

Chemical Analysis Report

CEN-DIST-2018-05-10-02

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

Event Description: **Unnamed Branch 2641 (Vol)**
Request ID: **RQ-2018-03-12-62**
Customer: **CEN-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FL Dept. of Environmental Protection
3319 Maguire Blvd., Suite 232
Orlando, FL 32803-3767
Attn: Mike Linger

For additional information please contact
Colin Wright, Ph.D.
Liang-Tsair Lin, Ph.D.
Kerry Tate, Ph.D.
Dr. rer. nat. Bettina Steinbock
Thekkekalathil Chandrasekhar, Ph.D, QA Officer
Phone (850) 245-8085

Certified by: Colin Wright, Program Administrator

Date Certified: 07-JUN-2018 15:05



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: Unnamed Branch @ 60m Upstream of Airport Road **Collection Date/Time: 05/09/2018 10:00**

Field ID: G5CE0084

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1991796	EPA 180.1 Rev. 2.0	Turbidity	2.6		NTU	P345061	
	EPA 300.0 Rev. 2.1	Chloride	61		mg Cl/L	P345276	
		Sulfate	5.3		mg SO4/L	P345278	
	SM 2120 B	Color (true)	71	A	PCU	P345037	
	SM 2320 B-97	Total Alkalinity	105		mg CaCO3/L	P345482	RPD
	SM 2540 C-97	TDS	264	A	mg/L	P345474	
	SM 2540 D-97	TSS	2	UA	mg/L	P345285	
	SM 4500 F-C-97	Fluoride	0.060	I	mg F/L	P345485	
1991797	EPA 350.1 Rev. 2.0	Ammonia-N	0.016		mg N/L	P345268	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.42		mg N/L	P345822	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.060		mg N/L	P345243	
	EPA 365.1 Rev. 2.0	Total-P	0.050		mg P/L	P345145	
	SM 5310 B-00	Organic Carbon	13		mg C/L	P345357	
1991798	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.034		mg P/L	P345053	
1991822	EPA 8321B	2,4-D	0.0020	U	ug/L	P344935	
		Bentazon	0.17		ug/L	P344935	MS
		MCP	0.0020	U	ug/L	P344935	
		Triclopyr**	0.0040	U	ug/L	P344935	
		Imidacloprid	0.014		ug/L	P344935	
		Diuron	0.0021	I	ug/L	P344935	MS
		Pyraclostrobin**	0.0020	U	ug/L	P344935	
		Primidone**	0.0040	U	ug/L	P344935	
		Linuron	0.0040	U	ug/L	P344935	
		Acetaminophen**	0.0080	U	ug/L	P344935	
		Fenuron	0.016	U	ug/L	P344935	
		Imazapyr**	0.20		ug/L	P344935	
		Carbamazepine**	4.0E-04	U	ug/L	P344935	MS
		Fluridone**	0.0049		ug/L	P344935	
		Hydrocodone**	8.0E-04	U	ug/L	P344935	
		Sucralose**	0.12		ug/L	P345005	

Ref. Method and Comment:

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: P345061

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Quality Assurance Report

Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P345276

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P345278

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P345268

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P345822

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P345243

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P345145

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P345053

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

Reference Method: EPA 8321B
Batch ID: P344935

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B
Batch ID: P344935

Component	Result	Code	Units
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: P345005

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: SM 2120 B
Batch ID: P345037

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P345482

Component	Result	Code	Units
Total Alkalinity	0.65	U	mg CaCO3/L

Reference Method: SM 2540 C-97
Batch ID: P345474

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P345285

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P345485

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P345357

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: P345276

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	96.2		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P345278

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	95.6		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P345268

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

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P345822

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

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P345243

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

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P345145

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P345053

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	96.8		P	90 - 110

Reference Method: EPA 8321B
 Batch ID: P344935

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	104		P	40 - 150
Acetaminophen	93.4		P	30 - 150
Bentazon	102		P	30 - 150
Carbamazepine	67.4		P	40 - 150
Diuron	65.0		P	40 - 150
Fenuron	107		P	40 - 150
Fluridone	85.4		P	40 - 150
Hydrocodone	109		P	40 - 150
Imazapyr	103		P	40 - 150
Imidacloprid	113		P	40 - 160

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
 Batch ID: P344935

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Linuron	101		P	40 - 150
MCP	109		P	40 - 150
Primidone	103		P	40 - 150
Pyraclorobin	83.4		P	40 - 150
Tricopyr	109		P	40 - 150

Reference Method: EPA 8321B
 Batch ID: P345005

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	109		P	40 - 150

Reference Method: SM 2320 B-97
 Batch ID: P345482

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

Reference Method: SM 4500 F-C-97
 Batch ID: P345485

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	95.6		P	91 - 105

Reference Method: SM 5310 B-00
 Batch ID: P345357

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	94.1		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P345276

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1991701	Chloride	94.7		P	90 - 110
1991778	Chloride	95.5		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P345278

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1991701	Sulfate	94.0		P	90 - 110
1991778	Sulfate	93.8		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P345268

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

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P345268

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1991782	Ammonia-N	103	104	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P345822

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1991781	Kjeldahl Nitrogen	95.7	98.7	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P345243

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1991735	NO2NO3-N	100	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P345145

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1991831	Total-P	99.1	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P345053

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1991765	O-Phosphate-P	96.9	98.3	P/P	90 - 110

Reference Method: EPA 8321B
 Batch ID: P344935

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1990998	2,4-D	74.1	71.4	P/P	40 - 150
1990998	Acetaminophen	71.6	72.9	P/P	30 - 150
1990998	Bentazon	25.7	27.9	F/F	30 - 150
1990998	Carbamazepine	33.9	35.1	F/F	40 - 150
1990998	Diuron	37.5	38.0	F/F	40 - 150
1990998	Fenuron	42.6	46.5	P/P	40 - 150
1990998	Fluridone	63.7	66.1	P/P	40 - 150
1990998	Hydrocodone	67.5	71.6	P/P	40 - 150
1990998	Imazapyr	91.0	89.8	P/P	40 - 150
1990998	Imidacloprid	102	103	P/P	40 - 160
1990998	Linuron	78.7	77.8	P/P	40 - 150
1990998	MCCP	65.8	60.1	P/P	40 - 150
1990998	Primidone	60.5	55.6	P/P	40 - 150
1990998	Pyraclostrobin	69.1	69.7	P/P	40 - 150
1990998	Triclopyr	77.8	78.2	P/P	40 - 150

Reference Method: EPA 8321B
 Batch ID: P345005

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1991713	Sucralose	97.2	99.2	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P345485

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1992222	Fluoride	95.2	93.6	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P345357

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1991704	Organic Carbon	96.4	95.0	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P345061

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1991800	Turbidity	11.9	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P345276

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1991701	Chloride	0.702	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P345278

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1991701	Sulfate	0.645	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P345268

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1991782	Ammonia-N	0.360	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P345822

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1991781	Kjeldahl Nitrogen	1.92	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P345243

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
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Quality Assurance Report Precision

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P345243

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1991735	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P345145

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1991831	Total-P	1.70	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P345053

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1991765	O-Phosphate-P	1.43	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P344935

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1990998	2,4-D	3.71	Spike	P	0 - 30
1990998	Acetaminophen	1.78	Spike	P	0 - 30
1990998	Bentazon	8.36	Spike	P	0 - 30
1990998	Carbamazepine	3.60	Spike	P	0 - 30
1990998	Diuron	1.32	Spike	P	0 - 30
1990998	Fenuron	8.76	Spike	P	0 - 30
1990998	Fluridone	3.74	Spike	P	0 - 30
1990998	Hydrocodone	5.84	Spike	P	0 - 30
1990998	Imazapyr	0.809	Spike	P	0 - 30
1990998	Imidacloprid	0.974	Spike	P	0 - 30
1990998	Linuron	1.24	Spike	P	0 - 30
1990998	MCPP	9.09	Spike	P	0 - 30
1990998	Primidone	8.44	Spike	P	0 - 30
1990998	Pyraclostrobin	0.775	Spike	P	0 - 30
1990998	Triclopyr	0.510	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P345005

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1991713	Sucralose	1.94	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P345037

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1991796	Color (true)	1.81	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2320 B-97
Batch ID: P345482

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1992222	Total Alkalinity	4.30	Sample	F	0 - 1.6

Reference Method: SM 2540 C-97
Batch ID: P345474

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1991796	TDS	0.378	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P345485

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1992222	Fluoride	1.45	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
Batch ID: P345357

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1991704	Organic Carbon	1.26	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: 1991822
Field Sample ID: G5CE0084

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	74.8	P	30 - 160
EPA 8321B	Acetaminophen-d4	94.0	P	30 - 160
EPA 8321B	Carbamazepine-d10	52.0	P	30 - 160
EPA 8321B	Diuron-d6	54.2	P	30 - 160
EPA 8321B	Primidone-d5	91.6	P	30 - 160
EPA 8321B	Sucralose-d6	132	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A83732
Included Lab Sample IDs: 1991796

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	98.1	98.5	P/P	90 - 110
Sulfate	97.3	98.7	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 2120 B
Run ID: A83803
Included Lab Sample IDs: 1991796

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	102	101	P/P	90 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A83807
Included Lab Sample IDs: 1991798

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

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A83809
Included Lab Sample IDs: 1991796

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

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A83865
Included Lab Sample IDs: 1991797

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

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A83877
Included Lab Sample IDs: 1991797

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

Reference Method: EPA 8321B
Run ID: A83887
Included Lab Sample IDs: 1991822

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	110	101	P/P	50 - 150
MCP	104	104	P/P	50 - 150
Triclopyr	103	108	P/P	50 - 160

Reference Method: SM 5310 B-00
Run ID: A83906
Included Lab Sample IDs: 1991797

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	93.8	94.2	P/P	90 - 110

Reference Method: SM 2320 B-97
Run ID: A83969
Included Lab Sample IDs: 1991796

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

Calibration Verification

Reference Method: SM 2320 B-97
 Run ID: A83969
 Included Lab Sample IDs: 1991796

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	101	99.4	P/P	90 - 110

Reference Method: SM 4500 F-C-97
 Run ID: A83969
 Included Lab Sample IDs: 1991796

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	97.6	98.1	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Run ID: A83972
 Included Lab Sample IDs: 1991797

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

Reference Method: EPA 8321B
 Run ID: A83978
 Included Lab Sample IDs: 1991822

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	110	109	P/P	60 - 160

Reference Method: EPA 351.2 Rev. 2.0
 Run ID: A84147
 Included Lab Sample IDs: 1991797

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	97.2	100	P/P	90 - 110

Reference Method: EPA 8321B
 Run ID: A84229
 Included Lab Sample IDs: 1991822

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetaminophen	103	108	P/P	60 - 150
Carbamazepine	94.7	91.8	P/P	60 - 150
Diuron	99.0	96.2	P/P	60 - 150
Fenuron	94.4	99.1	P/P	60 - 150
Fluridone	97.9	97.4	P/P	60 - 160
Hydrocodone	110	106	P/P	60 - 150
Imazapyr	114	108	P/P	50 - 150
Imidacloprid	104	97.7	P/P	60 - 150
Linuron	112	112	P/P	60 - 150
Primidone	107	107	P/P	60 - 150
Pyraclostrobin	97.8	91.7	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A84278
Included Lab Sample IDs: 1991822

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Bentazon	131	90.6	P/P	50 - 150

* 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				11.9	
EPA 300.0 Rev. 2.1	Chloride	96.2	94.7 95.5		0.702	
	Sulfate	95.6	94.0 93.8		0.645	
EPA 350.1 Rev. 2.0	Ammonia-N	101	103 104			0.360
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	96.3	95.7 98.7			1.92
EPA 353.2 Rev. 2.0	NO2NO3-N	100	100 100			0.0
EPA 365.1 Rev. 2.0	Total-P	94.8	99.1 101			1.70
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	96.8	96.9 98.3			1.43
EPA 8321B	2,4-D	104	74.1 71.4			3.71
	Acetaminophen	93.4	71.6 72.9			1.78
	Bentazon	102	25.7 27.9			8.36
	Carbamazepine	67.4	33.9 35.1			3.60
	Diuron	65.0	37.5 38.0			1.32
	Fenuron	107	42.6 46.5			8.76
	Fluridone	85.4	63.7 66.1			3.74
	Hydrocodone	109	67.5 71.6			5.84
	Imazapyr	103	91.0 89.8			0.809
	Imidacloprid	113	102 103			0.974
	Linuron	101	78.7 77.8			1.24
	MCP	109	65.8 60.1			9.09
	Primidone	103	60.5 55.6			8.44
	Pyraclostrobin	83.4	69.1 69.7			0.775
	Sucralose	109	97.2 99.2			1.94
	Triclopyr	109	77.8 78.2			0.510
SM 2120 B	Color (true)				1.81	
SM 2320 B-97	Total Alkalinity	102			4.30	
SM 2540 C-97	TDS				0.378	
SM 4500 F-C-97	Fluoride	95.6	95.2 93.6			1.45
SM 5310 B-00	Organic Carbon	94.1	96.4 95.0			1.26

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1991796
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1991796
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1991796

Reference Method Descriptions

Method / DoH Cert #	Description	<u>Associated Samples</u>
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1991797
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1991797
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1991797
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1991797
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1991798
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	1991822
SM 2120 B / E31780	True Color measured at 450 nm	1991796
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1991796
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1991796
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	1991796
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1991796
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1991797

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	05/10/2018			05/10/2018 16:14	William L. Brown IV	1991796
EPA 300.0 Rev. 2.1	05/10/2018			05/11/2018 21:16	Lipi Saha	1991796
EPA 350.1 Rev. 2.0	05/10/2018			05/14/2018 13:04	Adrian Shelby	1991797
EPA 351.2 Rev. 2.0	05/10/2018	05/23/2018 16:00	Adrian Shelby	05/24/2018 13:32	Joseph Suarez	1991797
EPA 353.2 Rev. 2.0	05/10/2018			05/14/2018 13:43	Lauren Bottorf	1991797
EPA 365.1 Rev. 2.0	05/10/2018	05/11/2018 13:15	Sima Feizi	05/16/2018 13:06	Beverly Y. Sanders	1991797
EPA 365.1 Rev. 2.0 dissolved	05/10/2018			05/10/2018 15:57	Julia Storbeck	1991798
EPA 8321B	05/10/2018	05/11/2018 13:00	Hoor Shaik	05/12/2018 09:17	Juyoung Kim	1991822
	05/10/2018	05/11/2018 13:00	Hoor Shaik	05/16/2018 09:50	Juyoung Kim	1991822
	05/10/2018	05/11/2018 13:00	Hoor Shaik	06/01/2018 14:38	Juyoung Kim	1991822
	05/10/2018	05/15/2018 16:00	Hoor Shaik	05/15/2018 20:04	Juyoung Kim	1991822
SM 2120 B	05/10/2018			05/10/2018 14:16	Tanya Welborn	1991796
SM 2320 B-97	05/10/2018			05/15/2018 22:02	Dale L. Simmons	1991796
SM 2540 C-97	05/10/2018			05/11/2018 17:30	William L. Brown IV	1991796
SM 2540 D-97	05/10/2018			05/11/2018 17:30	William L. Brown IV	1991796
SM 4500 F-C-97	05/10/2018			05/15/2018 22:02	Dale L. Simmons	1991796
SM 5310 B-00	05/10/2018			05/14/2018 21:15	Megan Treadwell	1991797