250012	
	SM 2540 D-97	TSS	4	I	mg/L	P250334	
1487381	EPA 350.1 Rev. 2.0	Ammonia-N	0.043		mg N/L	P250046	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.33	I	mg N/L	P250308	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.049		mg N/L	P250155	
	EPA 365.1 Rev. 2.0	Total-P	0.016		mg P/L	P250111	

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: PEN BAY END OF CHASE ST

Collection Date/Time: 03/04/2013 11:50 AM

Field ID: 5

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1487369	EPA 180.1 Rev. 2.0	Turbidity	8.1		NTU	P250021	
	SM 2120 B	Color (true)	40		PCU	P250013	
	SM 2540 D-97	TSS	6	I	mg/L	P250335	
1487383	EPA 350.1 Rev. 2.0	Ammonia-N	0.032		mg N/L	P250046	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.42		mg N/L	P250308	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.047		mg N/L	P250155	
	EPA 365.1 Rev. 2.0	Total-P	0.022		mg P/L	P250111	

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: PEN BAY ENTRANCE OF MARINA

Collection Date/Time: 03/04/2013 12:25 PM

Field ID: 11

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1487375	EPA 180.1 Rev. 2.0	Turbidity	6.2		NTU	P250022	
	SM 2120 B	Color (true)	37		PCU	P250013	
	SM 2540 D-97	TSS	6	I	mg/L	P250335	
1487389	EPA 350.1 Rev. 2.0	Ammonia-N	0.028		mg N/L	P250047	

Field ID: 11

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1487389	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.39	I	mg N/L	P250307	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.037		mg N/L	P250156	
	EPA 365.1 Rev. 2.0	Total-P	0.021		mg P/L	P250113	

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: PEN BAY INSIDE SITE 2

Collection Date/Time: 03/04/2013 01:15 PM

Field ID: 14

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1487378	EPA 180.1 Rev. 2.0	Turbidity	6.6		NTU	P250022	
	SM 2120 B	Color (true)	38		PCU	P250013	
	SM 2540 D-97	TSS	6	I	mg/L	P250335	
1487392	EPA 350.1 Rev. 2.0	Ammonia-N	0.022		mg N/L	P250047	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.41		mg N/L	P250307	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.036		mg N/L	P250156	
	EPA 365.1 Rev. 2.0	Total-P	0.020		mg P/L	P250113	

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: PEN BAY WEST END OF HAWKSHAW

Collection Date/Time: 03/04/2013 12:40 PM

Field ID: 9

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1487373	EPA 180.1 Rev. 2.0	Turbidity	4.5	A	NTU	P250022	
	SM 2120 B	Color (true)	38		PCU	P250013	
	SM 2540 D-97	TSS	4	I	mg/L	P250335	
1487387	EPA 350.1 Rev. 2.0	Ammonia-N	0.032		mg N/L	P250047	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.44		mg N/L	P250307	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.038		mg N/L	P250156	
	EPA 365.1 Rev. 2.0	Total-P	0.019		mg P/L	P250113	

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: PEN BAY WEST OF STORM DRAIN

Collection Date/Time: 03/04/2013 11:45 AM

Field ID: 8

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1487372	EPA 180.1 Rev. 2.0	Turbidity	4.2		NTU	P250021	
	SM 2120 B	Color (true)	37		PCU	P250013	
	SM 2540 D-97	TSS	4	I	mg/L	P250335	
1487386	EPA 350.1 Rev. 2.0	Ammonia-N	0.032		mg N/L	P250047	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.40		mg N/L	P250307	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.056		mg N/L	P250156	
	EPA 365.1 Rev. 2.0	Total-P	0.017		mg P/L	P250113	

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: 4417

Event(s)

NW-DIST-2013-03-05-02

Job(s)

Sample(s)

Test(s)

NCR Type: SHIPPING/RECEIVING

NCR Category: Receiving

Observation: There was no collection date or time on the field sheet for site PEN BAY 1/2 BTW MUSCOGEE AND HAWKSHAW.

Resolution: A message was left for Cheryl Bunch on 03-05-13. She responded and said the collection date/time for this sample is 3/4/13, 11:05am ct. The collection date/time was written in by receiving staff, Shawn Kitchen. LIMS was updated.

Authorised by/Date: Kathryn Brackett 3/11/2013

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: P250021

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P250022

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P250046

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

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P250047

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

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P250048

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

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P250174

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P250307

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P250308

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P250062

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P250155

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P250156

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P250111

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P250113

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P250114

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

Reference Method: SM 2120 B
Batch ID: P250012

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Quality Assurance Report Method Blank Results

Reference Method: SM 2120 B
Batch ID: P250013

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2540 D-97
Batch ID: P250334

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P250335

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: P250046

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	98.1		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P250047

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P250048

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P250174

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	92.7		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P250307

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: P250308

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P250308

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P250062

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: P250155

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P250156

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P250111

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P250113

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P250114

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P250046

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1486891	Ammonia-N	104	100	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P250047

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P250047

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1487379	Ammonia-N	102	99.0	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P250048

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1487426	Ammonia-N	104	106	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P250174

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1487357	Kjeldahl Nitrogen	106	109	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P250307

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1487386	Kjeldahl Nitrogen	105	107	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P250308

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1487257	Kjeldahl Nitrogen	100	96.6	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P250062

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1487426	NO2NO3-N	98.8	98.8	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P250155

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1487254	NO2NO3-N	99.2	98.7	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P250156

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1487385	NO2NO3-N	94.8	94.3	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P250111

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1487255	Total-P	92.9	91.7	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P250113

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1487387	Total-P	108	105	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P250114

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1487426	Total-P	108	104	P/P	90 - 110

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P250021

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1487315	Turbidity	6.45	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P250022

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1487373	Turbidity	0.893	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P250046

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1486891	Ammonia-N	1.91	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P250047

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1487379	Ammonia-N	2.45	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P250048

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1487426	Ammonia-N	1.66	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P250174

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: P250174

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1487357	Kjeldahl Nitrogen	1.78	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P250307

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1487386	Kjeldahl Nitrogen	1.75	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P250308

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1487257	Kjeldahl Nitrogen	2.80	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P250062

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1487426	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P250155

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1487254	NO2NO3-N	0.494	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P250156

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1487385	NO2NO3-N	0.412	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P250111

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1487255	Total-P	1.29	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P250113

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1487387	Total-P	2.36	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P250114

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1487426	Total-P	3.39	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P250012

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1487312	Color (true)	1.05	Sample	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P250013

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1487370	Color (true)	10.9	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: A49323

Included Lab Sample IDs: 1487365, 1487366, 1487367, 1487368, 1487369, 1487370, 1487371, 1487372, 1487373, 1487374, 1487375, 1487376, 1487377, 1487378

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

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A49327

Included Lab Sample IDs: 1487365, 1487366, 1487367, 1487368, 1487369, 1487370, 1487371, 1487372, 1487373, 1487374, 1487375, 1487376, 1487377, 1487378

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: A49339

Included Lab Sample IDs: 1487379, 1487380, 1487381, 1487382, 1487383, 1487384, 1487385, 1487386, 1487387, 1487388, 1487389, 1487390, 1487391, 1487392

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	101	101	P/P	90 - 110
Ammonia-N	101	103	P/P	90 - 110
Ammonia-N	102	93.0	P/P	90 - 110
Ammonia-N	103	104	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A49356

Included Lab Sample IDs: 1487379, 1487380, 1487381, 1487382, 1487383, 1487384, 1487385, 1487386, 1487387, 1487388, 1487389, 1487390, 1487392

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	98.4	99.4	P/P	90 - 110
NO2NO3-N	99.6	98.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A49376

Included Lab Sample IDs: 1487379, 1487380, 1487381, 1487382, 1487383, 1487384, 1487385, 1487386, 1487387, 1487388, 1487389, 1487390, 1487391, 1487392

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.5	99.5	P/P	90 - 110
Total-P	99.5	98.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A49381

Included Lab Sample IDs: 1487391

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A49389

Included Lab Sample IDs: 1487391

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	104	107	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A49450

Included Lab Sample IDs: 1487386, 1487387, 1487388, 1487389, 1487390, 1487392

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	95.0	96.4	P/P	90 - 110
Kjeldahl Nitrogen	97.9	98.9	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A49451

Included Lab Sample IDs: 1487379, 1487380, 1487381, 1487382, 1487383, 1487384, 1487385

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	92.8	97.6	P/P	90 - 110
Kjeldahl Nitrogen	97.6	98.8	P/P	90 - 110

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

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

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision		
					LCS	SMP	MS
EPA 180.1 Rev. 2.0	Turbidity					6.45	
	Turbidity					0.893	
EPA 350.1 Rev. 2.0	Ammonia-N	98.1	104	100			1.91
	Ammonia-N	98.4	102	99.0			2.45
	Ammonia-N	103	104	106			1.66
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	92.7	106	109			1.78
	Kjeldahl Nitrogen	99.2	105	107			1.75
	Kjeldahl Nitrogen	101	100	96.6			2.80
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	104	98.8	98.8			0.0
	NO ₂ NO ₃ -N	101	99.2	98.7			0.494
	NO ₂ NO ₃ -N	103	94.8	94.3			0.412
EPA 365.1 Rev. 2.0	Total-P	106	92.9	91.7			1.29
	Total-P	104	108	105			2.36
	Total-P	103	108	104			3.39
SM 2120 B	Color (true)					1.05	
	Color (true)					10.9	

Reference Method Descriptions

Method / NELAC Cert. #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1487365, 1487366, 1487367, 1487368, 1487369, 1487370, 1487371, 1487372, 1487373, 1487374, 1487375, 1487376, 1487377, 1487378
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1487379, 1487380, 1487381, 1487382, 1487383, 1487384, 1487385, 1487386, 1487387, 1487388, 1487389, 1487390, 1487391, 1487392
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1487379, 1487380, 1487381, 1487382, 1487383, 1487384, 1487385, 1487386, 1487387, 1487388, 1487389, 1487390, 1487391, 1487392
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1487379, 1487380, 1487381, 1487382, 1487383, 1487384, 1487385, 1487386, 1487387, 1487388, 1487389, 1487390, 1487391, 1487392
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1487379, 1487380, 1487381, 1487382, 1487383, 1487384, 1487385, 1487386, 1487387, 1487388, 1487389, 1487390, 1487391, 1487392
SM 2120 B / E31780	True Color measured at 450 nm or Apparent Color	1487365, 1487366, 1487367, 1487368, 1487369, 1487370, 1487371, 1487372, 1487373, 1487374, 1487375, 1487376, 1487377, 1487378
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1487365, 1487366, 1487367, 1487368, 1487369, 1487370, 1487371, 1487372, 1487373, 1487374, 1487375, 1487376, 1487377, 1487378

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	03/05/2013			03/05/2013 16:29	Blanca Fach	1487365, 1487366, 1487367, 1487368, 1487369, 1487370, 1487371, 1487372, 1487373, 1487374, 1487375, 1487376, 1487377, 1487378
EPA 350.1 Rev. 2.0	03/05/2013			03/06/2013	Diana M. Turner	1487379, 1487380, 1487381, 1487382, 1487383, 1487384, 1487385, 1487386, 1487387, 1487388, 1487389, 1487390, 1487391, 1487392
EPA 351.2 Rev. 2.0	03/05/2013	03/07/2013	Christopher Armour	03/08/2013	Bryan A. Werth	1487391
	03/05/2013	03/12/2013	Christopher Armour	03/13/2013	Bryan A. Werth	1487379, 1487380, 1487381, 1487382, 1487383, 1487384, 1487385, 1487386, 1487387, 1487388, 1487389, 1487390, 1487392
EPA 353.2 Rev. 2.0	03/05/2013			03/07/2013	Sima Feizi	1487379, 1487380, 1487381, 1487382, 1487383, 1487384, 1487385, 1487386, 1487387, 1487388, 1487389, 1487390, 1487392
	03/05/2013			03/08/2013	Sima Feizi	1487391
EPA 365.1 Rev. 2.0	03/05/2013	03/07/2013	Christopher Armour	03/08/2013	Pallavi R. Gadwal	1487379, 1487380, 1487381, 1487382, 1487383, 1487384, 1487385, 1487386, 1487387, 1487388, 1487389, 1487390, 1487391, 1487392
SM 2120 B	03/05/2013			03/05/2013 15:48	Pallavi R. Gadwal	1487365
	03/05/2013			03/05/2013 15:49	Pallavi R. Gadwal	1487366
	03/05/2013			03/05/2013 15:50	Pallavi R. Gadwal	1487367
	03/05/2013			03/05/2013 15:51	Pallavi R. Gadwal	1487368
	03/05/2013			03/05/2013 15:55	Pallavi R. Gadwal	1487369
	03/05/2013			03/05/2013 15:56	Pallavi R. Gadwal	1487370
	03/05/2013			03/05/2013 15:57	Pallavi R. Gadwal	1487371
	03/05/2013			03/05/2013 15:58	Pallavi R. Gadwal	1487372
	03/05/2013			03/05/2013 15:59	Pallavi R. Gadwal	1487373
	03/05/2013			03/05/2013 16:00	Pallavi R. Gadwal	1487374
	03/05/2013			03/05/2013 16:01	Pallavi R. Gadwal	1487375
	03/05/2013			03/05/2013 16:02	Pallavi R. Gadwal	1487376
	03/05/2013			03/05/2013 16:03	Pallavi R. Gadwal	1487377
	03/05/2013			03/05/2013 16:04	Pallavi R. Gadwal	1487378
SM 2540 D-97	03/05/2013			03/08/2013	Yijie Li	1487365, 1487366, 1487367, 1487368, 1487369, 1487370, 1487371, 1487372, 1487373, 1487374, 1487375, 1487376, 1487377, 1487378