

Chemical Analysis Report

SW-DIST-2018-06-13-01

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

Event Description: **Pinellas WBIDS By June**
Request ID: **RQ-2018-06-11-09**
Customer: **SW-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
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13051 N. Telecom Parkway
Temple Terrace, FL 33637-0926
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Certified by: Liang Lin, Environmental Administrator

Date Certified: 10-JUL-2018 15:26

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

Case Narrative

Unless otherwise noted, all samples included in this report were received in accordance with protocols referenced in Chapter 62-160, Florida Administrative Code (F.A.C.). Results published in this report pertain only to the samples as submitted to, and received by the laboratory. All times in this report are adjusted to the applicable Eastern Time Zone (EST or EDT).

Results for the following analytical groups are included in this report: Nutrients and Pesticides.

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.

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.

Results for TNI accredited tests met requirements established by The NELAC Institute. A double asterisk (**) is used to indicate an analyte/matrix/method for which the laboratory is not TNI accredited or where accreditation for that field of testing is not applicable.

Any significant anomalies or deviations from established protocols are documented in Non-Conformance Reports, which, where appropriate, are included within this analytical report. Additional comments related to specific analytical tests may be included as remarks following the analytical results for each sample. Such comments and remarks are for informational purposes only and are not intended to convey judgement about the usability of the reported data.

A quality control report on the performance of the test method for the submitted samples is included. Uncertainty associated with the analytical results contained in this report can be estimated from the reported quality assurance results and from published quality control acceptance limits for each analytical test. Matrix quality control results (matrix spike recoveries and matrix sample precision) pertain only to the matrix sample tested and do not necessarily reflect test method performance for other samples.

Typical matrix quality control (QC) measurements may include matrix spike recovery, matrix spike duplicate recovery, matrix spike precision and matrix sample precision. Not all matrix QC results may be available or reportable; where they are not an explanation is provided. Typical reasons for unavailable QC results include, but are not limited to, a) insufficient matrix sample to perform some or all QC measurements; b) analyte concentration in the sample replicated was too low for a meaningful measurement of precision and c) analyte concentration in the matrix sample spiked was too high (relative to the amount of analyte spiked) for a meaningful measurement of recovery. Where matrix QC results are unavailable, other method performance metrics (e.g., LCS recovery, LCS precision, surrogate recovery) may be used to assess performance of the method. Comments explaining any missing QC measurements are not intended to convey any adverse conclusions about the quality of the reported data.

Precision is reported as relative percent difference unless otherwise noted.

Quality Control codes as defined below may be used in this report to indicate results that are associated with one or more quality control elements which did not fall within established test method criteria. Such results may be qualified as estimates using a J qualifier as required by 62-160 F.A.C. Explanations are included in the report for any results that were reported as estimates for other reasons.

QC Codes used in this report may include:

- LCS – Recovery for the batch Laboratory Control Sample (LCS) was outside existing control limits;
- MS – Recovery for the batch matrix spike (MS) was outside existing control limits;
- CCV – Recovery for a continuing calibration verification (CCV) standard was outside existing control limits;
- SUR – Recovery of a surrogate (SUR) for associated analytes was outside existing control limits;
- RPD – The precision, measured as relative percent difference (RPD), of batch replicate measurements was outside existing control limits;
- RSD – The precision, measured as relative standard deviation (RSD), of batch replicate measurements was outside existing control limits;
- SMP – Sample - used precision derived from replicate analyses of a sample;

The following data qualifiers are used, where applicable, in this report as specified in 62-160 F.A.C.

- 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).

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.

Sample Location: LONG BRANCH AT APPT WALKWAY

Collection Date/Time: 06/12/2018 10:50

Field ID: G1SW0098

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2000477	EPA 8321B	2,4-D	0.0064	I	ug/L	P346705	RPD
		Bentazon	0.021		ug/L	P346705	RPD
		MCP	0.0023	I	ug/L	P346705	RPD
		Triclopyr**	0.0040	U	ug/L	P346705	RPD
		Imidacloprid	0.019		ug/L	P346705	
		Diuron	0.0061	I	ug/L	P346705	
		Pyraclostrobin**	0.0020	U	ug/L	P346705	MS, RPD
		Primidone**	0.0040	U	ug/L	P346705	
		Linuron	0.0040	U	ug/L	P346705	
		Acetaminophen**	0.0080	U	ug/L	P346705	
		Fenuron	0.016	U	ug/L	P346705	
		Imazapyr**	0.13		ug/L	P346705	
		Carbamazepine**	4.0E-04	U	ug/L	P346705	
		Fluridone**	0.065		ug/L	P346705	
		Hydrocodone**	8.0E-04	U	ug/L	P346705	
		Sucralose**	0.010	U	ug/L	P346868	

Sample Location: LONG BRANCH BY BRIARWOOD

Collection Date/Time: 06/12/2018 11:20

Field ID: G1SW0097

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2000478	EPA 8321B	2,4-D	0.0056	I	ug/L	P346705	RPD
		Bentazon	0.019		ug/L	P346705	RPD
		MCP	0.0033	I	ug/L	P346705	RPD
		Triclopyr**	0.0040	U	ug/L	P346705	RPD
		Imidacloprid	0.014		ug/L	P346705	
		Diuron	0.0090		ug/L	P346705	
		Pyraclostrobin**	0.0020	U	ug/L	P346705	MS, RPD
		Primidone**	0.0040	U	ug/L	P346705	
		Linuron	0.0040	U	ug/L	P346705	
		Acetaminophen**	0.0080	U	ug/L	P346705	
		Fenuron	0.016	U	ug/L	P346705	
		Imazapyr**	0.17		ug/L	P346705	
		Carbamazepine**	4.0E-04	U	ug/L	P346705	
		Fluridone**	0.14		ug/L	P346705	
		Hydrocodone**	8.0E-04	U	ug/L	P346705	
		Sucralose**	0.010	U	ug/L	P346868	

Sample Location: FIELD BLANK_06122018

Collection Date/Time: 06/12/2018 11:00

Field ID: BLANK

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2000432	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P346871	
	EPA 300.0 Rev. 2.1	Chloride	0.20	U	mg Cl/L	P347316	
		Sulfate	0.20	U	mg SO4/L	P347318	
	SM 2120 B	Color (true)	2.5	U	PCU	P346850	
	SM 2320 B-97	Total Alkalinity	0.65	UQ	mg CaCO3/L	P348056	
	SM 2540 C-97	TDS	15	U	mg/L	P347409	
	SM 2540 D-97	TSS	2	U	mg/L	P347417	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P347159	
2000435	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P347340	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P347596	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P347302	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P347190	
	SM 5310 B-00	Organic Carbon	0.50	U	mg C/L	P347185	
2000438	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P346878	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Chloride: Batch matrix spike recoveries for one of two spiked samples are unavailable because of high analyte concentration in the QC sample.

SM 2320 B-97: Sample expired because of analytical difficulties.

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: FIELD BLANK_06122018

Collection Date/Time: 06/12/2018 11:00

Field ID: blank

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2000479	EPA 8321B	2,4-D	0.0020	U	ug/L	P346705	RPD
		Bentazon	8.0E-04	U	ug/L	P346705	RPD
		MCP	0.0020	U	ug/L	P346705	RPD
		Triclopyr**	0.0040	U	ug/L	P346705	RPD
		Imidacloprid	0.0020	U	ug/L	P346705	
		Diuron	0.0020	U	ug/L	P346705	
		Pyraclostrobin**	0.0020	U	ug/L	P346705	MS, RPD
		Primidone**	0.0040	U	ug/L	P346705	
		Linuron	0.0040	U	ug/L	P346705	
		Acetaminophen**	0.0080	U	ug/L	P346705	
		Fenuron	0.016	U	ug/L	P346705	
		Imazapyr**	0.0040	U	ug/L	P346705	
		Carbamazepine**	4.0E-04	U	ug/L	P346705	
		Fluridone**	4.0E-04	U	ug/L	P346705	
		Hydrocodone**	8.0E-04	U	ug/L	P346705	
		Sucralose**	0.010	U	ug/L	P346868	

Sample Location: CEDAR CREEK @ PINEHURST

Collection Date/Time: 06/12/2018 09:20

Field ID: G5SW0129

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2000433	EPA 180.1 Rev. 2.0	Turbidity	2.1		NTU	P346871	
	EPA 300.0 Rev. 2.1	Chloride	160		mg Cl/L	P347316	
		Sulfate	27		mg SO4/L	P347318	
	SM 2120 B	Color (true)	56		PCU	P346850	
	SM 2320 B-97	Total Alkalinity	110		mg CaCO3/L	P347034	RPD
	SM 2540 C-97	TDS	468	A	mg/L	P347410	
	SM 2540 D-97	TSS	3	IA	mg/L	P347418	
	SM 4500 F-C-97	Fluoride	0.31		mg F/L	P347038	
2000436	EPA 350.1 Rev. 2.0	Ammonia-N	0.024		mg N/L	P347340	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.78		mg N/L	P347596	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.063		mg N/L	P347302	
	EPA 365.1 Rev. 2.0	Total-P	0.15		mg P/L	P347190	
	SM 5310 B-00	Organic Carbon	10		mg C/L	P347185	
2000439	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.12		mg P/L	P346878	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Chloride: Batch matrix spike recoveries for one of two spiked samples are unavailable because of high analyte concentration in the QC sample.

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: CEDAR CREEK @ PINEHURST

Collection Date/Time: 06/12/2018 09:20

Field ID: G5SW0129

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2000480	EPA 8321B	2,4-D	0.0091		ug/L	P346705	RPD
		Bentazon	0.064		ug/L	P346705	RPD
		MCP	0.0037	I	ug/L	P346705	RPD
		Triclopyr**	0.0040	U	ug/L	P346705	RPD
		Imidacloprid	0.13		ug/L	P346705	
		Diuron	0.0043	I	ug/L	P346705	
		Pyraclostrobin**	0.0020	U	ug/L	P346705	MS, RPD
		Primidone**	0.026		ug/L	P346705	
		Linuron	0.0040	U	ug/L	P346705	
		Acetaminophen**	0.0080	U	ug/L	P346705	
		Fenuron	0.016	U	ug/L	P346705	
		Imazapyr**	0.089		ug/L	P346705	
		Carbamazepine**	0.0039		ug/L	P346705	
		Fluridone**	9.6E-04	I	ug/L	P346705	
		Hydrocodone**	8.0E-04	U	ug/L	P346705	
		Sucralose**	1.6		ug/L	P346868	

Sample Location: BISHOP CRK @ 590 BRIDGE

Collection Date/Time: 06/12/2018 10:20

Field ID: G1SW0054

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2000434	EPA 180.1 Rev. 2.0	Turbidity	3.9		NTU	P346871	
	EPA 300.0 Rev. 2.1	Chloride	1.8E+03		mg Cl/L	P347316	
		Sulfate	250		mg SO4/L	P347318	
	SM 2120 B	Color (true)	45		PCU	P346850	
	SM 2320 B-97	Total Alkalinity	161		mg CaCO3/L	P347267	RPD
	SM 2540 C-97	TDS	3.23E+03		mg/L	P347408	
	SM 2540 D-97	TSS	3	IA	mg/L	P347422	
	SM 4500 F-C-97	Fluoride	0.43	I	mg F/L	P347271	
2000437	EPA 350.1 Rev. 2.0	Ammonia-N	0.16		mg N/L	P347341	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.76		mg N/L	P347598	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.11		mg N/L	P346967	
	EPA 365.1 Rev. 2.0	Total-P	0.32		mg P/L	P347120	MS
	SM 5310 B-00	Organic Carbon	14		mg C/L	P347528	
2000440	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.24		mg P/L	P346879	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Chloride: Batch matrix spike recoveries for one of two spiked samples are unavailable because of high analyte concentration in the QC sample.

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P346871

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P347316

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P347318

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P347340

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P347341

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P347596

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P347598

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P346967

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P347302

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P347120

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P347190

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P346878

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P346879

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

Reference Method: EPA 8321B
Batch ID: P346705

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
Acetaminophen	0.0080	U	ug/L
Bentazon	8.0E-04	U	ug/L
Carbamazepine	4.0E-04	U	ug/L
Diuron	0.0020	U	ug/L
Fenuron	0.016	U	ug/L
Fluridone	4.0E-04	U	ug/L
Hydrocodone	8.0E-04	U	ug/L
Imazapyr	0.0040	U	ug/L
Imidacloprid	0.0020	U	ug/L
Linuron	0.0040	U	ug/L
MCPP	0.0020	U	ug/L
Primidone	0.0040	U	ug/L
Pyraclostrobin	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: EPA 8321B
Batch ID: P346868

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: SM 2120 B
Batch ID: P346850

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Quality Assurance Report

Method Blank Results

Reference Method: SM 2320 B-97
Batch ID: P347034

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

Reference Method: SM 2320 B-97
Batch ID: P347267

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

Reference Method: SM 2320 B-97
Batch ID: P348056

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

Reference Method: SM 2540 C-97
Batch ID: P347408

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P347409

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P347410

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P347417

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P347418

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P347422

Component	Result	Code	Units
TSS	3	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 4500 F-C-97
Batch ID: P347038

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P347159

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P347271

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P347185

Component	Result	Code	Units
Organic Carbon	0.50	U	mg C/L

Reference Method: SM 5310 B-00
Batch ID: P347528

Component	Result	Code	Units
Organic Carbon	0.50	U	mg C/L

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P347316

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	99.3		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P347318

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P347340

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P347341

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: P347596

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	97.4		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P347598

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P346967

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P347302

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P347120

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	94.8		P	90 - 110

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P347190

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	99.6		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P346878

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	99.7		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P346879

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

Reference Method: EPA 8321B
Batch ID: P346705

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	64.3		P	40 - 150
Acetaminophen	82.6		P	30 - 150
Bentazon	76.8		P	30 - 150
Carbamazepine	92.1		P	40 - 150
Diuron	85.2		P	40 - 150
Fenuron	101		P	40 - 150
Fluridone	73.6		P	40 - 150
Hydrocodone	92.9		P	40 - 150
Imazapyr	90.5		P	40 - 150
Imidacloprid	110		P	40 - 160
Linuron	67.8		P	40 - 150
MCPP	82.1		P	40 - 150
Primidone	99.0		P	40 - 150
Pyraclostrobin	42.3		P	40 - 150
Triclopyr	87.7		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P346868

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	77.2		P	40 - 150

Reference Method: SM 2320 B-97
Batch ID: P347034

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	100		P	98 - 107

Reference Method: SM 2320 B-97
Batch ID: P347267

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	100		P	98 - 107

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-97
Batch ID: P348056

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	98 - 107

Reference Method: SM 4500 F-C-97
Batch ID: P347038

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.1		P	91 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P347159

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.5		P	91 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P347271

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.6		P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P347185

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	94.8		P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P347528

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	94.2		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P347316

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2000485	Chloride	97.9		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P347318

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2000391	Sulfate	100		P	90 - 110
2000485	Sulfate	100		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P347340

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2000408	Ammonia-N	99.2	99.0	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P347341

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2000823	Ammonia-N	104	105	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P347596

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2000394	Kjeldahl Nitrogen	99.4	111	P/F	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P347598

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2000731	Kjeldahl Nitrogen	102	99.6	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P346967

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2000233	NO2NO3-N	101	106	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P347302

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2000408	NO2NO3-N	102	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P347120

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2000377	Total-P	87.3	86.8	F/F	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P347190

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2000436	Total-P	96.4	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P346878

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1999990	O-Phosphate-P	97.5	99.7	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P346879

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2000269	O-Phosphate-P	98.9	98.7	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P346705

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2000080	2,4-D	51.7	76.8	P/P	40 - 150
2000080	Acetaminophen	80.8	76.7	P/P	30 - 150
2000080	Bentazon	57.1	40.4	P/P	30 - 150
2000080	Carbamazepine	71.8	64.3	P/P	40 - 150
2000080	Diuron	62.5	48.6	P/P	40 - 150
2000080	Fenuron	51.3	50.5	P/P	40 - 150
2000080	Fluridone	44.9	46.9	P/P	40 - 150
2000080	Hydrocodone	65.4	59.6	P/P	40 - 150
2000080	Imazapyr	89.1	66.6	P/P	40 - 150
2000080	Imidacloprid	118	112	P/P	40 - 160
2000080	Linuron	60.1	53.6	P/P	40 - 150
2000080	MCP	77.2	108	P/P	40 - 150
2000080	Primidone	60.8	53.4	P/P	40 - 150
2000080	Pyraclostrobin	3.91	9.89	F/F	40 - 150
2000080	Triclopyr	58.9	103	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P346868

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2000693	Sucralose	72.9	86.4	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P347038

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2000390	Fluoride	93.8	93.8	P/P	91 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P347159

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2000937	Fluoride	94.7	95.8	P/P	91 - 105

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P347271

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1999650	Fluoride	96.9	96.9	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P347185

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2000126	Organic Carbon	102	101	P/P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P347528

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2000437	Organic Carbon	93.6	93.8	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P346871

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2000407	Turbidity	9.72	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P347316

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2000391	Chloride	1.69	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P347318

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2000391	Sulfate	1.66	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P347340

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2000408	Ammonia-N	0.128	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P347341

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2000823	Ammonia-N	0.639	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P347596

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2000394	Kjeldahl Nitrogen	6.52	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P347598

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2000731	Kjeldahl Nitrogen	2.16	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P346967

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2000233	NO2NO3-N	5.31	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P347302

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2000408	NO2NO3-N	1.49	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P347120

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2000377	Total-P	0.594	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P347190

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2000436	Total-P	2.67	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P346878

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1999990	O-Phosphate-P	2.23	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P346879

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2000269	O-Phosphate-P	0.151	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P346705

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2000080	2,4-D	39.0	Spike	F	0 - 30
2000080	Acetaminophen	5.14	Spike	P	0 - 30
2000080	Bentazon	34.3	Spike	F	0 - 30
2000080	Carbamazepine	11.1	Spike	P	0 - 30
2000080	Diuron	24.9	Spike	P	0 - 30
2000080	Fenuron	1.63	Spike	P	0 - 30
2000080	Fluridone	4.36	Spike	P	0 - 30
2000080	Hydrocodone	9.24	Spike	P	0 - 30
2000080	Imazapyr	10.3	Spike	P	0 - 30
2000080	Imidacloprid	4.81	Spike	P	0 - 30
2000080	Linuron	11.5	Spike	P	0 - 30
2000080	MCP	33.1	Spike	F	0 - 30
2000080	Primidone	13.0	Spike	P	0 - 30
2000080	Pyraclostrobin	86.8	Spike	F	0 - 30
2000080	Triclopyr	54.0	Spike	F	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P346868

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2000693	Sucralose	17.0	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P346850

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2000407	Color (true)	1.86	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P347034

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2000390	Total Alkalinity	9.16	Sample	F	0 - 1.6

Reference Method: SM 2320 B-97
Batch ID: P347267

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1999650	Total Alkalinity	7.69	Sample	F	0 - 1.6

Reference Method: SM 2320 B-97
Batch ID: P348056

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2003535	Total Alkalinity	0.241	Sample	P	0 - 1.6

Reference Method: SM 2540 C-97
Batch ID: P347408

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1999726	TDS	5.95	Sample	P	0 - 10

Reference Method: SM 2540 C-97
Batch ID: P347409

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2000242	TDS	0.0	Sample	P	0 - 10

Reference Method: SM 2540 C-97
Batch ID: P347410

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2000433	TDS	6.41	Sample	P	0 - 10

Quality Assurance Report Precision

Reference Method: SM 4500 F-C-97
Batch ID: P347038

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2000390	Fluoride	0.0	Spike	P	0 - 3.5

Reference Method: SM 4500 F-C-97
Batch ID: P347159

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2000937	Fluoride	0.943	Spike	P	0 - 3.5

Reference Method: SM 4500 F-C-97
Batch ID: P347271

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1999650	Fluoride	0.0	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
Batch ID: P347185

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2000126	Organic Carbon	0.932	Spike	P	0 - 20

Reference Method: SM 5310 B-00
Batch ID: P347528

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2000437	Organic Carbon	0.155	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: 2000477
Field Sample ID: G1SW0098

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	84.5	P	30 - 160
EPA 8321B	Acetaminophen-d4	95.6	P	30 - 160
EPA 8321B	Carbamazepine-d10	84.7	P	30 - 160
EPA 8321B	Diuron-d6	74.8	P	30 - 160
EPA 8321B	Diuron-d6	62.5	P	30 - 160
EPA 8321B	Primidone-d5	99.5	P	30 - 160
EPA 8321B	Sucralose-d6	74.0	P	40 - 160

Lab Sample ID: 2000478
Field Sample ID: G1SW0097

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	88.9	P	30 - 160
EPA 8321B	Acetaminophen-d4	91.3	P	30 - 160
EPA 8321B	Carbamazepine-d10	86.3	P	30 - 160
EPA 8321B	Diuron-d6	72.7	P	30 - 160
EPA 8321B	Diuron-d6	80.9	P	30 - 160
EPA 8321B	Primidone-d5	110	P	30 - 160
EPA 8321B	Sucralose-d6	88.3	P	40 - 160

Lab Sample ID: 2000479
Field Sample ID: blank

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	65.3	P	30 - 160
EPA 8321B	Acetaminophen-d4	90.2	P	30 - 160
EPA 8321B	Carbamazepine-d10	115	P	30 - 160
EPA 8321B	Diuron-d6	65.7	P	30 - 160
EPA 8321B	Diuron-d6	108	P	30 - 160
EPA 8321B	Primidone-d5	105	P	30 - 160
EPA 8321B	Sucralose-d6	107	P	40 - 160

Lab Sample ID: 2000480
Field Sample ID: G5SW0129

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	115	P	30 - 160
EPA 8321B	Acetaminophen-d4	92.4	P	30 - 160
EPA 8321B	Carbamazepine-d10	83.7	P	30 - 160
EPA 8321B	Diuron-d6	88.6	P	30 - 160
EPA 8321B	Diuron-d6	92.3	P	30 - 160
EPA 8321B	Primidone-d5	108	P	30 - 160
EPA 8321B	Sucralose-d6	65.0	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: SM 2120 B

Run ID: A84549

Included Lab Sample IDs: 2000432, 2000433, 2000434

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	100	101	P/P	90 - 115

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A84568

Included Lab Sample IDs: 2000432, 2000433, 2000434

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.0	99.5	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A84574

Included Lab Sample IDs: 2000438, 2000439, 2000440

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	96.4	98.2	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A84610

Included Lab Sample IDs: 2000437

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

Reference Method: SM 2320 B-97

Run ID: A84646

Included Lab Sample IDs: 2000433

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	102	100	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A84646

Included Lab Sample IDs: 2000433

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.0	100	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A84665

Included Lab Sample IDs: 2000477, 2000478, 2000479, 2000480

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	76.0	77.8	P/P	60 - 160

Reference Method: SM 4500 F-C-97

Run ID: A84691

Included Lab Sample IDs: 2000432

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	100	102	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 5310 B-00

Run ID: A84709

Included Lab Sample IDs: 2000435, 2000436

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	94.7	95.6	P/P	90 - 110
Organic Carbon	95.8	94.7	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A84710

Included Lab Sample IDs: 2000437

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	97.9	99.7	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A84728

Included Lab Sample IDs: 2000477, 2000478, 2000479, 2000480

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	97.9	104	P/P	50 - 150
Bentazon	123	122	P/P	50 - 150
MCP	97.2	93.0	P/P	50 - 150
Pyraclostrobin	146	130	P/P	60 - 150
Triclopyr	98.8	113	P/P	50 - 160

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A84739

Included Lab Sample IDs: 2000435, 2000436

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO ₂ NO ₃ -N	100	100	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A84742

Included Lab Sample IDs: 2000432, 2000433, 2000434

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	101	103	P/P	90 - 110
Sulfate	101	103	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A84751

Included Lab Sample IDs: 2000477, 2000478, 2000479, 2000480

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetaminophen	107	106	P/P	60 - 160
Carbamazepine	119	147	P/P	60 - 160
Diuron	123	134	P/P	60 - 150
Fenuron	106	108	P/P	60 - 150
Fluridone	109	109	P/P	60 - 160
Hydrocodone	103	103	P/P	60 - 150
Imazapyr	103	95.5	P/P	50 - 150
Imidacloprid	113	108	P/P	60 - 150
Linuron	115	108	P/P	60 - 150
Primidone	105	98.6	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: SM 2320 B-97
Run ID: A84752
Included Lab Sample IDs: 2000434

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	99.6	102	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Run ID: A84752
Included Lab Sample IDs: 2000434

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

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A84761
Included Lab Sample IDs: 2000436

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

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A84774
Included Lab Sample IDs: 2000435

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

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A84776
Included Lab Sample IDs: 2000435, 2000436, 2000437

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	100	101	P/P	90 - 110
Ammonia-N	101	102	P/P	90 - 110
Ammonia-N	102	101	P/P	90 - 110

Reference Method: EPA 8321B
Run ID: A84801
Included Lab Sample IDs: 2000478

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluridone	111	105	P/P	60 - 160

Reference Method: SM 5310 B-00
Run ID: A84844
Included Lab Sample IDs: 2000437

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.8	95.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A84958
Included Lab Sample IDs: 2000435, 2000436, 2000437

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A84958

Included Lab Sample IDs: 2000435, 2000436, 2000437

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	104	92.8	P/P	90 - 110
Kjeldahl Nitrogen	109	108	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A85074

Included Lab Sample IDs: 2000432

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	106	101	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				9.72	
EPA 300.0 Rev. 2.1	Chloride	99.3	97.9		1.69	
	Sulfate	101	100 100		1.66	
EPA 350.1 Rev. 2.0	Ammonia-N	103	99.2 99.0			0.128
	Ammonia-N	103	104 105			0.639
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	97.4	99.4 111			6.52
	Kjeldahl Nitrogen	98.8	102 99.6			2.16
EPA 353.2 Rev. 2.0	NO2NO3-N	98.5	101 106			5.31
	NO2NO3-N	102	102 100			1.49
EPA 365.1 Rev. 2.0	Total-P	94.8	87.3 86.8			0.594
	Total-P	99.6	96.4 100			2.67
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.7	97.5 99.7			2.23
	O-Phosphate-P	102	98.9 98.7			0.151
EPA 8321B	2,4-D	64.3	51.7 76.8			39.0
	Acetaminophen	82.6	80.8 76.7			5.14
	Bentazon	76.8	57.1 40.4			34.3
	Carbamazepine	92.1	71.8 64.3			11.1
	Diuron	85.2	62.5 48.6			24.9
	Fenuron	101	51.3 50.5			1.63
	Fluridone	73.6	44.9 46.9			4.36
	Hydrocodone	92.9	65.4 59.6			9.24
	Imazapyr	90.5	89.1 66.6			10.3
	Imidacloprid	110	118 112			4.81
	Linuron	67.8	60.1 53.6			11.5
	MCP	82.1	77.2 108			33.1
	Primidone	99.0	60.8 53.4			13.0
	Pyraclostrobin	42.3	3.91 9.89			86.8
	Sucralose	77.2	72.9 86.4			17.0
	Triclopyr	87.7	58.9 103			54.0
SM 2120 B	Color (true)				1.86	
SM 2320 B-97	Total Alkalinity	100			9.16	
	Total Alkalinity	100			7.69	
	Total Alkalinity	102			0.241	
SM 2540 C-97	TDS				5.95	
	TDS				0.0	
	TDS				6.41	
SM 4500 F-C-97	Fluoride	98.1	93.8 93.8			0.0
	Fluoride	96.5	94.7 95.8			0.943
	Fluoride	98.6	96.9 96.9			0.0
SM 5310 B-00	Organic Carbon	94.8	102 101			0.932
	Organic Carbon	94.2	93.6 93.8			0.155

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2000432, 2000433, 2000434
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2000432, 2000433, 2000434
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2000432, 2000433, 2000434
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2000435, 2000436, 2000437

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2000435, 2000436, 2000437
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2000435, 2000436, 2000437
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2000435, 2000436, 2000437
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2000438, 2000439, 2000440
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2000477, 2000478, 2000479, 2000480
SM 2120 B / E31780	True Color measured at 450 nm	2000432, 2000433, 2000434
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2000432, 2000433, 2000434
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2000432, 2000433, 2000434
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2000432, 2000433, 2000434
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2000432, 2000433, 2000434
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2000435, 2000436, 2000437

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	06/13/2018			06/13/2018 17:12	William L. Brown IV	2000432, 2000433, 2000434
EPA 300.0 Rev. 2.1	06/13/2018			06/21/2018 22:25	Irina Carbone	2000432
	06/13/2018			06/21/2018 22:37	Irina Carbone	2000433
	06/13/2018			06/21/2018 22:48	Irina Carbone	2000434
EPA 350.1 Rev. 2.0	06/13/2018			06/21/2018 10:40	Ping Hua	2000436
	06/13/2018			06/21/2018 10:58	Ping Hua	2000435
	06/13/2018			06/21/2018 11:13	Ping Hua	2000437
EPA 351.2 Rev. 2.0	06/13/2018	06/27/2018 15:30	Adrian Shelby	06/30/2018 19:21	Joseph Suarez	2000435
	06/13/2018	06/27/2018 15:30	Adrian Shelby	06/30/2018 19:23	Joseph Suarez	2000436
	06/13/2018	06/27/2018 15:30	Adrian Shelby	06/30/2018 21:15	Joseph Suarez	2000437
EPA 353.2 Rev. 2.0	06/13/2018			06/15/2018 11:02	Lauren Bottorf	2000437
	06/13/2018			06/20/2018 11:48	Beverly Y. Sanders	2000435
	06/13/2018			06/20/2018 11:49	Beverly Y. Sanders	2000436
EPA 365.1 Rev. 2.0	06/13/2018	06/19/2018 11:10	Sima Feizi	06/20/2018 12:46	Lipi Saha	2000437
	06/13/2018	06/20/2018 11:10	Sima Feizi	06/21/2018 10:47	Lipi Saha	2000436
	06/13/2018	06/20/2018 11:10	Sima Feizi	06/22/2018 10:37	Beverly Y. Sanders	2000435
EPA 365.1 Rev. 2.0 dissolved	06/13/2018			06/13/2018 16:16	Megan Treadwell	2000438, 2000439
	06/13/2018			06/13/2018 16:17	Megan Treadwell	2000440
EPA 8321B	06/13/2018	06/13/2018 16:30	Hoor Shaik	06/15/2018 01:52	Juyoung Kim	2000477
	06/13/2018	06/13/2018 16:30	Hoor Shaik	06/15/2018 02:27	Juyoung Kim	2000478
	06/13/2018	06/13/2018 16:30	Hoor Shaik	06/15/2018 03:01	Juyoung Kim	2000479
	06/13/2018	06/13/2018 16:30	Hoor Shaik	06/15/2018 03:36	Juyoung Kim	2000480
	06/13/2018	06/13/2018 16:30	Hoor Shaik	06/19/2018 07:32	Juyoung Kim	2000477
	06/13/2018	06/13/2018 16:30	Hoor Shaik	06/19/2018 08:07	Juyoung Kim	2000478
	06/13/2018	06/13/2018 16:30	Hoor Shaik	06/19/2018 08:41	Juyoung Kim	2000479
	06/13/2018	06/13/2018 16:30	Hoor Shaik	06/19/2018 09:50	Juyoung Kim	2000480
	06/13/2018	06/13/2018 16:30	Hoor Shaik	06/22/2018 14:27	Juyoung Kim	2000478
	06/13/2018	06/18/2018 11:00	Juyoung Kim	06/18/2018 18:09	Mohammad Ghaffari	2000477
	06/13/2018	06/18/2018 11:00	Juyoung Kim	06/18/2018 18:27	Mohammad Ghaffari	2000478
	06/13/2018	06/18/2018 11:00	Juyoung Kim	06/18/2018 18:46	Mohammad Ghaffari	2000479
	06/13/2018	06/18/2018 11:00	Juyoung Kim	06/18/2018 19:05	Mohammad Ghaffari	2000480
SM 2120 B	06/13/2018			06/13/2018 17:23	Tanya Welborn	2000432, 2000433
	06/13/2018			06/13/2018 17:24	Tanya Welborn	2000434
SM 2320 B-97	06/13/2018			06/16/2018 13:11	Dale L. Simmons	2000433
	06/13/2018			06/21/2018 06:50	Lauren Bottorf	2000434
	06/13/2018			07/03/2018 15:51	Dale L. Simmons	2000432
SM 2540 C-97	06/13/2018			06/15/2018 16:52	Yijie Li	2000432, 2000433, 2000434
SM 2540 D-97	06/13/2018			06/15/2018 16:52	Yijie Li	2000432, 2000433, 2000434
SM 4500 F-C-97	06/13/2018			06/16/2018 13:11	Dale L. Simmons	2000433
	06/13/2018			06/20/2018 00:28	Lauren Bottorf	2000432

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 4500 F-C-97	06/13/2018			06/21/2018 01:54	Lauren Bottorf	2000434
SM 5310 B-00	06/13/2018			06/18/2018 21:04	Megan Treadwell	2000435
	06/13/2018			06/18/2018 21:54	Megan Treadwell	2000436
	06/13/2018			06/26/2018 08:12	Megan Treadwell	2000437