

Chemical Analysis Report

CEN-DIST-2018-01-09-02

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

Event Description: **Shaw / Marie / Chain**
Request ID: **RQ-2018-01-08-28**
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
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Certified by: Colin Wright, Program Administrator

Date Certified: 26-JAN-2018 16:24

A handwritten signature in black ink, appearing to read "Colin Wright", is displayed on a light gray rectangular 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: Shaw Lake @ Center of North Lobe (29061)

Collection Date/Time: 01/08/2018 12:15

Field ID: G2CE0127

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1958022	EPA 180.1 Rev. 2.0	Turbidity	0.50		NTU	P337971	
	EPA 300.0 Rev. 2.1	Chloride	14		mg Cl/L	P338150	
		Sulfate	6.4		mg SO4/L	P338153	
	SM 2120 B	Color (true)	660		PCU	P337958	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P338229	
	SM 2540 C-97	TDS	132		mg/L	P338242	
	SM 2540 D-97	TSS	3	I	mg/L	P338291	
	SM 4500 F-C-97	Fluoride	0.042	I	mg F/L	P338237	
1958024	EPA 350.1 Rev. 2.0	Ammonia-N	0.11		mg N/L	P338304	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.8		mg N/L	P338263	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.031		mg N/L	P338018	
	EPA 365.1 Rev. 2.0	Total-P	0.012		mg P/L	P338084	
	SM 5310 B-00	Organic Carbon	48		mg C/L	P338259	
1958026	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P337993	

Ref. Method and Comment:

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

EPA 350.1 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

SM 5310 B-00: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Lake Marie @ Center (2951)

Collection Date/Time: 01/08/2018 13:35

Field ID: G2CE0084

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1958023	EPA 180.1 Rev. 2.0	Turbidity	1.5	A	NTU	P337971	
	EPA 300.0 Rev. 2.1	Chloride	58		mg Cl/L	P338150	
		Sulfate	4.9		mg SO4/L	P338153	
	SM 2120 B	Color (true)	45		PCU	P337958	
	SM 2320 B-97	Total Alkalinity	52	A	mg CaCO3/L	P338229	
	SM 2540 C-97	TDS	185	A	mg/L	P338242	
	SM 2540 D-97	TSS	2	IA	mg/L	P338291	
	SM 4500 F-C-97	Fluoride	0.11		mg F/L	P338237	
1958025	EPA 350.1 Rev. 2.0	Ammonia-N	0.030		mg N/L	P338304	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.98		mg N/L	P338078	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.033		mg N/L	P338018	
	EPA 365.1 Rev. 2.0	Total-P	0.021		mg P/L	P338084	
	SM 5310 B-00	Organic Carbon	12		mg C/L	P338259	
1958027	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P337993	

Ref. Method and Comment:

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

EPA 350.1 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

SM 5310 B-00: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Lake Marie @ Center (2951)

Collection Date/Time: 01/08/2018 13:35

Field ID: G2CE0084

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
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Field ID: G2CE0084

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1958048	EPA 8321B	Sucralose**	1.2		ug/L	P338238	
	USGS O-2060-01	2,4-D	0.017		ug/L	P337928	
		Diuron	0.0020	U	ug/L	P337928	
		Fenuron	0.0080	U	ug/L	P337928	
		Imidacloprid	0.0030	I	ug/L	P337928	MS
		Bentazon	0.0026	I	ug/L	P337928	
		Linuron	0.0040	U	ug/L	P337928	
		Acetaminophen**	0.0080	U	ug/L	P337928	
		MCP	0.0020	U	ug/L	P337928	
		Carbamazepine**	4.1E-04	I	ug/L	P337928	
		Triclopyr**	0.0040	U	ug/L	P337928	
		Primidone**	0.0040	U	ug/L	P337928	
		Fluridone**	0.44		ug/L	P337928	

Quality Assurance Report
Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P337971

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P338150

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P338153

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P338304

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P338078

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P338263

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P338018

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P338084

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P337993

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

Reference Method: EPA 8321B
Batch ID: P338238

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: SM 2120 B
Batch ID: P337958

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P338229

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

Reference Method: SM 2540 C-97
Batch ID: P338242

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P338291

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P338237

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Quality Assurance Report Method Blank Results

Reference Method: SM 5310 B-00
Batch ID: P338259

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

Reference Method: USGS O-2060-01
Batch ID: P337928

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	0.0080	U	ug/L
Fluridone	4.0E-04	U	ug/L
Imidacloprid	0.0020	U	ug/L
Linuron	0.0040	U	ug/L
MCP	0.0020	U	ug/L
Primidone	0.0040	U	ug/L
Triclopyr	0.0040	U	ug/L

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P338150

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P338153

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P338304

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: P338078

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P338263

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P338018

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: P338084

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P337993

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	99.2		P	90 - 110

Reference Method: EPA 8321B
Batch ID: P338238

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

Reference Method: SM 2320 B-97
Batch ID: P338229

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	95 - 108

Reference Method: SM 4500 F-C-97
Batch ID: P338237

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.0		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P338259

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	99.6		P	85 - 115

Reference Method: USGS O-2060-01
Batch ID: P337928

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	103		P	40 - 150
Acetaminophen	85.8		P	30 - 150
Bentazon	96.7		P	30 - 150
Carbamazepine	102		P	40 - 150
Diuron	82.9		P	40 - 150
Fenuron	112		P	40 - 150
Fluridone	115		P	40 - 150
Imidacloprid	102		P	40 - 160
Linuron	93.5		P	40 - 150
MCP	95.9		P	40 - 150

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: USGS O-2060-01
Batch ID: P337928

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Primidone	95.0		P	40 - 150
Triclopyr	95.2		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P338150

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1958068	Chloride	92.8		P	90 - 110
1958192	Chloride	97.0		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P338153

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1958068	Sulfate	92.2		P	90 - 110
1958192	Sulfate	93.6		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P338078

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1958025	Kjeldahl Nitrogen	103	98.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P338263

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1958893	Kjeldahl Nitrogen	103	91.7	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P338018

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1958025	NO2NO3-N	102	99.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P338084

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1957970	Total-P	99.6	96.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P337993

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1957908	O-Phosphate-P	94.9	96.8	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P338238

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1958065	Sucralose	96.1	93.6	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P338237

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1958023	Fluoride	98.5	98.5	P/P	91 - 105

Reference Method: USGS O-2060-01
Batch ID: P337928

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1957757	2,4-D	96.1	98.9	P/P	40 - 150
1957757	Acetaminophen	125	141	P/P	30 - 150
1957757	Bentazon	92.7	99.2	P/P	30 - 150
1957757	Carbamazepine	97.9	115	P/P	40 - 150
1957757	Diuron	84.2	98.0	P/P	40 - 150
1957757	Fenuron	73.5	85.2	P/P	40 - 150
1957757	Fluridone	80.9	95.1	P/P	40 - 150
1957757	Imidacloprid	164	194	F/F	40 - 160
1957757	Linuron	89.8	100	P/P	40 - 150
1957757	MCP	78.5	85.6	P/P	40 - 150
1957757	Primidone	79.2	90.5	P/P	40 - 150
1957757	Triclopyr	76.9	79.8	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P337971

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1958023	Turbidity	2.06	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P338150

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1958192	Chloride	4.36	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P338153

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1958192	Sulfate	3.71	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P338304

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1958024	Ammonia-N	2.21	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P338078

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1958025	Kjeldahl Nitrogen	2.42	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P338263

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1958893	Kjeldahl Nitrogen	9.68	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P338018

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1958025	NO2NO3-N	2.12	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P338084

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1957970	Total-P	3.25	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P337993

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1957908	O-Phosphate-P	1.31	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P338238

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1958065	Sucralose	2.51	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P337958

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1957944	Color (true)	3.75	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2320 B-97
Batch ID: P338229

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1958023	Total Alkalinity	0.150	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P338242

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1958023	TDS	5.41	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P338237

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1958023	Fluoride	0.0	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P338259

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1957876	Organic Carbon	0.0811	Spike	P	0 - 20

Reference Method: USGS O-2060-01
Batch ID: P337928

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1957757	2,4-D	2.87	Spike	P	0 - 30
1957757	Acetaminophen	12.4	Spike	P	0 - 30
1957757	Bentazon	6.73	Spike	P	0 - 30
1957757	Carbamazepine	15.8	Spike	P	0 - 30
1957757	Diuron	15.1	Spike	P	0 - 30
1957757	Fenuron	14.7	Spike	P	0 - 30
1957757	Fluridone	16.1	Spike	P	0 - 30
1957757	Imidacloprid	16.6	Spike	P	0 - 30
1957757	Linuron	11.1	Spike	P	0 - 30
1957757	MCPP	8.71	Spike	P	0 - 30
1957757	Primidone	13.3	Spike	P	0 - 30
1957757	Triclopyr	3.69	Spike	P	0 - 30

* 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

Quality Assurance Report Surrogates

Lab Sample ID: 1958048
Field Sample ID: G2CE0084

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	118	P	30 - 160
EPA 8321B	Carbamazepine-d10	91.4	P	30 - 160
EPA 8321B	Diuron-d6	82.1	P	30 - 160
EPA 8321B	Primidone-d5	87.3	P	30 - 160
EPA 8321B	Sucralose-d6	104	P	40 - 160
USGS O-2060-01	2,4-D-d3	74.8	P	30 - 160
USGS O-2060-01	Acetaminophen-d4	118	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	91.4	P	30 - 160
USGS O-2060-01	Diuron-d6	82.1	P	30 - 160
USGS O-2060-01	Primidone-d5	87.3	P	30 - 160
USGS O-2060-01	Sucralose-d6	104	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: SM 2120 B
Run ID: A81350
Included Lab Sample IDs: 1958022, 1958023

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	102	97.5	P/P	85 - 115
Color (true)	103	103	P/P	85 - 115

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A81353
Included Lab Sample IDs: 1958022, 1958023

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: A81364
Included Lab Sample IDs: 1958026, 1958027

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.8	98.7	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A81373
Included Lab Sample IDs: 1958024, 1958025

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	99.5	98.0	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A81397
Included Lab Sample IDs: 1958022, 1958023

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	93.7	99.7	P/P	90 - 110
Sulfate	94.7	101	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A81434

Included Lab Sample IDs: 1958025

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A81437

Included Lab Sample IDs: 1958024, 1958025

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	100	99.8	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A81452

Included Lab Sample IDs: 1958022, 1958023

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	101	99.5	P/P	90 - 110
Total Alkalinity	99.5	102	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A81452

Included Lab Sample IDs: 1958022, 1958023

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

Reference Method: SM 5310 B-00

Run ID: A81463

Included Lab Sample IDs: 1958024, 1958025

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.6	98.0	P/P	90 - 110
Organic Carbon	97.8	97.6	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A81474

Included Lab Sample IDs: 1958024, 1958025

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

Reference Method: EPA 8321B

Run ID: A81482

Included Lab Sample IDs: 1958048

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	95.2	93.1	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A81519

Included Lab Sample IDs: 1958024

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	98.9	105	P/P	90 - 110

Reference Method: USGS O-2060-01

Run ID: A81530

Included Lab Sample IDs: 1958048

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetaminophen	103	101	P/P	60 - 150
Carbamazepine	101	111	P/P	60 - 150
Diuron	97.6	103	P/P	60 - 150
Fenuron	101	105	P/P	60 - 150
Imidacloprid	95.2	99.7	P/P	60 - 150
Linuron	101	108	P/P	60 - 150
Primidone	107	85.9	P/P	60 - 150

Reference Method: USGS O-2060-01

Run ID: A81531

Included Lab Sample IDs: 1958048

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	93.9	99.2	P/P	50 - 150
Bentazon	96.3	95.5	P/P	50 - 150
Fluridone	106	107	P/P	60 - 160
MCPP	91.2	86.6	P/P	50 - 150
Triclopyr	95.9	100	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				2.06	
EPA 300.0 Rev. 2.1	Chloride	99.1	97.0 92.8		4.36	
	Sulfate	99.0	93.6 92.2		3.71	
EPA 350.1 Rev. 2.0	Ammonia-N	101				2.21
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	101	103 98.6			2.42
	Kjeldahl Nitrogen	100	103 91.7			9.68
EPA 353.2 Rev. 2.0	NO2NO3-N	102	102 99.8			2.12
EPA 365.1 Rev. 2.0	Total-P	100	99.6 96.4			3.25
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.2	94.9 96.8			1.31
EPA 8321B	Sucralose	86.4	96.1 93.6			2.51
SM 2120 B	Color (true)				3.75	
SM 2320 B-97	Total Alkalinity	102			0.150	
SM 2540 C-97	TDS				5.41	
SM 4500 F-C-97	Fluoride	98.0	98.5 98.5			0.0
SM 5310 B-00	Organic Carbon	99.6				0.0811

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision LCS	SMP	MS
USGS O-2060-01	2,4-D	103	96.1	98.9			2.87
	Acetaminophen	85.8	125	141			12.4
	Bentazon	96.7	92.7	99.2			6.73
	Carbamazepine	102	97.9	115			15.8
	Diuron	82.9	84.2	98.0			15.1
	Fenuron	112	73.5	85.2			14.7
	Fluridone	115	80.9	95.1			16.1
	Imidacloprid	102	164	194			16.6
	Linuron	93.5	89.8	100			11.1
	MCP	95.9	78.5	85.6			8.71
	Primidone	95.0	79.2	90.5			13.3
	Triclopyr	95.2	76.9	79.8			3.69

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1958022, 1958023
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1958022, 1958023
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1958022, 1958023
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1958024, 1958025
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1958024, 1958025
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1958024, 1958025
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1958024, 1958025
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1958026, 1958027
EPA 8321B / E31780	Analysis of sucralose in water matrices by HPLC/MS/MS	1958048
SM 2120 B / E31780	True Color measured at 450 nm	1958022, 1958023
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1958022, 1958023
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1958022, 1958023
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1958022, 1958023
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1958022, 1958023
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1958024, 1958025
USGS O-2060-01 / E31780	Chlorinated (phenoxy acid) herbicides in water matrices by HPLC/MS/MS	1958048
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1958048

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	01/09/2018			01/09/2018 15:49	DeAsia Armster	1958022, 1958023
EPA 300.0 Rev. 2.1	01/09/2018			01/12/2018	Julia Storbeck	1958022, 1958023
EPA 350.1 Rev. 2.0	01/09/2018			01/16/2018	Sofia Elnemr	1958024, 1958025
EPA 351.2 Rev. 2.0	01/09/2018	01/11/2018	Adrian Shelby	01/12/2018	Joseph Suarez	1958025
	01/09/2018	01/16/2018	Adrian Shelby	01/18/2018	Joseph Suarez	1958024
EPA 353.2 Rev. 2.0	01/09/2018			01/10/2018	Beverly Y. Sanders	1958024, 1958025
EPA 365.1 Rev. 2.0	01/09/2018	01/11/2018	Sima Feizi	01/12/2018	Beverly Y. Sanders	1958024, 1958025
EPA 365.1 Rev. 2.0 dissolved	01/09/2018			01/09/2018 15:20	Megan Treadwell	1958026
	01/09/2018			01/09/2018 15:21	Megan Treadwell	1958027
EPA 8321B	01/09/2018	01/16/2018	Juyoung Kim	01/16/2018	Juyoung Kim	1958048
SM 2120 B	01/09/2018			01/09/2018 15:01	Tanya Welborn	1958023
	01/09/2018			01/09/2018 15:20	Tanya Welborn	1958022
SM 2320 B-97	01/09/2018			01/13/2018	Dale L. Simmons	1958022, 1958023
SM 2540 C-97	01/09/2018			01/10/2018	Yijie Li	1958022, 1958023
SM 2540 D-97	01/09/2018			01/10/2018	Yijie Li	1958022, 1958023
SM 4500 F-C-97	01/09/2018			01/13/2018	Dale L. Simmons	1958022, 1958023
SM 5310 B-00	01/09/2018			01/11/2018	Megan Treadwell	1958024, 1958025
USGS O-2060-01	01/09/2018	01/10/2018	Hoor Shaik	01/11/2018	Julie Michelle Frank	1958048
	01/09/2018	01/10/2018	Hoor Shaik	01/16/2018	Julie Michelle Frank	1958048
	01/09/2018	01/10/2018	Hoor Shaik	01/17/2018	Julie Michelle Frank	1958048