

Chemical Analysis Report

NW-DIST-2018-07-10-01

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

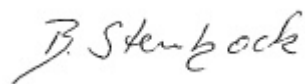
Event Description: **PENS/CANT RUN**
Request ID: **RQ-2018-07-23-19**
Customer: **NW-DIST**
Project ID: **SMP**

Send Reports to:
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160 Government Center
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Certified by: Dr. rer. nat. Bettina Steinbock, Environmental Administrator

Date Certified: 20-JUL-2018 14:38



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: Carpenters Creek upstream of Ninth Ave

Collection Date/Time: 07/09/2018 11:10

Field ID: G4NW0415

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2005364	EPA 180.1 Rev. 2.0	Turbidity	2.1		NTU	P348173	
	EPA 300.0 Rev. 2.1	Chloride	7.6		mg Cl/L	P348521	
		Sulfate	4.6		mg SO4/L	P348527	
	SM 2120 B	Color (true)	18		PCU	P348166	
	SM 2320 B-97	Total Alkalinity	22		mg CaCO3/L	P348403	
	SM 2540 C-97	TDS	56		mg/L	P348552	
	SM 2540 D-97	TSS	3	I	mg/L	P348558	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P348407	
2005365	EPA 350.1 Rev. 2.0	Ammonia-N	0.018		mg N/L	P348358	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.26		mg N/L	P348274	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.98		mg N/L	P348251	
	EPA 365.1 Rev. 2.0	Total-P	0.007		mg P/L	P348188	
	SM 5310 B-00	Organic Carbon	2.1		mg C/L	P348455	
2005366	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.006	I	mg P/L	P348229	MS
2005378	EPA 8321B	2,4-D	0.0025	IJ	ug/L	P348199	MS
		Sucralose**	0.13		ug/L	P348129	
		Bentazon	8.0E-04	U	ug/L	P348199	
		MCP	0.0020	UJ	ug/L	P348199	MS
		Triclopyr**	0.0040	U	ug/L	P348199	
		Imidacloprid	0.036		ug/L	P348199	
		Diuron	0.011		ug/L	P348199	
		Pyraclostrobin**	0.0020	U	ug/L	P348199	
		Primidone**	0.0040	U	ug/L	P348199	
		Linuron	0.0040	U	ug/L	P348199	
		Acetaminophen**	0.0080	U	ug/L	P348199	
		Fenuron	0.016	U	ug/L	P348199	
		Imazapyr**	0.0088	I	ug/L	P348199	
		Carbamazepine**	0.0015	I	ug/L	P348199	
		Fluridone**	4.0E-04	U	ug/L	P348199	
		Hydrocodone**	8.0E-04	U	ug/L	P348199	
		Naproxen**	0.0080	U	ug/L	P348199	
		Ibuprofen**	0.020	U	ug/L	P348199	

Ref. Method and Comment:

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

EPA 8321B: Refer to the narrative for an explanation of QC Codes.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P348173

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P348521

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P348527

Component	Result	Code	Units
Sulfate	0.20	U	mg SO ₄ /L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P348358

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P348274

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P348251

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: P348188

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P348229

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

Reference Method: EPA 8321B
Batch ID: P348129

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B
Batch ID: P348199

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
Ibuprofen	0.020	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
Naproxen	0.0080	U	ug/L
Primidone	0.0040	U	ug/L
Pyraclostrobin	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: SM 2120 B
Batch ID: P348166

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P348403

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

Reference Method: SM 2540 C-97
Batch ID: P348552

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P348558

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P348407

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P348455

Component	Result	Code	Units
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Quality Assurance Report

Method Blank Results

Reference Method: SM 5310 B-00
Batch ID: P348455

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: P348521

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	95.1		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P348527

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	92.7		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P348358

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P348274

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P348251

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P348188

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P348229

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	91.6		P	90 - 110

Reference Method: EPA 8321B
Batch ID: P348129

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	102		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P348199

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	111		P	40 - 150
Acetaminophen	96.2		P	30 - 150
Bentazon	102		P	30 - 150
Carbamazepine	88.1		P	40 - 150

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P348199

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Diuron	79.2		P	40 - 150
Fenuron	108		P	40 - 150
Fluridone	96.1		P	40 - 150
Hydrocodone	95.5		P	40 - 150
Ibuprofen	78.6		P	40 - 150
Imazapyr	106		P	40 - 150
Imidacloprid	107		P	40 - 160
Linuron	91.7		P	40 - 150
MCPP	110		P	40 - 150
Naproxen	110		P	40 - 150
Primidone	99.7		P	40 - 150
Pyraclostrobin	83.0		P	40 - 150
Triclopyr	110		P	40 - 150

Reference Method: SM 2120 B
Batch ID: P348166

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	97.5		P	85 - 115

Reference Method: SM 2320 B-97
Batch ID: P348403

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	104		P	98 - 107

Reference Method: SM 4500 F-C-97
Batch ID: P348407

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.0		P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P348455

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.8		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P348521

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2005364	Chloride	92.2	96.0	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P348527

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2005364	Sulfate	90.0	94.6	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P348358

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2005365	Ammonia-N	102	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P348274

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2005365	Kjeldahl Nitrogen	93.1	90.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P348251

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2005349	NO2NO3-N	101	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P348188

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2005365	Total-P	91.6	91.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P348229

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2005304	O-Phosphate-P	88.1	89.4	F/F	90 - 110

Reference Method: EPA 8321B
Batch ID: P348129

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2005568	Sucralose	92.9	97.1	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P348199

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2005378	2,4-D	151	162	F/F	40 - 150
2005378	Acetaminophen	99.2	83.1	P/P	30 - 150
2005378	Bentazon	84.7	87.2	P/P	30 - 150
2005378	Carbamazepine	79.1	69.1	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P348199

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2005378	Diuron	66.1	55.9	P/P	40 - 150
2005378	Fenuron	96.6	81.8	P/P	40 - 150
2005378	Fluridone	88.4	76.2	P/P	40 - 150
2005378	Hydrocodone	102	84.9	P/P	40 - 150
2005378	Ibuprofen	67.2	81.6	P/P	40 - 150
2005378	Imazapyr	119	95.9	P/P	40 - 150
2005378	Imidacloprid	145	116	P/P	40 - 160
2005378	Linuron	84.6	74.4	P/P	40 - 150
2005378	MCP	145	152	P/F	40 - 150
2005378	Naproxen	93.2	91.2	P/P	40 - 150
2005378	Primidone	100	88.9	P/P	40 - 150
2005378	Pyraclostrobin	86.6	71.0	P/P	40 - 150
2005378	Triclopyr	135	149	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P348407

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2005837	Fluoride	96.8	96.8	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P348455

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2005301	Organic Carbon	98.6	95.5	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P348173

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2005281	Turbidity	11.2	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P348521

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2005364	Chloride	3.21	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P348527

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2005364	Sulfate	4.27	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P348358

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2005365	Ammonia-N	0.378	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P348274

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2005365	Kjeldahl Nitrogen	2.23	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P348251

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2005349	NO2NO3-N	0.985	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P348188

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2005365	Total-P	0.398	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P348229

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2005304	O-Phosphate-P	1.37	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P348129

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2005568	Sucralose	4.29	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P348199

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2005378	2,4-D	7.28	Spike	P	0 - 30
2005378	Acetaminophen	17.7	Spike	P	0 - 30
2005378	Bentazon	2.92	Spike	P	0 - 30
2005378	Carbamazepine	13.2	Spike	P	0 - 30
2005378	Diuron	13.6	Spike	P	0 - 30
2005378	Fenuron	16.6	Spike	P	0 - 30
2005378	Fluridone	14.9	Spike	P	0 - 30
2005378	Hydrocodone	18.3	Spike	P	0 - 30
2005378	Ibuprofen	19.3	Spike	P	0 - 30
2005378	Imazapyr	19.8	Spike	P	0 - 30
2005378	Imidacloprid	16.8	Spike	P	0 - 30
2005378	Linuron	12.8	Spike	P	0 - 30
2005378	MCP	4.38	Spike	P	0 - 30
2005378	Naproxen	2.12	Spike	P	0 - 30
2005378	Primidone	11.9	Spike	P	0 - 30
2005378	Pyraclostrobin	19.8	Spike	P	0 - 30
2005378	Triclopyr	9.99	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P348166

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2005347	Color (true)	0.173	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P348403

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2005837	Total Alkalinity	0.190	Sample	P	0 - 1.6

Reference Method: SM 2540 C-97
Batch ID: P348552

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2005408	TDS	6.77	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P348407

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

Reference Method: SM 4500 F-C-97
Batch ID: P348407

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2005837	Fluoride	0.0	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
Batch ID: P348455

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2005301	Organic Carbon	2.31	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: 2005378

Field Sample ID: G4NW0415

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	134	P	30 - 160
EPA 8321B	Acetaminophen-d4	98.9	P	30 - 160
EPA 8321B	Carbamazepine-d10	88.0	P	30 - 160
EPA 8321B	Diuron-d6	72.7	P	30 - 160
EPA 8321B	Ibuprofen-d3	96.6	P	40 - 160
EPA 8321B	Primidone-d5	113	P	30 - 160
EPA 8321B	Sucralose-d6	97.9	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: SM 2120 B
Run ID: A85119
Included Lab Sample IDs: 2005364

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	97.1	99.9	P/P	90 - 115

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A85120
Included Lab Sample IDs: 2005364

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	98.0	98.5	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A85137
Included Lab Sample IDs: 2005366

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	91.6	93.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A85150
Included Lab Sample IDs: 2005365

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

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A85187
Included Lab Sample IDs: 2005364

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	95.2	97.9	P/P	90 - 110
Sulfate	93.7	95.9	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A85188
Included Lab Sample IDs: 2005365

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

Reference Method: EPA 8321B
Run ID: A85199
Included Lab Sample IDs: 2005378

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetaminophen	113	112	P/P	60 - 150
Carbamazepine	115	115	P/P	60 - 150
Diuron	103	100	P/P	60 - 150
Fenuron	107	106	P/P	60 - 150
Fluridone	114	114	P/P	60 - 160
Hydrocodone	109	109	P/P	60 - 150
Imazapyr	98.8	118	P/P	50 - 150
Imidacloprid	103	104	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A85199
Included Lab Sample IDs: 2005378

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Linuron	115	110	P/P	60 - 150
Primidone	99.9	98.5	P/P	60 - 150
Pyraclostrobin	104	104	P/P	60 - 150

Reference Method: SM 2320 B-97
Run ID: A85217
Included Lab Sample IDs: 2005364

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	104	101	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Run ID: A85217
Included Lab Sample IDs: 2005364

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

Reference Method: EPA 8321B
Run ID: A85232
Included Lab Sample IDs: 2005378

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	99.3	98.6	P/P	50 - 150
Bentazon	129	136	P/P	50 - 150
Ibuprofen	129	95.4	P/P	50 - 150
MCPD	95.7	97.4	P/P	50 - 150
Naproxen	81.2	73.6	P/P	60 - 150
Triclopyr	94.1	102	P/P	50 - 160

Reference Method: SM 5310 B-00
Run ID: A85235
Included Lab Sample IDs: 2005365

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.8	97.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A85238
Included Lab Sample IDs: 2005365

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

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A85284
Included Lab Sample IDs: 2005365

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	105	101	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A85319

Included Lab Sample IDs: 2005378

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	97.1	140	P/P	60 - 160

* 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	MS
						SMP	
EPA 180.1 Rev. 2.0	Turbidity					11.2	
EPA 300.0 Rev. 2.1	Chloride	95.1	92.2	96.0			3.21
	Sulfate	92.7	90.0	94.6			4.27
EPA 350.1 Rev. 2.0	Ammonia-N	105	102	101			0.378
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	105	93.1	90.5			2.23
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	99.5	101	102			0.985
EPA 365.1 Rev. 2.0	Total-P	96.4	91.6	91.2			0.398
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	91.6	88.1	89.4			1.37
EPA 8321B	2,4-D	111	151	162			7.28
	Acetaminophen	96.2	99.2	83.1			17.7
	Bentazon	102	84.7	87.2			2.92
	Carbamazepine	88.1	79.1	69.1			13.2
	Diuron	79.2	66.1	55.9			13.6
	Fenuron	108	96.6	81.8			16.6
	Fluridone	96.1	88.4	76.2			14.9
	Hydrocodone	95.5	102	84.9			18.3
	Ibuprofen	78.6	67.2	81.6			19.3
	Imazapyr	106	119	95.9			19.8
	Imidacloprid	107	145	116			16.8
	Linuron	91.7	84.6	74.4			12.8
	MCPP	110	145	152			4.38
	Naproxen	110	93.2	91.2			2.12
	Primidone	99.7	100	88.9			11.9
	Pyraclostrobin	83.0	86.6	71.0			19.8
	Sucralose	102	92.9	97.1			4.29
	Triclopyr	110	135	149			9.99
SM 2120 B	Color (true)	97.5				0.173	
SM 2320 B-97	Total Alkalinity	104				0.190	
SM 2540 C-97	TDS					6.77	
SM 4500 F-C-97	Fluoride	98.0	96.8	96.8			0.0
SM 5310 B-00	Organic Carbon	97.8	98.6	95.5			2.31

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2005364
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2005364
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2005364
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2005365
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2005365
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2005365
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2005365
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2005366
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2005378
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2005378
SM 2120 B / E31780	True Color measured at 450 nm	2005364
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2005364

Reference Method Descriptions

Method / DoH Cert #	Description	<u>Associated Samples</u>
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2005364
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2005364
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2005364
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2005365

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	07/10/2018			07/10/2018 17:42	William L. Brown IV	2005364
EPA 300.0 Rev. 2.1	07/10/2018			07/12/2018 02:59	Lipi Saha	2005364
EPA 350.1 Rev. 2.0	07/10/2018			07/12/2018 13:14	Ping Hua	2005365
EPA 351.2 Rev. 2.0	07/10/2018	07/12/2018 10:00	Adrian Shelby	07/17/2018 13:51	Joseph Suarez	2005365
EPA 353.2 Rev. 2.0	07/10/2018			07/11/2018 14:03	Lauren Bottorf	2005365
EPA 365.1 Rev. 2.0	07/10/2018	07/11/2018 12:25	Sima Feizi	07/12/2018 10:06	Beverly Y. Sanders	2005365
EPA 365.1 Rev. 2.0 dissolved	07/10/2018			07/10/2018 23:04	Anthony C. Onicha	2005366
EPA 8321B	07/10/2018	07/11/2018 14:00	Hoor Shaik	07/12/2018 20:24	Juyoung Kim	2005378
	07/10/2018	07/11/2018 14:00	Hoor Shaik	07/14/2018 01:12	Juyoung Kim	2005378
	07/10/2018	07/16/2018 10:00	Mohammad Ghaffari	07/16/2018 16:15	Mohammad Ghaffari	2005378
SM 2120 B	07/10/2018			07/10/2018 16:44	Tanya Welborn	2005364
SM 2320 B-97	07/10/2018			07/13/2018 02:42	Dale L. Simmons	2005364
SM 2540 C-97	07/10/2018			07/11/2018 14:46	Yijie Li	2005364
SM 2540 D-97	07/10/2018			07/11/2018 14:46	Yijie Li	2005364
SM 4500 F-C-97	07/10/2018			07/13/2018 02:42	Dale L. Simmons	2005364
SM 5310 B-00	07/10/2018			07/13/2018 08:09	Megan Treadwell	2005365