

Chemical Analysis Report

WTRSHD-MGT-2012-09-04-01

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

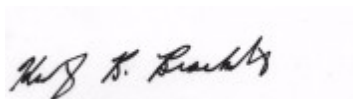
Event Description: **SPRG1207**
Request ID: **RQ-2012-09-03-38**
Customer: **WTRSHD-MGT**
Project ID: **SPG_QTR_WQ**

Send Reports to:
FDEP Ground Water Management Section
2600 Blair Stone Road
Tallahassee, FL 32399-2400
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Certified by: Kathryn Brackett, Environmental Administrator

Date Certified: 18-SEP-2012 08:59



Abbreviations and data remark codes

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

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

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

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

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

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.

Job: TLH-2012-09-04-11

Group: Nutrients

Job: TLH-2012-09-04-12

Group: Metals

Job: TLH-2012-09-04-13

Group: Pesticides

Sample Location: 020383**Collection Date/Time: 09/04/2012 10:14 AM****Field ID: WAKULLA TUBING B-TUNNEL****Matrix: W-OTHER**

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1450848	EPA 180.1 Rev. 2.0	Turbidity	0.25		NTU	P243838	
	EPA 300.0 Rev. 2.1	Chloride	9.2		mg Cl/L	P243956	
		Sulfate	10		mg SO4/L	P243958	
	SM 2120 B	Color (true)	2.5	U	PCU	P243841	
	SM 2320 B-97	Alkalinity	154		mg CaCO3/L	P243848	
	SM 2540 C-97	TDS	190		mg/L	P243976	
1450851	EPA 350.1 Rev. 2.0	Ammonia-N	0.010	U	mg N/L	P243874	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P243942	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.77		mg N/L	P243889	
	EPA 365.1 Rev. 2.0	Total-P	0.030		mg P/L	P243939	
	SM 5310 B-00	Organic Carbon	1.0	U	mg C/L	P244035	
1450854	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.029		mg P/L	P243836	
1450857	EPA 200.7 Rev. 4.4	Calcium	52.3	A	mg/L	P243918	
		Magnesium	10.7	A	mg/L	P243918	
		Potassium	0.68	I	mg/L	P243918	
		Sodium	5.9	A	mg/L	P243918	
	EPA 200.8 Rev. 5.4	Boron**	20.0	A	ug/L	P243951	
1450860	DEP SOP: LC-001-2 (based on EPA 8321B)	Sucralose**	0.042	I	ug/L	P243863	MS

Ref. Method and Comment:

EPA 365.1 Rev. 2.0: Total-P: Matrix spike recovery data is unavailable due to high analyte concentration in the QC sample.

DEP SOP: LC-001-2 (based on EPA 8321B): Sucralose result confirmed in re-extraction.

Sample Location: 020385**Collection Date/Time: 09/04/2012 10:03 AM****Field ID: WAKULLA TUBING C-TUNNEL****Matrix: W-OTHER**

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1450849	EPA 180.1 Rev. 2.0	Turbidity	0.30		NTU	P243838	
	EPA 300.0 Rev. 2.1	Chloride	9.1		mg Cl/L	P243956	
		Sulfate	11		mg SO4/L	P243958	
	SM 2120 B	Color (true)	2.5	U	PCU	P243841	
	SM 2320 B-97	Alkalinity	152		mg CaCO3/L	P243848	
	SM 2540 C-97	TDS	199		mg/L	P243976	
1450852	EPA 350.1 Rev. 2.0	Ammonia-N	0.010	U	mg N/L	P243874	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.095	I	mg N/L	P243942	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.71		mg N/L	P243889	
	EPA 365.1 Rev. 2.0	Total-P	0.031		mg P/L	P243939	
	SM 5310 B-00	Organic Carbon	1.0	U	mg C/L	P244035	
1450855	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.032		mg P/L	P243836	
1450858	EPA 200.7 Rev. 4.4	Calcium	51.5		mg/L	P243918	
		Magnesium	10.7		mg/L	P243918	
		Potassium	0.61	I	mg/L	P243918	
		Sodium	5.7		mg/L	P243918	
	EPA 200.8 Rev. 5.4	Boron**	19.1		ug/L	P243951	

Field ID: WAKULLA TUBING C-TUNNEL

Matrix: W-OTHER

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1450861	DEP SOP: LC-001-2 (based on EPA 8321B)	Sucralose**	0.032	I	ug/L	P243863	MS

Ref. Method and Comment:

EPA 365.1 Rev. 2.0: Total-P: Matrix spike recovery data is unavailable due to high analyte concentration in the QC sample.

DEP SOP: LC-001-2 (based on EPA 8321B): Sucralose result confirmed in re-extraction.

Sample Location: 9695**Collection Date/Time: 09/04/2012 11:04 AM****Field ID: WAKULLA SPRINGS**

Matrix: W-OTHER

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1450847	EPA 180.1 Rev. 2.0	Turbidity	0.55		NTU	P243838	
	EPA 300.0 Rev. 2.1	Chloride	8.1		mg Cl/L	P243956	
		Sulfate	9.5		mg SO4/L	P243958	
	SM 2120 B	Color (true)	42		PCU	P243841	
	SM 2320 B-97	Alkalinity	138		mg CaCO3/L	P243848	
	SM 2540 C-97	TDS	185		mg/L	P243976	
1450850	EPA 350.1 Rev. 2.0	Ammonia-N	0.010	U	mg N/L	P243874	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.18	I	mg N/L	P243942	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.47		mg N/L	P243889	
	EPA 365.1 Rev. 2.0	Total-P	0.040		mg P/L	P243939	
	SM 5310 B-00	Organic Carbon	4.3	I	mg C/L	P244035	
1450853	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.028		mg P/L	P243836	
1450856	EPA 200.7 Rev. 4.4	Calcium	47.3		mg/L	P243918	
		Magnesium	9.26		mg/L	P243918	
		Potassium	0.57	I	mg/L	P243918	
		Sodium	5.1		mg/L	P243918	
	EPA 200.8 Rev. 5.4	Boron**	16.4		ug/L	P243951	
1450859	DEP SOP: LC-001-2 (based on EPA 8321B)	Sucralose**	0.010	U	ug/L	P243863	MS

Ref. Method and Comment:

EPA 365.1 Rev. 2.0: Total-P: Matrix spike recovery data is unavailable due to high analyte concentration in the QC sample.

Quality Assurance Report

Method Blank Results

Reference Method: DEP SOP: LC-001-2 (based on EPA 8321B)

Batch ID: P243863

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P243838

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P243918

Component	Result	Code	Units
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Quality Assurance Report

Method Blank Results

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P243918

Component	Result	Code	Units
Calcium	0.075	U	mg/L
Magnesium	0.040	U	mg/L
Potassium	0.30	U	mg/L
Sodium	0.50	U	mg/L

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P243951

Component	Result	Code	Units
Boron	2.0	U	ug/L

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P243956

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P243958

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P243874

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

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P243942

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

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P243889

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

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P243939

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P243836

Component	Result	Code	Units
O-Phosphate-P	0.004	U	mg P/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 2120 B

Batch ID: P243841

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97

Batch ID: P243848

Component	Result	Code	Units
Alkalinity	0.65	U	mg CaCO ₃ /L

Reference Method: SM 2540 C-97

Batch ID: P243976

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 5310 B-00

Batch ID: P244035

Component	Result	Code	Units
Organic Carbon	1.0	U	mg C/L

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: DEP SOP: LC-001-2 (based on EPA 8321B)

Batch ID: P243863

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	58.8	60.0	P/P	40 - 130

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P243918

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	104		P	85 - 115
Magnesium	99.4		P	85 - 115
Potassium	100		P	85 - 115
Sodium	101		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P243951

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Boron	96.6		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P243956

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P243958

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	96.7		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P243874

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: P243942

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

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P243889

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	98.5		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P243939

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P243836

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

Reference Method: SM 2320 B-97

Batch ID: P243848

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Alkalinity	97.7		P	85 - 115

Reference Method: SM 5310 B-00

Batch ID: P244035

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	105		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: DEP SOP: LC-001-2 (based on EPA 8321B)

Batch ID: P243863

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

Reference Method: DEP SOP: LC-001-2 (based on EPA 8321B)

Batch ID: P243863

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1450518	Sucralose	47.2	38.2	P/F	40 - 130

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P243918

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1450857	Calcium	104		P	80 - 120
1450857	Magnesium	100		P	80 - 120
1450857	Potassium	104	101	P/P	80 - 120
1450857	Sodium	102		P	80 - 120
1450909	Calcium	107		P	80 - 120
1450909	Magnesium	102		P	80 - 120
1450909	Potassium	103		P	80 - 120
1450909	Sodium	105		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P243951

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1450857	Boron	98.2	101	P/P	80 - 120
1450909	Boron	102		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P243956

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1450546	Chloride	97.5	97.7	P/P	90 - 110
1450899	Chloride	98.5		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P243958

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1450546	Sulfate	96.2	96.4	P/P	90 - 110
1450899	Sulfate	96.5		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P243874

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1450868	Ammonia-N	107	93.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P243942

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1450900	Kjeldahl Nitrogen	103	107	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P243889

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: P243889

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1450868	NO2NO3-N	102	106	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P243836

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1450988	O-Phosphate-P	105	102	P/P	90 - 110

Reference Method: SM 5310 B-00

Batch ID: P244035

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1450851	Organic Carbon	110	108	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: LC-001-2 (based on EPA 8321B)

Batch ID: P243863

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1450518	Sucralose	21.0	Spike	P	0 - 30
LFB	Sucralose	2.02	LCS	P	0 - 30

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P243838

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1450867	Turbidity	1.90	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P243918

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1450857	Calcium	1.01	Sample	P	0 - 20
1450857	Magnesium	2.06	Sample	P	0 - 20
1450857	Potassium	2.63	Spike	P	0 - 20
1450857	Sodium	1.46	Sample	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P243951

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1450857	Boron	0.678	Sample	P	0 - 20

Quality Assurance Report

Precision

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P243956

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1450546	Chloride	0.0937	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P243958

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1450546	Sulfate	0.138	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P243874

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1450868	Ammonia-N	13.6	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P243942

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1450900	Kjeldahl Nitrogen	1.82	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P243889

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1450868	NO2NO3-N	2.88	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P243939

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1450900	Total-P	0.285	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P243836

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1450988	O-Phosphate-P	2.66	Spike	P	0 - 20

Reference Method: SM 2120 B

Batch ID: P243841

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1450896	Color (true)	1.35	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2320 B-97

Batch ID: P243848

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1450352	Alkalinity	6.57	Sample	P	0 - 20
1450867	Alkalinity	1.19	Sample	P	0 - 20

Reference Method: SM 2540 C-97

Batch ID: P243976

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1451054	TDS	0.722	Sample	P	0 - 10

Reference Method: SM 5310 B-00

Batch ID: P244035

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1450851	Organic Carbon	1.75	Spike	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 Surrogates

Lab Sample ID: 1450859

Field Sample ID: WAKULLA SPRINGS

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
DEP SOP: LC-001-2 (based on EPA 8321B)	Sucralose-d6	51.8	P	40 - 150

Lab Sample ID: 1450860

Field Sample ID: WAKULLA TUBING B-TUNNEL

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
DEP SOP: LC-001-2 (based on EPA 8321B)	Sucralose-d6	57.3	P	40 - 150

Lab Sample ID: 1450861

Field Sample ID: WAKULLA TUBING C-TUNNEL

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
DEP SOP: LC-001-2 (based on EPA 8321B)	Sucralose-d6	64.9	P	40 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A46826

Included Lab Sample IDs: 1450853, 1450854, 1450855

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.3	98.4	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A46826

Included Lab Sample IDs: 1450853, 1450854, 1450855

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.7	98.3	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A46827

Included Lab Sample IDs: 1450847, 1450848, 1450849

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

Reference Method: SM 2120 B

Run ID: A46828

Included Lab Sample IDs: 1450847, 1450848, 1450849

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

Reference Method: SM 2320 B-97

Run ID: A46830

Included Lab Sample IDs: 1450847, 1450848, 1450849

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Alkalinity	94.9	99.0	P/P	85 - 115
Alkalinity	99.0	95.8	P/P	85 - 115

Reference Method: DEP SOP: LC-001-2 (based on EPA 8321B)

Run ID: A46835

Included Lab Sample IDs: 1450859, 1450860, 1450861

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	86.4	114	P/P	70 - 140
Sucralose	96.8	124	P/P	70 - 140

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A46843

Included Lab Sample IDs: 1450850, 1450851, 1450852

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.3	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A46847

Included Lab Sample IDs: 1450850, 1450851, 1450852

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

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A46857

Included Lab Sample IDs: 1450856, 1450857, 1450858

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
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Quality Assurance Report Calibration Verification

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A46857

Included Lab Sample IDs: 1450856, 1450857, 1450858

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	103	101	P/P	90 - 110
Calcium	104	103	P/P	90 - 110
Magnesium	100	100	P/P	90 - 110
Magnesium	99.8	100	P/P	90 - 110
Potassium	100	99.5	P/P	90 - 110
Potassium	99.5	99.5	P/P	90 - 110
Sodium	100	98.5	P/P	90 - 110
Sodium	101	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A46866

Included Lab Sample IDs: 1450850, 1450851, 1450852

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	100	97.9	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A46867

Included Lab Sample IDs: 1450850, 1450851, 1450852

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

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A46870

Included Lab Sample IDs: 1450856, 1450857, 1450858

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Boron	97.3	98.7	P/P	90 - 110
Boron	98.7	100	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A46873

Included Lab Sample IDs: 1450847, 1450848, 1450849

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	98.8	99.9	P/P	90 - 110
Sulfate	97.9	96.4	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A46903

Included Lab Sample IDs: 1450850, 1450851, 1450852

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	101	108	P/P	85 - 115

* 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
DEP SOP: LC-001-2 (based on EPA 8321B)	Sucralose	58.8	60.0	47.2	38.2	2.02		21.0
EPA 180.1 Rev. 2.0	Turbidity						1.90	
EPA 200.7 Rev. 4.4	Calcium	104		104	107		1.01	
	Magnesium	99.4		100	102		2.06	
	Potassium	100		104	101	103		2.63
	Sodium	101		102	105		1.46	
EPA 200.8 Rev. 5.4	Boron	96.6		98.2	101	102	0.678	
EPA 300.0 Rev. 2.1	Chloride	99.5		97.5	97.7	98.5		0.0937
	Sulfate	96.7		96.2	96.4	96.5		0.138
EPA 350.1 Rev. 2.0	Ammonia-N	100		107	93.4			13.6
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	109		103	107			1.82
EPA 353.2 Rev. 2.0	NO2NO3-N	98.5		102	106			2.88
EPA 365.1 Rev. 2.0	Total-P	103						0.285
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	101		105	102			2.66
SM 2120 B	Color (true)						1.35	
SM 2320 B-97	Alkalinity	97.7					1.19	6.57
SM 2540 C-97	TDS						0.722	
SM 5310 B-00	Organic Carbon	105		110	108			1.75

Reference Method Descriptions

Method / NELAC Cert. #	Description	Associated Samples
DEP SOP: LC-001-2 (based on EPA 8321B) / E31780	Analysis of sucralose in water matrices by HPLC/MS/MS	1450859, 1450860, 1450861
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1450847, 1450848, 1450849
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	1450856, 1450857, 1450858
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	1450856, 1450857, 1450858
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1450847, 1450848, 1450849
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1450847, 1450848, 1450849
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1450850, 1450851, 1450852
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1450850, 1450851, 1450852
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1450850, 1450851, 1450852
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1450850, 1450851, 1450852
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1450853, 1450854, 1450855
SM 2120 B / E31780	True Color measured at 450 nm or Apparent Color	1450847, 1450848, 1450849
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	1450847, 1450848, 1450849
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1450847, 1450848, 1450849
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1450850, 1450851, 1450852

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
DEP SOP: LC-001-2 (based on EPA 8321B)	09/04/2012	09/04/2012	Hoor Shaik	09/05/2012	S. M. Reddy	1450859, 1450860, 1450861
EPA 180.1 Rev. 2.0	09/04/2012			09/05/2012 16:35	Bryan A. Werth	1450847, 1450848, 1450849
EPA 200.7 Rev. 4.4	09/04/2012	09/05/2012	Elliott D. Healy	09/07/2012	Joshua Ayres	1450856, 1450857, 1450858
EPA 200.8 Rev. 5.4	09/04/2012	09/05/2012	Elliott D. Healy	09/07/2012	Charles J. Peterson	1450856, 1450857, 1450858
EPA 300.0 Rev. 2.1	09/04/2012			09/06/2012	Gary Dearman	1450847, 1450848, 1450849
EPA 350.1 Rev. 2.0	09/04/2012			09/06/2012	Peter D. Kaus	1450850, 1450851, 1450852
EPA 351.2 Rev. 2.0	09/04/2012	09/06/2012	Bryan A. Werth	09/07/2012	Christopher Armour	1450850, 1450851, 1450852
EPA 353.2 Rev. 2.0	09/04/2012			09/06/2012	Sima Feizi	1450850, 1450851, 1450852
EPA 365.1 Rev. 2.0	09/04/2012	09/06/2012	Megan E. Faircloth	09/07/2012	Pallavi R. Gadwal	1450850, 1450851, 1450852
EPA 365.1 Rev. 2.0 dissolved	09/04/2012			09/05/2012 15:36	Megan E. Faircloth	1450853
	09/04/2012			09/05/2012 15:41	Megan E. Faircloth	1450854, 1450855
SM 2120 B	09/04/2012			09/05/2012 14:26	Rochelle Y Jackson	1450847
	09/04/2012			09/05/2012 14:27	Rochelle Y Jackson	1450848, 1450849
SM 2320 B-97	09/04/2012			09/05/2012	Dale L. Simmons	1450847, 1450848, 1450849
SM 2540 C-97	09/04/2012			09/06/2012	Yijie Li	1450847, 1450848, 1450849
SM 5310 B-00	09/04/2012			09/11/2012	Dale L. Simmons	1450850, 1450851, 1450852