

Chemical Analysis Report

NW-DIST-2020-01-16-01

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

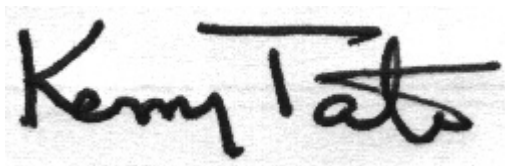
Event Description: **Continuous Monitoring - Mullet Creek**
Request ID: **RQ-2020-01-13-17**
Customer: **NW-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
160 Government Center
Suite 208
Pensacola, FL 32502-5794
Attn: Cheryl Bunch

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: Kerry Tate, Ph.D., Environmental Administrator

Date Certified: 05-FEB-2020 13:50

A handwritten signature in black ink that reads "Kerry Tate". The signature is written in a cursive, flowing style with a horizontal line above the first name.

NON-CONFORMANCE REPORT INCLUDED

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 by the Florida Department of Health Environmental Laboratory Certification Program 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: Mouth of Mullet Creek @ Hwy 20

Collection Date/Time: 01/14/2020 11:16

Field ID: G3NW0137

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2149696	EPA 180.1 Rev. 2.0	Turbidity	0.55	Y	NTU	P377402	
	EPA 300.0 Rev. 2.1	Bromide	0.029	I	mg Br/L	P377473	
	SM 2320 B-2011	Total Alkalinity	3.4	Y	mg CaCO3/L	P377663	
	SM 2540 D-2011	TSS	2	UY	mg/L	P377446	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P377666	
2149697	EPA 350.1 Rev. 2.0	Ammonia-N	0.011	Y	mg N/L	P377373	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.16	IY	mg N/L	P377596	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.013	Y	mg N/L	P377517	
	EPA 365.1 Rev. 2.0	Total-P	0.019	Y	mg P/L	P377603	
	SM 5310 B-2011	Organic Carbon	3.2	Y	mg C/L	P377537	
2149698	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.013	YQ	mg P/L	P377293	
2149702	EPA 8321B	2,4-D	0.0020	UY	ug/L	P377201	
		Acesulfame K**	0.10	UY	ug/L	P377312	MS
		AMPA**	0.10	UY	ug/L	P377312	
		Sucralose**	0.037	IY	ug/L	P377312	
		Acetaminophen**	0.0080	UY	ug/L	P377201	
		Acetamiprid**	0.0020	UY	ug/L	P377201	
		Endothall**	0.25	UY	ug/L	P377312	MS
		Glufosinate**	0.10	UY	ug/L	P377312	
		Glyphosate**	0.10	UY	ug/L	P377312	
		Afidopyropen**	0.0020	UJY	ug/L	P377201	
		Bentazon	8.0E-04	UY	ug/L	P377201	
		Benzovindiflupyr**	0.0020	UJY	ug/L	P377201	
		Carbamazepine**	8.0E-04	UY	ug/L	P377201	
		Clothianidin**	0.0020	UY	ug/L	P377201	
		Dinotefuran**	0.0020	UY	ug/L	P377201	
		Diuron	0.0020	UY	ug/L	P377201	
		Fenuron	0.016	UY	ug/L	P377201	
		Fluridone**	8.0E-04	UY	ug/L	P377201	
		Imazapyr**	0.0040	UY	ug/L	P377201	
		Hydrocodone**	0.0020	UY	ug/L	P377201	
		Ibuprofen**	0.020	UY	ug/L	P377201	
		Imidacloprid	0.0020	IY	ug/L	P377201	MS
		Linuron	0.0040	UY	ug/L	P377201	
		Mandestrobin**	0.0020	UJY	ug/L	P377201	
		MCP	0.0020	UY	ug/L	P377201	
		Naproxen**	0.0080	UY	ug/L	P377201	
		Primidone**	0.0040	UY	ug/L	P377201	
		Pyraclostrobin**	0.0020	UY	ug/L	P377201	
		Thiamethoxam**	0.0020	UY	ug/L	P377201	
		Tolfenpyrad**	0.0020	UY	ug/L	P377201	
		Triclopyr**	0.0040	UY	ug/L	P377201	

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
Ref. Method and Comment:							
EPA 180.1 Rev. 2.0: Sample temperature was outside the acceptable range when received at the laboratory.							
SM 2320 B-2011: Sample temperature was outside the acceptable range when received at the laboratory.							
SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample. Sample temperature was outside the acceptable range when received at the laboratory.							
EPA 350.1 Rev. 2.0: Sample temperature was outside the acceptable range when received at the laboratory.							
EPA 351.2 Rev. 2.0: Sample temperature was outside the acceptable range when received at the laboratory.							
EPA 353.2 Rev. 2.0: Sample temperature was outside the acceptable range when received at the laboratory.							
EPA 365.1 Rev. 2.0: Total-P: Sample temperature was outside the acceptable range when received at the laboratory.							
SM 5310 B-2011: Sample temperature was outside the acceptable range when received at the laboratory.							
EPA 365.1 Rev. 2.0 dissolved: O-Phosphate-P: Sample temperature was outside the acceptable range when received at the laboratory. The sample expired upon receipt.							
EPA 8321B: J - second source check standards for some analytes were not available for analysis. Y - Sample was received with inadequate sample preservation; see NCR report.							
EPA 8321B: Y - Sample was received with inadequate sample preservation; see NCR report.							

Non-Conformance Report

NCR ID: 8129

Event(s)

NW-DIST-2020-01-16-01

Job(s)

Sample(s)

Test(s)

NCR Type: SHIPPING/RECEIVING

NCR Category: Preservation Not Intact

Observation: Sample received outside the acceptable temperature range.

Resolution: Data will be qualified as appropriate.

Authorized by/Date: Joshua Ayres 1/22/2020

The Non-Conformance Report details exceptions or problems encountered with the events/jobs/samples/test.
Please address questions to:

Chemistry	Colin Wright	(850) 245-8085
Biology	Cheryl Swanson	(850) 245-8177

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P377402

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P377473

Component	Result	Code	Units
Bromide	0.013	U	mg Br/L

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P377373

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

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P377596

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

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P377517

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

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P377603

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P377293

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

Reference Method: EPA 8321B
 Batch ID: P377201

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
Acetaminophen	0.0080	U	ug/L
Acetamiprid	0.0020	U	ug/L
Afidopyropen	0.0020	U	ug/L
Bentazon	8.0E-04	U	ug/L
Benzovindiflupyr	0.0020	U	ug/L
Carbamazepine	8.0E-04	U	ug/L
Clothianidin	0.0020	U	ug/L
Dinotefuran	0.0020	U	ug/L
Diuron	0.0020	U	ug/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B
Batch ID: P377201

Component	Result	Code	Units
Fenuron	0.016	U	ug/L
Fluridone	8.0E-04	U	ug/L
Hydrocodone	0.0020	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
Mandestrobin	0.0020	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
Thiamethoxam	0.0020	U	ug/L
Tolfenpyrad	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: EPA 8321B
Batch ID: P377312

Component	Result	Code	Units
Acesulfame K	0.10	U	ug/L
AMPA	0.10	U	ug/L
Endothall	0.25	U	ug/L
Glufosinate	0.10	U	ug/L
Glyphosate	0.10	U	ug/L
Sucralose	0.010	U	ug/L

Reference Method: SM 2320 B-2011
Batch ID: P377663

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

Reference Method: SM 2540 D-2011
Batch ID: P377446

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P377666

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P377537

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: P377473

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

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P377373

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: P377596

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

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P377517

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: P377603

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: P377293

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

Reference Method: EPA 8321B
 Batch ID: P377201

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	133		P	40 - 160
Acetaminophen	92.6		P	30 - 160
Acetamiprid	98.6		P	40 - 160
Afidopyropen	104		P	40 - 160
Bentazon	72.9		P	30 - 160
Benzovindiflupyr	91.1		P	40 - 160
Carbamazepine	114		P	40 - 160
Clothianidin	104		P	40 - 160
Dinotefuran	96.3		P	40 - 160
Diuron	88.3		P	40 - 160
Fenuron	101		P	40 - 160
Fluridone	107		P	40 - 160
Hydrocodone	105		P	40 - 160
Ibuprofen	84.1		P	30 - 160
Imazapyr	88.5		P	40 - 160
Imidacloprid	105		P	40 - 160

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P377201

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Linuron	83.4		P	40 - 160
Mandestrobin	93.1		P	40 - 160
MCP	131		P	40 - 160
Naproxen	70.6		P	40 - 160
Primidone	110		P	40 - 160
Pyraclostrobin	82.2		P	30 - 160
Thiamethoxam	104		P	40 - 160
Tolfenpyrad	48.7		P	40 - 160
Triclopyr	100		P	30 - 160

Reference Method: EPA 8321B
Batch ID: P377312

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	84.2		P	40 - 150
AMPA	91.8		P	40 - 150
Endothall	117		P	40 - 150
Glufosinate	96.2		P	40 - 150
Glyphosate	118		P	40 - 140
Sucralose	91.7		P	40 - 150

Reference Method: SM 2320 B-2011
Batch ID: P377663

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	104		P	98 - 106

Reference Method: SM 4500 F-C-2011
Batch ID: P377666

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.3		P	92 - 103

Reference Method: SM 5310 B-2011
Batch ID: P377537

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: P377473

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2149696	Bromide	104	102	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P377373

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2149697	Ammonia-N	102	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P377596

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2149697	Kjeldahl Nitrogen	103	106	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P377517

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2149670	NO2NO3-N	99.5		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P377603

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2149670	Total-P	107	105	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P377293

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2149690	O-Phosphate-P	92.9	95.8	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P377201

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2149266	2,4-D	111	113	P/P	40 - 160
2149266	Acetaminophen	93.4	103	P/P	30 - 160
2149266	Acetamiprid	104	102	P/P	40 - 160
2149266	Afidopyropen	105	101	P/P	40 - 160
2149266	Bentazon	45.1	48.1	P/P	30 - 160
2149266	Benzovindiflupyr	85.8	85.6	P/P	40 - 160
2149266	Carbamazepine	72.1	88.1	P/P	40 - 160
2149266	Clothianidin	113	113	P/P	40 - 160
2149266	Dinotefuran	132	121	P/P	40 - 160
2149266	Diuron	73.8	75.3	P/P	40 - 160
2149266	Fenuron	106	111	P/P	40 - 160
2149266	Fluridone	97.2	103	P/P	40 - 160
2149266	Hydrocodone	111	114	P/P	40 - 160
2149266	Ibuprofen	88.0	78.8	P/P	30 - 160
2149266	Imazapyr	90.9	86.1	P/P	40 - 160
2149266	Imidacloprid	165	156	F/P	40 - 160

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P377201

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2149266	Linuron	77.8	80.4	P/P	40 - 160
2149266	Mandestrobin	89.6	90.1	P/P	40 - 160
2149266	MCP	117	124	P/P	40 - 160
2149266	Naproxen	84.0	76.8	P/P	40 - 160
2149266	Primidone	90.1	113	P/P	40 - 160
2149266	Pyraclostrobin	84.7	85.3	P/P	30 - 160
2149266	Thiamethoxam	152	147	P/P	40 - 160
2149266	Tolfenpyrad	52.0	56.6	P/P	40 - 160
2149266	Triclopyr	84.6	102	P/P	30 - 160

Reference Method: EPA 8321B
Batch ID: P377312

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2149394	Acesulfame K	34.6	35.6	F/F	40 - 150
2149394	AMPA	72.3	69.6	P/P	40 - 150
2149394	Endothall	154	155	F/F	40 - 150
2149394	Glufosinate	75.9	78.7	P/P	40 - 150
2149394	Glyphosate	64.3	67.5	P/P	40 - 140
2149394	Sucralose	92.3	67.9	P/P	40 - 150

Reference Method: SM 4500 F-C-2011
Batch ID: P377666

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2149674	Fluoride	97.9	97.9	P/P	89 - 106

Reference Method: SM 5310 B-2011
Batch ID: P377537

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2149558	Organic Carbon	101	102	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P377402

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2149771	Turbidity	0.464	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P377473

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2149696	Bromide	2.11	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P377373

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2149697	Ammonia-N	0.144	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P377596

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2149697	Kjeldahl Nitrogen	2.44	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P377517

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2149670	NO2NO3-N	0.213	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P377603

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2149670	Total-P	1.35	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P377293

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2149690	O-Phosphate-P	2.70	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P377201

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2149266	2,4-D	2.11	Spike	P	0 - 30
2149266	Acetaminophen	9.74	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P377201

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2149266	Acetamiprid	2.21	Spike	P	0 - 30
2149266	Afidopyropen	4.73	Spike	P	0 - 30
2149266	Bentazon	2.38	Spike	P	0 - 30
2149266	Benzovindiflupyr	0.298	Spike	P	0 - 30
2149266	Carbamazepine	18.5	Spike	P	0 - 30
2149266	Clothianidin	0.0384	Spike	P	0 - 30
2149266	Dinotefuran	6.19	Spike	P	0 - 30
2149266	Diuron	1.99	Spike	P	0 - 30
2149266	Fenuron	4.80	Spike	P	0 - 30
2149266	Fluridone	5.79	Spike	P	0 - 30
2149266	Hydrocodone	2.80	Spike	P	0 - 30
2149266	Ibuprofen	11.0	Spike	P	0 - 30
2149266	Imazapyr	3.73	Spike	P	0 - 30
2149266	Imidacloprid	4.85	Spike	P	0 - 30
2149266	Linuron	3.26	Spike	P	0 - 30
2149266	Mandestrobin	0.643	Spike	P	0 - 30
2149266	MCPP	6.20	Spike	P	0 - 30
2149266	Naproxen	8.88	Spike	P	0 - 30
2149266	Primidone	20.9	Spike	P	0 - 30
2149266	Pyraclostrobin	0.777	Spike	P	0 - 30
2149266	Thiamethoxam	2.87	Spike	P	0 - 30
2149266	Tolfenpyrad	8.40	Spike	P	0 - 30
2149266	Triclopyr	18.3	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P377312

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2149394	Acesulfame K	2.74	Spike	P	0 - 30
2149394	AMPA	3.01	Spike	P	0 - 30
2149394	Endothall	0.554	Spike	P	0 - 30
2149394	Glufosinate	3.62	Spike	P	0 - 30
2149394	Glyphosate	3.48	Spike	P	0 - 30
2149394	Sucralose	28.8	Spike	P	0 - 30

Reference Method: SM 2320 B-2011
Batch ID: P377663

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2149674	Total Alkalinity	0.301	Sample	P	0 - 2.8

Reference Method: SM 4500 F-C-2011
Batch ID: P377666

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2149674	Fluoride	0.0	Spike	P	0 - 2.5

Quality Assurance Report Precision

Reference Method: SM 5310 B-2011
Batch ID: P377537

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2149558	Organic Carbon	0.185	Spike	P	0 - 20

* Sample, spike and/or laboratory control sample precision (LCS) is reported.

Quality Assurance Report Surrogates

Lab Sample ID: 2149702

Field Sample ID: G3NW0137

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	114	P	30 - 160
EPA 8321B	Acetaminophen-d4	119	P	30 - 160
EPA 8321B	Carbamazepine-d10	112	P	30 - 160
EPA 8321B	Diuron-d6	91.2	P	30 - 160
EPA 8321B	Endothall-d6	144	P	30 - 160
EPA 8321B	Endothall-d6	144	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	82.6	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	82.6	P	30 - 160
EPA 8321B	Ibuprofen-d3	95.1	P	30 - 160
EPA 8321B	Primidone-d5	108	P	30 - 160
EPA 8321B	Sucralose-d6	92.7	P	30 - 160
EPA 8321B	Sucralose-d6	92.7	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A96846

Included Lab Sample IDs: 2149696

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Bromide	102	105	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A96944

Included Lab Sample IDs: 2149698

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	97.8	97.1	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A96977

Included Lab Sample IDs: 2149697

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

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A96988

Included Lab Sample IDs: 2149696

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.5	99.5	P/P	95 - 105

Reference Method: EPA 8321B

Run ID: A96995

Included Lab Sample IDs: 2149702

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	107	108	P/P	60 - 160
Glufosinate	114	95.1	P/P	60 - 160
Glyphosate	102	92.4	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A96997

Included Lab Sample IDs: 2149702

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	75.7	74.9	P/P	60 - 160
Endothall	123	125	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A97022

Included Lab Sample IDs: 2149702

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	106	95.5	P/P	50 - 150
Acetaminophen	98.2	102	P/P	60 - 160
Acetamiprid	109	111	P/P	50 - 150
Afidopyrophen	100	99.3	P/P	50 - 150
Bentazon	99.3	90.6	P/P	50 - 160
Benzovindiflupyr	101	98.9	P/P	50 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
 Run ID: A97022
 Included Lab Sample IDs: 2149702

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Carbamazepine	107	99.2	P/P	60 - 150
Clothianidin	116	119	P/P	60 - 150
Dinotefuran	103	109	P/P	50 - 150
Diuron	99.5	111	P/P	60 - 150
Fenuron	110	106	P/P	60 - 150
Fluridone	98.4	108	P/P	60 - 160
Hydrocodone	94.9	107	P/P	60 - 150
Ibuprofen	109	108	P/P	50 - 160
Imazapyr	88.5	95.3	P/P	50 - 150
Imidacloprid	100	100	P/P	60 - 150
Linuron	103	104	P/P	60 - 150
Mandestrobin	106	102	P/P	50 - 150
MCPP	94.3	95.6	P/P	50 - 150
Naproxen	100	79.2	P/P	50 - 160
Primidone	113	111	P/P	60 - 150
Pyraclostrobin	96.8	89.5	P/P	60 - 150
Thiamethoxam	107	111	P/P	50 - 150
Tolfenpyrad	91.5	88.9	P/P	60 - 150
Triclopyr	98.6	99.2	P/P	50 - 150

Reference Method: EPA 353.2 Rev. 2.0
 Run ID: A97036
 Included Lab Sample IDs: 2149697

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	102	103	P/P	90 - 110

Reference Method: SM 5310 B-2011
 Run ID: A97050
 Included Lab Sample IDs: 2149697

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

Reference Method: SM 2320 B-2011
 Run ID: A97088
 Included Lab Sample IDs: 2149696

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

Reference Method: SM 4500 F-C-2011
 Run ID: A97088
 Included Lab Sample IDs: 2149696

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A97098

Included Lab Sample IDs: 2149697

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	109	108	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A97109

Included Lab Sample IDs: 2149702

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	101	89.5	P/P	60 - 160

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A97111

Included Lab Sample IDs: 2149697

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	100	106	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					0.464	
EPA 300.0 Rev. 2.1	Bromide	105	104	102			2.11
EPA 350.1 Rev. 2.0	Ammonia-N	101	102	102			0.144
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	99.5	103	106			2.44
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	102	99.5				0.213
EPA 365.1 Rev. 2.0	Total-P	107	107	105			1.35
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	97.8	92.9	95.8			2.70
EPA 8321B	2,4-D	133	111	113			2.11
	Acesulfame K	84.2	34.6	35.6			2.74
	Acetaminophen	92.6	93.4	103			9.74
	Acetamiprid	98.6	104	102			2.21
	Afidopyropen	104	105	101			4.73
	AMPA	91.8	72.3	69.6			3.01
	Bentazon	72.9	45.1	48.1			2.38
	Benzovindiflupyr	91.1	85.8	85.6			0.298
	Carbamazepine	114	72.1	88.1			18.5
	Clothianidin	104	113	113			0.0384
	Dinotefuran	96.3	132	121			6.19
	Diuron	88.3	73.8	75.3			1.99
	Endothall	117	154	155			0.554
	Fenuron	101	106	111			4.80
	Fluridone	107	97.2	103			5.79
	Glufosinate	96.2	75.9	78.7			3.62
	Glyphosate	118	64.3	67.5			3.48
	Hydrocodone	105	111	114			2.80
	Ibuprofen	84.1	88.0	78.8			11.0
	Imazapyr	88.5	90.9	86.1			3.73
	Imidacloprid	105	165	156			4.85
	Linuron	83.4	77.8	80.4			3.26
	Mandestrobin	93.1	89.6	90.1			0.643
	MCPP	131	117	124			6.20
	Naproxen	70.6	84.0	76.8			8.88
	Primidone	110	90.1	113			20.9
	Pyraclostrobin	82.2	84.7	85.3			0.777
	Sucralose	91.7	92.3	67.9			28.8
	Thiamethoxam	104	152	147			2.87
	Tolfenpyrad	48.7	52.0	56.6			8.40
	Triclopyr	100	84.6	102			18.3
SM 2320 B-2011	Total Alkalinity	104				0.301	
SM 4500 F-C-2011	Fluoride	97.3	97.9	97.9			0.0
SM 5310 B-2011	Organic Carbon	100	101	102			0.185

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2149696
EPA 300.0 Rev. 2.1 / E31780	Bromide in aqueous matrices	2149696
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2149697
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2149697

Reference Method Descriptions

Method / DoH Cert #	Description	<u>Associated Samples</u>
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2149697
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2149697
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2149698
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2149702
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2149702
SM 2320 B-2011 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2149696
SM 2540 D-2011 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2149696
SM 4500 F-C-2011 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2149696
SM 5310 B-2011 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2149697

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	01/16/2020			01/16/2020 10:50	Blanca Fach	2149696
EPA 300.0 Rev. 2.1	01/16/2020			01/17/2020 15:41	Lipi Saha	2149696
EPA 350.1 Rev. 2.0	01/16/2020			01/17/2020 12:00	Ping Hua	2149697
EPA 351.2 Rev. 2.0	01/16/2020	01/23/2020 11:30	Jhamieka S. Greenwood	01/24/2020 08:28	Jhamieka S. Greenwood	2149697
EPA 353.2 Rev. 2.0	01/16/2020			01/22/2020 09:51	Beverly Y. Sanders	2149697
EPA 365.1 Rev. 2.0	01/16/2020	01/23/2020 15:35	Yen Ta	01/24/2020 14:57	Benjamin T. Nordmann	2149697
EPA 365.1 Rev. 2.0 dissolved	01/16/2020			01/16/2020 13:05	Carlos Miranda	2149698
EPA 8321B	01/16/2020	01/17/2020 10:00	Hoor Shaik	01/19/2020 04:21	Juyoung Kim	2149702
	01/16/2020	01/17/2020 11:00	Rebecca Ware	01/17/2020 15:03	Rebecca Ware	2149702
	01/16/2020	01/17/2020 11:00	Rebecca Ware	01/19/2020 18:24	Rebecca Ware	2149702
	01/16/2020	01/17/2020 11:00	Rebecca Ware	01/23/2020 22:40	Rebecca Ware	2149702
SM 2320 B-2011	01/16/2020			01/23/2020 06:58	Dale L. Simmons	2149696
SM 2540 D-2011	01/16/2020			01/17/2020 18:00	Blanca Fach	2149696
SM 4500 F-C-2011	01/16/2020			01/23/2020 06:58	Dale L. Simmons	2149696
SM 5310 B-2011	01/16/2020			01/21/2020 23:19	Madeline Funaro	2149697