

Chemical Analysis Report

NW-DIST-2015-03-17-02

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

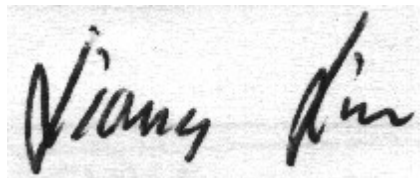
Event Description: **Project Greenshores**
Request ID: **RQ-2015-02-23-12**
Customer: **NW-DIST**
Project ID: **DISTRICT**

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

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Certified by: Liang Lin, Environmental Administrator

Date Certified: 30-MAR-2015 16:33

A handwritten signature in black ink, appearing to read "Liang Lin", is shown on a light-colored background.

Abbreviations and data remark codes

CERT # - NELAP (National Environmental Laboratory Accreditation Program) Certification Number of the laboratory that performed the analysis.

LCS – Laboratory Control Sample; in the QC Failures column, this notation indicates a batch recovery failure.

MS – Matrix Spike; in the QC Failures column, this notation indicates a batch recovery failure.

RPD – Relative Percent Difference; in the QC Failures column, this notation indicates a batch failure for precision.

CCV – Continuing Calibration Verification; in the QC Failures column, this notation indicates a failure of the calibration verification check sample.

SUR – Surrogate; in the QC Failures column, this notation indicates a recovery failure for the associated surrogate.

RSD – Relative Standard Deviation expressed as a percentage.

SMP – Sample.

** - The laboratory is not NELAP certified for this analyte/method, or certification is not applicable.

A - Value reported is the mean of two or more determinations

B - Results based on colony counts outside the acceptable range.

I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.

J - Estimated value and/or the analysis did not meet established quality control criteria

K - Actual value is known to be less than value given

L - Actual value is known to be greater than value given

N - Presumptive evidence of presence of material.

O - Sampled, but analysis lost or not performed.

Q - Sample held beyond normal holding time.

T - Value reported is less than the criterion of detection.

U - Material was analyzed for but not detected. The reported value is the method detection limit for the sample analyzed.

V - Analyte was detected in both sample and method blank.

X - Too few individuals to calculate SCI value.

Y - The laboratory analysis was from an unpreserved or improperly preserved sample. The data may not be accurate

Z - Colonies were too numerous to count (TNTC).

Scientific notation may be used in reporting very large or small values. Values reported using scientific notation will take the form of the following example:

1.3E+03, which is equivalent to 1.3×10^3 or 1300.

Precision is reported as relative percent difference unless otherwise noted.

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

Unless otherwise noted, analytical values for soil and sediment samples are reported on a dry weight basis, and analytical values for waste and tissue samples are reported on a wet weight basis.

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

Quality control information from overflow laboratories may not be included in this report. Please refer to the associated report from the overflow laboratory for additional information.

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

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

Sample Location: RANGE MARKER EAST OF TEXAR

Collection Date/Time: 03/16/2015 10:58

Field ID: 1

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1682803	EPA 180.1 Rev. 2.0	Turbidity	4.3		NTU	P281981	
	SM 2120 B	Color (true)	15	A	PCU	P281977	
	SM 2540 D-97	TSS	4	I	mg/L	P282314	
1682819	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	I	mg N/L	P282043	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.26	I	mg N/L	P282094	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.074		mg N/L	P282012	
	EPA 365.1 Rev. 2.0	Total-P	0.014		mg P/L	P282089	

Sample Location: 1/2 BRIDGE AND MUSCOGEE

Collection Date/Time: 03/16/2015 11:16

Field ID: 2

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1682804	EPA 180.1 Rev. 2.0	Turbidity	3.3	A	NTU	P281982	
	SM 2120 B	Color (true)	14		PCU	P281977	
	SM 2540 D-97	TSS	3	U	mg/L	P282314	
1682820	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P282043	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.31	I	mg N/L	P282094	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.053		mg N/L	P282012	
	EPA 365.1 Rev. 2.0	Total-P	0.014		mg P/L	P282089	

Sample Location: EAST OF PRIMARY STORM DRAIN PGS1

Collection Date/Time: 03/16/2015 11:25

Field ID: 3

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1682805	EPA 180.1 Rev. 2.0	Turbidity	1.7		NTU	P281982	
	SM 2120 B	Color (true)	6.9		PCU	P281977	
	SM 2540 D-97	TSS	3	U	mg/L	P282314	
1682821	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	I	mg N/L	P282043	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.16	I	mg N/L	P282094	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.062		mg N/L	P282012	
	EPA 365.1 Rev. 2.0	Total-P	0.009	I	mg P/L	P282089	

Sample Location: 100 FT S.OF STORM DRAIN

Collection Date/Time: 03/16/2015 11:30

Field ID: 4

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1682806	EPA 180.1 Rev. 2.0	Turbidity	1.6		NTU	P281982	
	SM 2120 B	Color (true)	6.7		PCU	P281977	
	SM 2540 D-97	TSS	3	U	mg/L	P282314	
1682822	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P282043	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.25	I	mg N/L	P282094	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.070		mg N/L	P282012	
	EPA 365.1 Rev. 2.0	Total-P	0.012		mg P/L	P282089	

Sample Location: END OF CHASE STREET

Collection Date/Time: 03/16/2015 11:36

Field ID: 5

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1682807	EPA 180.1 Rev. 2.0	Turbidity	2.0		NTU	P281982	
	SM 2120 B	Color (true)	8.5		PCU	P281977	
	SM 2540 D-97	TSS	3	U	mg/L	P282314	
1682823	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P282043	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.21	I	mg N/L	P282094	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.12		mg N/L	P282012	
	EPA 365.1 Rev. 2.0	Total-P	0.01	I	mg P/L	P282089	

Sample Location: 1/2 MUSCOGEE AND HAWKSHAW 400 FT FROM SHORE

Collection Date/Time: 03/16/2015 11:50

Field ID: 6

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1682808	EPA 180.1 Rev. 2.0	Turbidity	2.7		NTU	P281982	
	SM 2120 B	Color (true)	12		PCU	P281977	
	SM 2540 D-97	TSS	4	I	mg/L	P282314	
1682824	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	I	mg N/L	P282043	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.19	I	mg N/L	P282094	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.071		mg N/L	P282012	
	EPA 365.1 Rev. 2.0	Total-P	0.012		mg P/L	P282089	

Sample Location: 1/2 BETWEEN BRIDGE AND PORT

Collection Date/Time: 03/16/2015 12:00

Field ID: 7

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1682809	EPA 180.1 Rev. 2.0	Turbidity	2.8		NTU	P281982	
	SM 2120 B	Color (true)	13		PCU	P281977	
	SM 2540 D-97	TSS	5	I	mg/L	P282314	
1682825	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P282043	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.26	I	mg N/L	P282094	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.052		mg N/L	P282012	
	EPA 365.1 Rev. 2.0	Total-P	0.011		mg P/L	P282089	

Sample Location: WEST OF STORM DRAIN INSIDE ROCKS

Collection Date/Time: 03/16/2015 11:43

Field ID: 8

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1682810	EPA 180.1 Rev. 2.0	Turbidity	1.4		NTU	P281982	
	SM 2120 B	Color (true)	6.9		PCU	P281977	
	SM 2540 D-97	TSS	3	I	mg/L	P282315	
1682826	EPA 350.1 Rev. 2.0	Ammonia-N	0.019		mg N/L	P282043	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.16	I	mg N/L	P282142	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.10		mg N/L	P282013	
	EPA 365.1 Rev. 2.0	Total-P	0.011		mg P/L	P282089	

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 100 FT S. OF
OUTFALL**

Collection Date/Time: 03/16/2015 12:30

Field ID: 9

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1682811	EPA 180.1 Rev. 2.0	Turbidity	2.9		NTU	P281982	
	SM 2120 B	Color (true)	12		PCU	P281978	
	SM 2540 D-97	TSS	4	I	mg/L	P282315	
1682827	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	I	mg N/L	P282044	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.31	I	mg N/L	P282142	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.053		mg N/L	P282013	
	EPA 365.1 Rev. 2.0	Total-P	0.011		mg P/L	P282089	

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 100 FT S.OF
OUTFALL**

Collection Date/Time: 03/16/2015 12:33

Field ID: 9 DUP

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1682812	EPA 180.1 Rev. 2.0	Turbidity	2.6		NTU	P281982	
	SM 2120 B	Color (true)	12		PCU	P281978	
	SM 2540 D-97	TSS	4	I	mg/L	P282315	
1682828	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P282044	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.22	I	mg N/L	P282142	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.054		mg N/L	P282013	
	EPA 365.1 Rev. 2.0	Total-P	0.013		mg P/L	P282090	

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: 03/16/2015 12:25

Field ID: 10

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1682813	EPA 180.1 Rev. 2.0	Turbidity	2.5		NTU	P281982	
	SM 2120 B	Color (true)	12	A	PCU	P281978	
	SM 2540 D-97	TSS	4	I	mg/L	P282315	
1682829	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P282044	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.24	I	mg N/L	P282142	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.045		mg N/L	P282013	
	EPA 365.1 Rev. 2.0	Total-P	0.011		mg P/L	P282090	

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: 03/16/2015 12:17

Field ID: 11

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1682814	EPA 180.1 Rev. 2.0	Turbidity	2.5	A	NTU	P281983	
	SM 2120 B	Color (true)	11		PCU	P281978	
	SM 2540 D-97	TSS	4	I	mg/L	P282315	

Field ID: 11

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1682830	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	I	mg N/L	P282044	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.25	I	mg N/L	P282142	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.044		mg N/L	P282013	
	EPA 365.1 Rev. 2.0	Total-P	0.010		mg P/L	P282090	

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 FT FROM SHORE

Collection Date/Time: 03/16/2015 12:07

Field ID: 12

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1682815	EPA 180.1 Rev. 2.0	Turbidity	2.7		NTU	P281983	
	SM 2120 B	Color (true)	12		PCU	P281978	
	SM 2540 D-97	TSS	5	I	mg/L	P282315	
1682831	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P282044	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.26	I	mg N/L	P282142	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.046		mg N/L	P282013	
	EPA 365.1 Rev. 2.0	Total-P	0.010		mg P/L	P282090	

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 BRIDGE BRIDGE AND PORT 400 FT FROM SHORE

Collection Date/Time: 03/16/2015 12:10

Field ID: FB

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1682816	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P281983	
	SM 2120 B	Color (true)	2.5	U	PCU	P281978	
	SM 2540 D-97	TSS	2	U	mg/L	P282245	
1682832	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P282046	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P282093	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P282048	
	EPA 365.1 Rev. 2.0	Total-P	0.003	I	mg P/L	P282088	

Ref. Method and Comment:

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

EPA 365.1 Rev. 2.0: Total-P: The result was confirmed on 03/24/2015.

Sample Location: INSIDE HAWKSHAW LAGOON

Collection Date/Time: 03/16/2015 12:45

Field ID: 13

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1682817	EPA 180.1 Rev. 2.0	Turbidity	1.1		NTU	P281983	
	SM 2120 B	Color (true)	11		PCU	P281978	
	SM 2540 D-97	TSS	3	U	mg/L	P282315	
1682833	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P282044	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.34	I	mg N/L	P282142	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.01	I	mg N/L	P282013	

Field ID: 13

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1682833	EPA 365.1 Rev. 2.0	Total-P	0.013		mg P/L	P282090	

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 STORM DRAIN INSIDE PGS II

Collection Date/Time: 03/16/2015 12:55

Field ID: 14

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1682818	EPA 180.1 Rev. 2.0	Turbidity	2.6		NTU	P281983	
	SM 2120 B	Color (true)	12		PCU	P281978	
	SM 2540 D-97	TSS	4	I	mg/L	P282315	
1682834	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P282044	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.24	I	mg N/L	P282142	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.065		mg N/L	P282013	
	EPA 365.1 Rev. 2.0	Total-P	0.010		mg P/L	P282090	

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: P281981

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P281982

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P281983

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P282043

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

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P282044

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P282046

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P282093

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P282094

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P282142

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P282012

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P282013

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P282048

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P282088

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P282089

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P282090

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

Reference Method: SM 2120 B
Batch ID: P281977

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B
Batch ID: P281978

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2540 D-97
Batch ID: P282245

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P282314

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P282315

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: P282043

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	97.1		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P282044

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	97.9		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P282046

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: P282046

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	96.3		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P282093

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P282094

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	93.7		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P282142

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P282012

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	100		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P282013

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: P282048

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P282088

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P282089

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P282090

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P282043

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1682819	Ammonia-N	99.6	100	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P282044

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1682830	Ammonia-N	101	103	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P282046

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1682737	Ammonia-N	98.8	97.9	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P282093

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1682737	Kjeldahl Nitrogen	93.9	86.9	P/F	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P282094

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1682735	Kjeldahl Nitrogen	94.6	96.3	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P282142

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1682826	Kjeldahl Nitrogen	99.5	92.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P282012

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1682336	NO2NO3-N	96.6	99.1	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P282013

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

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P282013

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1682826	NO2NO3-N	100	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P282048

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1682710	NO2NO3-N	102	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P282088

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1682867	Total-P	102	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P282089

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1682819	Total-P	101	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P282090

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1682828	Total-P	102	102	P/P	90 - 110

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P281981

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1682694	Turbidity	1.85	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P281982

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1682804	Turbidity	1.54	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P281983

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1682814	Turbidity	0.803	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P282043

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1682819	Ammonia-N	0.420	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P282044

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1682830	Ammonia-N	2.23	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P282046

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1682737	Ammonia-N	0.562	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P282093

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1682737	Kjeldahl Nitrogen	3.97	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P282094

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1682735	Kjeldahl Nitrogen	1.41	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P282142

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1682826	Kjeldahl Nitrogen	7.35	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P282012

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1682336	NO2NO3-N	2.43	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P282013

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1682826	NO2NO3-N	0.658	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P282048

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1682710	NO2NO3-N	1.56	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P282088

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1682867	Total-P	0.0386	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P282089

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1682819	Total-P	2.85	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P282090

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1682828	Total-P	0.0970	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P281977

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1682803	Color (true)	0.231	Sample	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P281978

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1682813	Color (true)	5.36	Sample	P	0 - 20

Reference Method: SM 2540 D-97
Batch ID: P282314

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1682733	TSS	6.90	Sample	P	0 - 10

* 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: A61641

Included Lab Sample IDs: 1682803, 1682804, 1682805, 1682806, 1682807, 1682808, 1682809, 1682810, 1682811, 1682812, 1682813, 1682814, 1682815, 1682816, 1682817, 1682818

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	103	103	P/P	85 - 115
Color (true)	103	103	P/P	85 - 115

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A61643

Included Lab Sample IDs: 1682803, 1682804, 1682805, 1682806, 1682807, 1682808, 1682809, 1682810, 1682811, 1682812, 1682813, 1682814, 1682815, 1682816, 1682817, 1682818

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A61651

Included Lab Sample IDs: 1682819, 1682820, 1682821, 1682822, 1682823, 1682824, 1682825, 1682826, 1682827, 1682828, 1682829, 1682830, 1682831, 1682833, 1682834

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	100	99.5	P/P	90 - 110
NO2NO3-N	99.5	100	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A61661

Included Lab Sample IDs: 1682819, 1682820, 1682821, 1682822, 1682823, 1682824, 1682825, 1682826, 1682827, 1682828, 1682829, 1682830, 1682831, 1682832, 1682833, 1682834

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	100	100	P/P	90 - 110
Ammonia-N	100	101	P/P	90 - 110
Ammonia-N	100	98.9	P/P	90 - 110
Ammonia-N	98.9	103	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A61662

Included Lab Sample IDs: 1682832

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	99.5	99.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A61692

Included Lab Sample IDs: 1682819, 1682820, 1682821, 1682822, 1682823, 1682824, 1682825, 1682826, 1682827, 1682828, 1682829, 1682830, 1682831, 1682832, 1682833, 1682834

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	96.5	96.2	P/P	90 - 110
Total-P	97.5	96.5	P/P	90 - 110
Total-P	99.0	97.5	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A61708

Included Lab Sample IDs: 1682819, 1682820, 1682821, 1682822, 1682823, 1682824, 1682825, 1682832

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	91.0	93.2	P/P	90 - 110
Kjeldahl Nitrogen	92.0	95.6	P/P	90 - 110
Kjeldahl Nitrogen	93.2	92.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A61718

Included Lab Sample IDs: 1682826, 1682827, 1682828, 1682829, 1682830, 1682831, 1682833, 1682834

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	97.2	P/P	90 - 110
Kjeldahl Nitrogen	97.1	95.6	P/P	90 - 110
Kjeldahl Nitrogen	97.2	97.1	P/P	90 - 110

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

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

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery	LCS	Precision SMP	MS
EPA 180.1 Rev. 2.0	Turbidity				1.85	
	Turbidity				1.54	
	Turbidity				0.803	
EPA 350.1 Rev. 2.0	Ammonia-N	97.1	99.6 100			0.420
	Ammonia-N	97.9	101 103			2.23
	Ammonia-N	96.3	98.8 97.9			0.562
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	93.9	93.9 86.9			3.97
	Kjeldahl Nitrogen	93.7	94.6 96.3			1.41
	Kjeldahl Nitrogen	98.3	99.5 92.0			7.35
EPA 353.2 Rev. 2.0	NO2NO3-N	100	96.6 99.1			2.43
	NO2NO3-N	101	100 102			0.658
	NO2NO3-N	105	102 104			1.56
EPA 365.1 Rev. 2.0	Total-P	100	102 101			0.0386
	Total-P	108	101 104			2.85
	Total-P	105	102 102			0.0970
SM 2120 B	Color (true)				0.231	
	Color (true)				5.36	
SM 2540 D-97	TSS				6.90	

Reference Method Descriptions

Method / NELAC Cert. #	Description
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices

Associated Samples

1682803, 1682804, 1682805, 1682806, 1682807, 1682808, 1682809, 1682810, 1682811, 1682812, 1682813, 1682814, 1682815, 1682816, 1682817, 1682818

Reference Method Descriptions

Method / NELAC Cert. #	Description	Associated Samples
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1682819, 1682820, 1682821, 1682822, 1682823, 1682824, 1682825, 1682826, 1682827, 1682828, 1682829, 1682830, 1682831, 1682832, 1682833, 1682834
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1682819, 1682820, 1682821, 1682822, 1682823, 1682824, 1682825, 1682826, 1682827, 1682828, 1682829, 1682830, 1682831, 1682832, 1682833, 1682834
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1682819, 1682820, 1682821, 1682822, 1682823, 1682824, 1682825, 1682826, 1682827, 1682828, 1682829, 1682830, 1682831, 1682832, 1682833, 1682834
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1682819, 1682820, 1682821, 1682822, 1682823, 1682824, 1682825, 1682826, 1682827, 1682828, 1682829, 1682830, 1682831, 1682832, 1682833, 1682834
SM 2120 B / E31780	True Color measured at 450 nm	1682803, 1682804, 1682805, 1682806, 1682807, 1682808, 1682809, 1682810, 1682811, 1682812, 1682813, 1682814, 1682815, 1682816, 1682817, 1682818
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1682803, 1682804, 1682805, 1682806, 1682807, 1682808, 1682809, 1682810, 1682811, 1682812, 1682813, 1682814, 1682815, 1682816, 1682817, 1682818

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	03/17/2015			03/17/2015 15:04	Sima Feizi	1682803, 1682804, 1682805, 1682806, 1682807, 1682808, 1682809, 1682810, 1682811, 1682812, 1682813, 1682814, 1682815, 1682816, 1682817, 1682818
EPA 350.1 Rev. 2.0	03/17/2015			03/18/2015	Diana M. Turner	1682819, 1682820, 1682821, 1682822, 1682823, 1682824, 1682825, 1682826, 1682827, 1682828, 1682829, 1682830, 1682831, 1682832, 1682833, 1682834
EPA 351.2 Rev. 2.0	03/17/2015	03/19/2015	Christopher Armour	03/20/2015	Virginia P. Brown	1682819, 1682820, 1682821, 1682822, 1682823, 1682824, 1682825, 1682832
	03/17/2015	03/20/2015	Christopher Armour	03/22/2015	Virginia P. Brown	1682826, 1682827, 1682828, 1682829, 1682830, 1682831, 1682833, 1682834
EPA 353.2 Rev. 2.0	03/17/2015			03/18/2015	Peter D. Kaus	1682819, 1682820, 1682821, 1682822, 1682823, 1682824, 1682825, 1682826, 1682827, 1682828, 1682829, 1682830, 1682831, 1682832, 1682833, 1682834
EPA 365.1 Rev. 2.0	03/17/2015	03/19/2015	Christopher Armour	03/20/2015	Lipi Saha	1682819, 1682820, 1682821, 1682822, 1682823, 1682824, 1682825, 1682826, 1682827, 1682828, 1682829, 1682830, 1682831, 1682832, 1682833, 1682834
SM 2120 B	03/17/2015			03/17/2015 14:50	Rochelle Y Jackson	1682803, 1682804
	03/17/2015			03/17/2015 14:51	Rochelle Y Jackson	1682805
	03/17/2015			03/17/2015 14:52	Rochelle Y Jackson	1682806
	03/17/2015			03/17/2015 14:53	Rochelle Y Jackson	1682807, 1682808
	03/17/2015			03/17/2015 14:54	Rochelle Y Jackson	1682809
	03/17/2015			03/17/2015 14:55	Rochelle Y Jackson	1682810
	03/17/2015			03/17/2015 14:58	Rochelle Y Jackson	1682811
	03/17/2015			03/17/2015 14:59	Rochelle Y Jackson	1682812
	03/17/2015			03/17/2015 15:00	Rochelle Y Jackson	1682813
	03/17/2015			03/17/2015 15:01	Rochelle Y Jackson	1682814
	03/17/2015			03/17/2015 15:02	Rochelle Y Jackson	1682815
	03/17/2015			03/17/2015 15:03	Rochelle Y Jackson	1682816, 1682817
	03/17/2015			03/17/2015 15:04	Rochelle Y Jackson	1682818
SM 2540 D-97	03/17/2015			03/19/2015	Yijie Li	1682803, 1682804, 1682805, 1682806, 1682807, 1682808, 1682809, 1682810, 1682811, 1682812, 1682813, 1682814, 1682815, 1682816, 1682817, 1682818