

Chemical Analysis Report

NE-DIST-2018-02-15-01

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

Event Description: **Davis_CM_2018**
Request ID: **RQ-2018-02-12-26**
Customer: **NE-DIST**
Project ID: **SMP**

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Certified by: Thekkekalathil Chandrasekhar, Chemist Administrator Date Certified: 08-MAR-2018 10:03



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: MCCOYS CR AT LELAND ST

Collection Date/Time: 02/14/2018 10:05

Field ID: 20030725

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1968141	EPA 180.1 Rev. 2.0	Turbidity	5.2	A	NTU	P340038	
	EPA 300.0 Rev. 2.1	Chloride	22		mg Cl/L	P340321	
		Sulfate	43		mg SO4/L	P340323	
	SM 2120 B	Color (true)	31		PCU	P340057	
	SM 2320 B-97	Total Alkalinity	170		mg CaCO3/L	P340528	
	SM 2540 C-97	TDS	298		mg/L	P340576	
	SM 2540 D-97	TSS	2	I	mg/L	P340248	
	SM 4500 F-C-97	Fluoride	0.19		mg F/L	P340532	
1968142	EPA 350.1 Rev. 2.0	Ammonia-N	0.098		mg N/L	P340677	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.57		mg N/L	P340264	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.22		mg N/L	P340422	
	EPA 365.1 Rev. 2.0	Total-P	0.090		mg P/L	P340414	
	SM 5310 B-00	Organic Carbon	7.6		mg C/L	P340501	
1968143	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.028		mg P/L	P340068	

Ref. Method and Comment:

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

EPA 365.1 Rev. 2.0: Total-P: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: MCCOYS CR AT LELAND ST

Collection Date/Time: 02/14/2018 10:05

Field ID: 20030725

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1968150	EPA 8321B	2,4-D	0.0073	I	ug/L	P340164	
		Sucralose**	0.17		ug/L	P340023	
		Bentazon	0.0099		ug/L	P340164	MS
		MCP	0.0064	I	ug/L	P340164	MS
		Triclopyr**	0.0040	U	ug/L	P340164	
		Imidacloprid	0.17		ug/L	P340164	
		Diuron	0.025		ug/L	P340164	
		Primidone**	0.0040	U	ug/L	P340164	
		Linuron	0.0040	U	ug/L	P340164	
		Acetaminophen**	0.014	I	ug/L	P340164	
		Fenuron	0.0080	U	ug/L	P340164	
		Carbamazepine**	7.3E-04	I	ug/L	P340164	
		Fluridone**	8.0E-04	U	ug/L	P340164	

Ref. Method and Comment:

EPA 8321B: MS accuracy and precision for fluridone could not be assessed due to high concentration of parameter in the spiked sample.

Quality Assurance Report

Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P340038

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: P340321

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P340323

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P340677

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P340264

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P340422

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P340414

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P340068

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

Reference Method: EPA 8321B
Batch ID: P340023

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: EPA 8321B
Batch ID: P340164

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B
Batch ID: P340164

Component	Result	Code	Units
Diuron	0.0020	U	ug/L
Fenuron	0.0080	U	ug/L
Fluridone	8.0E-04	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
Triclopyr	0.0040	U	ug/L

Reference Method: SM 2120 B
Batch ID: P340057

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P340528

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

Reference Method: SM 2540 C-97
Batch ID: P340576

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P340248

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P340532

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P340501

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

Quality Assurance Report Laboratory Control Sample Accuracy

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P340321

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	91.2		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P340323

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	90.1		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P340677

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P340264

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P340422

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	104		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P340414

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	107		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P340068

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

Reference Method: EPA 8321B
Batch ID: P340023

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	97.4		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P340164

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	89.1		P	40 - 150
Acetaminophen	113		P	30 - 150
Bentazon	128		P	30 - 150
Carbamazepine	104		P	40 - 150

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P340164

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Diuron	93.0		P	40 - 150
Fenuron	120		P	40 - 150
Fluridone	89.6		P	40 - 150
Imidacloprid	105		P	40 - 160
Linuron	100		P	40 - 150
MCPP	75.6		P	40 - 150
Primidone	120		P	40 - 150
Triclopyr	77.8		P	40 - 150

Reference Method: SM 2320 B-97
Batch ID: P340528

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.4		P	95 - 108

Reference Method: SM 4500 F-C-97
Batch ID: P340532

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.3		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P340501

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	100		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P340321

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1967813	Chloride	95.5		P	90 - 110
1968067	Chloride	93.2		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P340323

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1967813	Sulfate	91.3		P	90 - 110
1968067	Sulfate	93.5		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P340677

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1968136	Ammonia-N	98.2	94.8	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P340264

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1968139	Kjeldahl Nitrogen	95.7	96.9	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P340422

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1968136	NO2NO3-N	104	105	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P340068

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1968143	O-Phosphate-P	97.6	98.2	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P340023

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1967901	Sucralose	100	96.9	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P340164

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1968092	2,4-D	58.9	69.4	P/P	40 - 150
1968092	Acetaminophen	119	114	P/P	30 - 150
1968092	Bentazon	22.8	25.4	F/F	30 - 150
1968092	Carbamazepine	90.3	88.6	P/P	40 - 150
1968092	Diuron	72.4	66.6	P/P	40 - 150
1968092	Fenuron	95.9	92.7	P/P	40 - 150
1968092	Imidacloprid	106	102	P/P	40 - 160
1968092	Linuron	81.2	76.1	P/P	40 - 150
1968092	MCP	31.4	29.8	F/F	40 - 150
1968092	Primidone	110	103	P/P	40 - 150
1968092	Triclopyr	51.1	54.0	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P340532

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1968135	Fluoride	95.1	95.7	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P340501

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1968136	Organic Carbon	101	98.0	P/P	85 - 115

Quality Assurance Report Precision

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P340038

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1968141	Turbidity	1.55	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P340321

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1968067	Chloride	2.37	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P340323

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1968067	Sulfate	5.68	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P340677

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1968136	Ammonia-N	3.15	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P340264

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1968139	Kjeldahl Nitrogen	0.660	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P340422

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1968136	NO2NO3-N	0.477	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P340414

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1968389	Total-P	1.76	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P340068

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1968143	O-Phosphate-P	0.478	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P340023

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1967901	Sucralose	2.06	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P340164

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1968092	2,4-D	6.77	Spike	P	0 - 30
1968092	Acetaminophen	4.36	Spike	P	0 - 30
1968092	Bentazon	4.77	Spike	P	0 - 30
1968092	Carbamazepine	1.87	Spike	P	0 - 30
1968092	Diuron	8.36	Spike	P	0 - 30
1968092	Fenuron	3.33	Spike	P	0 - 30
1968092	Imidacloprid	1.30	Spike	P	0 - 30
1968092	Linuron	6.55	Spike	P	0 - 30
1968092	MCPP	2.56	Spike	P	0 - 30
1968092	Primidone	6.48	Spike	P	0 - 30
1968092	Triclopyr	5.52	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P340057

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1968266	Color (true)	9.05	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P340528

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1968135	Total Alkalinity	0.719	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P340576

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1967977	TDS	0.0	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P340532

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1968135	Fluoride	0.514	Spike	P	0 - 3.0

Quality Assurance Report Precision

Reference Method: SM 5310 B-00
Batch ID: P340501

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1968136	Organic Carbon	1.67	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: 1968150
Field Sample ID: 20030725

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	36.8	P	30 - 160
EPA 8321B	Acetaminophen-d4	122	P	30 - 160
EPA 8321B	Carbamazepine-d10	95.6	P	30 - 160
EPA 8321B	Diuron-d6	74.5	P	30 - 160
EPA 8321B	Primidone-d5	82.2	P	30 - 160
EPA 8321B	Sucralose-d6	110	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A82096
Included Lab Sample IDs: 1968141

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

Reference Method: SM 2120 B
Run ID: A82104
Included Lab Sample IDs: 1968141

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	110	107	P/P	85 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A82105
Included Lab Sample IDs: 1968143

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

Reference Method: EPA 8321B
Run ID: A82169
Included Lab Sample IDs: 1968150

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	96.9	94.9	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A82190

Included Lab Sample IDs: 1968141

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	102	100	P/P	90 - 110
Sulfate	102	99.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A82229

Included Lab Sample IDs: 1968142

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A82230

Included Lab Sample IDs: 1968142

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	105	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A82255

Included Lab Sample IDs: 1968142

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.6	99.1	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A82257

Included Lab Sample IDs: 1968142

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

Reference Method: SM 2320 B-97

Run ID: A82266

Included Lab Sample IDs: 1968141

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	100	97.9	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A82266

Included Lab Sample IDs: 1968141

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	96.7	100	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A82285

Included Lab Sample IDs: 1968150

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	98.4	98.3	P/P	50 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A82285
Included Lab Sample IDs: 1968150

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetaminophen	109	105	P/P	60 - 150
Bentazon	121	98.9	P/P	50 - 150
Carbamazepine	105	101	P/P	60 - 150
Diuron	128	129	P/P	60 - 150
Fenuron	119	119	P/P	60 - 150
Fluridone	111	108	P/P	60 - 160
Imidacloprid	114	109	P/P	60 - 150
Linuron	121	133	P/P	60 - 150
MCP	92.9	94.0	P/P	50 - 150
Primidone	118	111	P/P	60 - 150
Triclopyr	105	117	P/P	50 - 150

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A82317
Included Lab Sample IDs: 1968142

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	102	103	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				1.55	
EPA 300.0 Rev. 2.1	Chloride	91.2	93.2 95.5		2.37	
	Sulfate	90.1	93.5 91.3		5.68	
EPA 350.1 Rev. 2.0	Ammonia-N	99.7	98.2 94.8			3.15
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	102	95.7 96.9			0.660
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	104	104 105			0.477
EPA 365.1 Rev. 2.0	Total-P	107				1.76
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.3	97.6 98.2			0.478
EPA 8321B	2,4-D	89.1	58.9 69.4			6.77
	Acetaminophen	113	119 114			4.36
	Bentazon	128	22.8 25.4			4.77
	Carbamazepine	104	90.3 88.6			1.87
	Diuron	93.0	72.4 66.6			8.36
	Fenuron	120	95.9 92.7			3.33
	Fluridone	89.6				
	Imidacloprid	105	106 102			1.30
	Linuron	100	81.2 76.1			6.55
	MCP	75.6	31.4 29.8			2.56
	Primidone	120	110 103			6.48
	Sucralose	97.4	100 96.9			2.06
	Triclopyr	77.8	51.1 54.0			5.52
SM 2120 B	Color (true)				9.05	

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		LCS	Precision SMP	MS
SM 2320 B-97	Total Alkalinity	99.4				0.719	
SM 2540 C-97	TDS					0.0	
SM 4500 F-C-97	Fluoride	96.3	95.1	95.7			0.514
SM 5310 B-00	Organic Carbon	100	101	98.0			1.67

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1968141
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1968141
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1968141
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1968142
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1968142
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1968142
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1968142
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1968143
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	1968150
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	1968150
SM 2120 B / E31780	True Color measured at 450 nm	1968141
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1968141
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1968141
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1968141
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1968141
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1968142

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	02/15/2018			02/15/2018 16:53	Julia Storbeck	1968141
EPA 300.0 Rev. 2.1	02/15/2018			02/21/2018	Julia Storbeck	1968141
EPA 350.1 Rev. 2.0	02/15/2018			02/27/2018	Ping Hua	1968142
EPA 351.2 Rev. 2.0	02/15/2018	02/20/2018	Adrian Shelby	02/22/2018	Joseph Suarez	1968142
EPA 353.2 Rev. 2.0	02/15/2018			02/22/2018	Lauren Bottorf	1968142
EPA 365.1 Rev. 2.0	02/15/2018	02/22/2018	Sima Feizi	02/23/2018	Lipi Saha	1968142
EPA 365.1 Rev. 2.0 dissolved	02/15/2018			02/15/2018 16:39	Megan Treadwell	1968143
EPA 8321B	02/15/2018	02/16/2018	Julie Michelle Frank	02/17/2018	Juyoung Kim	1968150
	02/15/2018	02/20/2018	Hoor Shaik	02/21/2018	Julie Michelle Frank	1968150
	02/15/2018	02/20/2018	Hoor Shaik	02/22/2018	Julie Michelle Frank	1968150
SM 2120 B	02/15/2018			02/15/2018 17:14	Tanya Welborn	1968141
SM 2320 B-97	02/15/2018			02/24/2018	Dale L. Simmons	1968141
SM 2540 C-97	02/15/2018			02/16/2018	DeAsia Armster	1968141
SM 2540 D-97	02/15/2018			02/16/2018	DeAsia Armster	1968141
SM 4500 F-C-97	02/15/2018			02/24/2018	Dale L. Simmons	1968141
SM 5310 B-00	02/15/2018			02/23/2018	Megan Treadwell	1968142