

Chemical Analysis Report

SO-DIST-2018-06-22-02

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

Event Description: **Wilderness Waterway**
Request ID: **RQ-2018-06-18-37**
Customer: **SO-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FLDEP South District Office
2295 Victoria Ave. Suite 364
Fort Myers, FL 33901-3381
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Certified by: Colin Wright, Program Administrator

Date Certified: 18-JUL-2018 10:47

A handwritten signature in black ink, appearing to read "Colin Wright", 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: ENRE 11 at Huston Bay

Collection Date/Time: 06/21/2018 11:25

Field ID: G5SD0026

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2002889	EPA 180.1 Rev. 2.0	Turbidity	3.4		NTU	P347383	
	SM 2320 B-97	Total Alkalinity	145		mg CaCO3/L	P347809	
	SM 2540 D-97	TSS	4	I	mg/L	P347829	
	SM 4500 F-C-97	Fluoride	0.64		mg F/L	P348058	
2002891	EPA 350.1 Rev. 2.0	Ammonia-N	0.008		mg N/L	P347765	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.2		mg N/L	P348070	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P347457	
	EPA 365.1 Rev. 2.0	Total-P	0.054		mg P/L	P347748	MS
	SM 5310 B-00	Organic Carbon	16		mg C/L	P348329	
2002893	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.007	I	mg P/L	P347369	

Ref. Method and Comment:

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

Sample Location: ENRE 9

Collection Date/Time: 06/21/2018 12:45

Field ID: G1SD0090

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2002890	EPA 180.1 Rev. 2.0	Turbidity	2.9		NTU	P347383	
	SM 2320 B-97	Total Alkalinity	171		mg CaCO3/L	P347809	
	SM 2540 D-97	TSS	6	IA	mg/L	P347829	
	SM 4500 F-C-97	Fluoride	0.98		mg F/L	P348058	
2002892	EPA 350.1 Rev. 2.0	Ammonia-N	0.038		mg N/L	P347765	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.76		mg N/L	P348070	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.013		mg N/L	P347457	
	EPA 365.1 Rev. 2.0	Total-P	0.057		mg P/L	P347748	MS
	SM 5310 B-00	Organic Carbon	10		mg C/L	P348329	
2002894	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.032		mg P/L	P347369	

Ref. Method and Comment:

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

Sample Location: ENRE 9

Collection Date/Time: 06/21/2018 12:45

Field ID: G1SD0090

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2002900	EPA 8321B	2,4-D	0.0025	I	ug/L	P347238	
		Bentazon	8.0E-04	U	ug/L	P347238	
		MCP	0.0020	U	ug/L	P347238	
		Triclopyr**	0.0040	U	ug/L	P347238	
		Imidacloprid	0.0020	U	ug/L	P347238	
		Diuron	0.0020	U	ug/L	P347238	
		Pyraclostrobin**	0.0020	U	ug/L	P347238	
		Primidone**	0.0040	U	ug/L	P347238	
		Linuron	0.0040	U	ug/L	P347238	
		Acetaminophen**	0.0080	U	ug/L	P347238	
		Fenuron	0.016	U	ug/L	P347238	
		Imazapyr**	0.0050	I	ug/L	P347238	
		Carbamazepine**	4.0E-04	U	ug/L	P347238	
		Fluridone**	9.2E-04	I	ug/L	P347238	
		Hydrocodone**	8.0E-04	U	ug/L	P347238	
		Sucralose**	0.010	U	ug/L	P347344	

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P347383

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P347765

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P348070

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P347457

Component	Result	Code	Units
NO ₂ NO ₃ -N	0.004	U	mg N/L

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P347748

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P347369

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

Reference Method: EPA 8321B
Batch ID: P347238

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B
Batch ID: P347344

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: SM 2320 B-97
Batch ID: P347809

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

Reference Method: SM 2540 D-97
Batch ID: P347829

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P348058

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P348329

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P347765

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P348070

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P347457

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: P347748

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	97.8		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P347369

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

Reference Method: EPA 8321B
Batch ID: P347238

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	104		P	40 - 150
Acetaminophen	108		P	30 - 150
Bentazon	111		P	30 - 150
Carbamazepine	92.3		P	40 - 150
Diuron	85.7		P	40 - 150
Fenuron	106		P	40 - 150
Fluridone	89.0		P	40 - 150
Hydrocodone	101		P	40 - 150
Imazapyr	90.5		P	40 - 150
Imidacloprid	97.2		P	40 - 160
Linuron	63.6		P	40 - 150
MCPP	118		P	40 - 150
Primidone	91.4		P	40 - 150
Pyraclostrobin	87.4		P	40 - 150
Triclopyr	113		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P347344

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	71.0		P	40 - 150

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-97
Batch ID: P347809

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	98 - 107

Reference Method: SM 4500 F-C-97
Batch ID: P348058

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.2		P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P348329

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	99.2		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P347765

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2002310	Ammonia-N	102	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P348070

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2002571	Kjeldahl Nitrogen	97.4	98.6	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P347457

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2002568	NO2NO3-N	102	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P347748

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2002938	Total-P	94.1	89.6	P/F	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P347369

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2002893	O-Phosphate-P	95.8	97.1	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P347238

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2003323	2,4-D	109	108	P/P	40 - 150
2003323	Acetaminophen	80.3	82.9	P/P	30 - 150
2003323	Bentazon	39.3	40.8	P/P	30 - 150
2003323	Carbamazepine	62.4	65.7	P/P	40 - 150
2003323	Diuron	59.4	62.2	P/P	40 - 150
2003323	Fenuron	70.3	71.6	P/P	40 - 150
2003323	Fluridone	79.7	77.6	P/P	40 - 150
2003323	Hydrocodone	80.5	80.8	P/P	40 - 150
2003323	Imazapyr	99.3	113	P/P	40 - 150
2003323	Imidacloprid	129	141	P/P	40 - 160
2003323	Linuron	57.2	51.2	P/P	40 - 150
2003323	MCPP	128	132	P/P	40 - 150
2003323	Primidone	79.5	74.8	P/P	40 - 150
2003323	Pyraclostrobin	77.7	82.2	P/P	40 - 150
2003323	Triclopyr	117	132	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P347344

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2002654	Sucralose	44.2	45.2	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P348058

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2003727	Fluoride	94.8	94.1	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P348329

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2002566	Organic Carbon	97.6	98.6	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P347383

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2002850	Turbidity	11.6	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P347765

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2002310	Ammonia-N	1.14	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P348070

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2002571	Kjeldahl Nitrogen	0.817	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P347457

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2002568	NO2NO3-N	0.489	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P347748

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2002938	Total-P	4.82	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P347369

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2002893	O-Phosphate-P	1.25	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P347238

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2003323	2,4-D	0.495	Spike	P	0 - 30
2003323	Acetaminophen	3.25	Spike	P	0 - 30
2003323	Bentazon	2.66	Spike	P	0 - 30
2003323	Carbamazepine	4.22	Spike	P	0 - 30
2003323	Diuron	4.60	Spike	P	0 - 30
2003323	Fenuron	1.74	Spike	P	0 - 30
2003323	Fluridone	2.55	Spike	P	0 - 30
2003323	Hydrocodone	0.333	Spike	P	0 - 30
2003323	Imazapyr	2.32	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
 Batch ID: P347238

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2003323	Imidacloprid	7.45	Spike	P	0 - 30
2003323	Linuron	11.1	Spike	P	0 - 30
2003323	MCPP	2.77	Spike	P	0 - 30
2003323	Primidone	5.66	Spike	P	0 - 30
2003323	Pyraclostrobin	5.60	Spike	P	0 - 30
2003323	Triclopyr	11.9	Spike	P	0 - 30

Reference Method: EPA 8321B
 Batch ID: P347344

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2002654	Sucralose	2.16	Spike	P	0 - 30

Reference Method: SM 2320 B-97
 Batch ID: P347809

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2003358	Total Alkalinity	0.250	Sample	P	0 - 1.6

Reference Method: SM 4500 F-C-97
 Batch ID: P348058

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2003727	Fluoride	0.473	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
 Batch ID: P348329

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2002566	Organic Carbon	0.754	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: 2002900
Field Sample ID: G1SD0090

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	130	P	30 - 160
EPA 8321B	Acetaminophen-d4	66.7	P	30 - 160
EPA 8321B	Carbamazepine-d10	69.2	P	30 - 160
EPA 8321B	Diuron-d6	60.1	P	30 - 160
EPA 8321B	Primidone-d5	74.4	P	30 - 160
EPA 8321B	Sucralose-d6	112	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A84782

Included Lab Sample IDs: 2002893, 2002894

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.8	97.8	P/P	90 - 110
O-Phosphate-P	99.1	98.8	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A84787

Included Lab Sample IDs: 2002889, 2002890

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	98.5	99.0	P/P	95 - 105

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A84811

Included Lab Sample IDs: 2002891, 2002892

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

Reference Method: EPA 8321B

Run ID: A84826

Included Lab Sample IDs: 2002900

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	70.3	105	P/P	60 - 160

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A84937

Included Lab Sample IDs: 2002891, 2002892

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

Reference Method: SM 2320 B-97

Run ID: A84959

Included Lab Sample IDs: 2002889, 2002890

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

Reference Method: EPA 8321B

Run ID: A84988

Included Lab Sample IDs: 2002900

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	121	108	P/P	50 - 150
Acetaminophen	119	103	P/P	60 - 160
Bentazon	141	142	P/P	50 - 150
Carbamazepine	111	99.4	P/P	60 - 160
Diuron	111	98.1	P/P	60 - 150
Fenuron	105	96.6	P/P	60 - 150
Fluridone	106	100	P/P	60 - 160
Hydrocodone	106	97.7	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A84988
Included Lab Sample IDs: 2002900

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Imazapyr	92.8	89.1	P/P	50 - 150
Imidacloprid	93.3	96.7	P/P	60 - 150
Linuron	95.8	80.8	P/P	60 - 150
MCPP	124	116	P/P	50 - 150
Primidone	96.8	86.5	P/P	60 - 150
Pyraclostrobin	107	97.6	P/P	60 - 150
Triclopyr	113	117	P/P	50 - 160

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A85035
Included Lab Sample IDs: 2002891, 2002892

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.8	99.8	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Run ID: A85074
Included Lab Sample IDs: 2002889, 2002890

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.5	98.1	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A85111
Included Lab Sample IDs: 2002891, 2002892

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	95.9	99.0	P/P	90 - 110

Reference Method: SM 5310 B-00
Run ID: A85182
Included Lab Sample IDs: 2002891, 2002892

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	101	102	P/P	90 - 110
Organic Carbon	102	102	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					11.6	
EPA 350.1 Rev. 2.0	Ammonia-N	99.0	102	101			1.14
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	97.6	97.4	98.6			0.817
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	102	102	102			0.489
EPA 365.1 Rev. 2.0	Total-P	97.8	94.1	89.6			4.82
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.1	95.8	97.1			1.25
EPA 8321B	2,4-D	104	109	108			0.495
	Acetaminophen	108	82.9	80.3			3.25
	Bentazon	111	39.3	40.8			2.66
	Carbamazepine	92.3	65.7	62.4			4.22
	Diuron	85.7	62.2	59.4			4.60
	Fenuron	106	71.6	70.3			1.74
	Fluridone	89.0	77.6	79.7			2.55
	Hydrocodone	101	80.8	80.5			0.333
	Imazapyr	90.5	113	99.3			2.32
	Imidacloprid	97.2	141	129			7.45
	Linuron	63.6	51.2	57.2			11.1
	MCPP	118	128	132			2.77
	Primidone	91.4	74.8	79.5			5.66
	Pyraclostrobin	87.4	82.2	77.7			5.60
	Sucralose	71.0	44.2	45.2			2.16
	Triclopyr	113	117	132			11.9
SM 2320 B-97	Total Alkalinity	103				0.250	
SM 4500 F-C-97	Fluoride	98.2	94.8	94.1			0.473
SM 5310 B-00	Organic Carbon	99.2	97.6	98.6			0.754

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2002889, 2002890
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2002891, 2002892
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2002891, 2002892
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2002891, 2002892
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2002891, 2002892
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2002893, 2002894
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2002900
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2002889, 2002890
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2002889, 2002890
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2002889, 2002890
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2002891, 2002892

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	06/22/2018			06/22/2018 16:12	William L. Brown IV	2002889, 2002890
EPA 350.1 Rev. 2.0	06/22/2018			06/29/2018 12:13	Julia Storbeck	2002891
	06/22/2018			06/29/2018 12:15	Julia Storbeck	2002892
EPA 351.2 Rev. 2.0	06/22/2018	07/09/2018 12:47	Tanya Welborn	07/10/2018 10:36	Joseph Suarez	2002891
	06/22/2018	07/09/2018 12:47	Tanya Welborn	07/10/2018 10:37	Joseph Suarez	2002892
EPA 353.2 Rev. 2.0	06/22/2018			06/25/2018 14:02	Lauren Bottorf	2002891
	06/22/2018			06/25/2018 14:03	Lauren Bottorf	2002892
EPA 365.1 Rev. 2.0	06/22/2018	06/29/2018 11:10	Sima Feizi	07/03/2018 10:32	Beverly Y. Sanders	2002891, 2002892
EPA 365.1 Rev. 2.0 dissolved	06/22/2018			06/22/2018 14:09	Megan Treadwell	2002893
	06/22/2018			06/22/2018 14:20	Megan Treadwell	2002894
EPA 8321B	06/22/2018	06/25/2018 09:15	Mohammad Ghaffari	06/26/2018 03:21	Mohammad Ghaffari	2002900
	06/22/2018	06/27/2018 08:30	Hoor Shaik	07/02/2018 16:50	Juyoung Kim	2002900
	06/22/2018	06/27/2018 08:30	Hoor Shaik	07/03/2018 04:22	Juyoung Kim	2002900
SM 2320 B-97	06/22/2018			07/01/2018 06:01	Dale L. Simmons	2002889
	06/22/2018			07/01/2018 06:12	Dale L. Simmons	2002890
SM 2540 D-97	06/22/2018			06/25/2018 15:09	Yijie Li	2002889, 2002890
SM 4500 F-C-97	06/22/2018			07/03/2018 14:55	Dale L. Simmons	2002889
	06/22/2018			07/03/2018 14:59	Dale L. Simmons	2002890
SM 5310 B-00	06/22/2018			07/12/2018 03:29	Megan Treadwell	2002891
	06/22/2018			07/12/2018 04:31	Megan Treadwell	2002892