

Chemical Analysis Report

NW-DIST-2020-10-15-01

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

Event Description: **ESC/BW BAY RUN**
Request ID: **RQ-2020-10-12-48**
Customer: **NW-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
160 Government Center
Suite 308
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: 04-NOV-2020 09:57

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 "T" and a long, sweeping underline.

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: Judges Bayou Mouth

Collection Date/Time: 10/14/2020 12:52

Field ID: G4NW0441

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2202270	EPA 180.1 Rev. 2.0	Turbidity	5.2		NTU	P388741	
	EPA 300.0 Rev. 2.1	Bromide	6.8		mg Br/L	P389482	
	SM 2320 B-2011	Total Alkalinity	36		mg CaCO3/L	P388942	
	SM 2540 D-2011	TSS	2	I	mg/L	P388973	
	SM 4500 F-C-2011	Fluoride	0.15		mg F/L	P388956	
2202272	EPA 350.1 Rev. 2.0	Ammonia-N	0.015		mg N/L	P388841	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.44		mg N/L	P389043	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.086		mg N/L	P389071	
	EPA 365.1 Rev. 2.0	Total-P	0.022		mg P/L	P388789	
	SM 5310 B-2011	Organic Carbon	6.6		mg C/L	P388946	
2202274	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P388746	
2202295	EPA 8321B	2,4-D	0.0020	U	ug/L	P388705	RPD
		Acesulfame K**	0.10	UJ	ug/L	P388857	SUR
		AMPA**	0.10	U	ug/L	P388857	
		Sucralose**	0.053		ug/L	P388857	
		Acetaminophen**	0.015	I	ug/L	P388705	
		Acetamiprid**	0.0020	U	ug/L	P388705	
		Endothall**	0.25	UJ	ug/L	P388857	SUR
		Glufosinate**	0.10	U	ug/L	P388857	
		Glyphosate**	0.10	U	ug/L	P388857	
		Afidopyropen**	0.0020	U	ug/L	P388705	MS, RPD
		Bentazon	8.0E-04	U	ug/L	P388705	MS
		Benzovindiflupyr**	0.0020	U	ug/L	P388705	
		Carbamazepine**	8.0E-04	U	ug/L	P388705	
		Clothianidin**	0.0020	U	ug/L	P388705	
		Dinotefuran**	0.0020	U	ug/L	P388705	
		Diuron	0.0020	U	ug/L	P388705	MS, RPD
		Fenuron	0.016	U	ug/L	P388705	
		Fluridone**	8.0E-04	U	ug/L	P388705	
		Imazapyr**	0.037		ug/L	P388705	
		Hydrocodone**	0.0020	U	ug/L	P388705	
		Ibuprofen**	0.020	U	ug/L	P388705	
		Imidacloprid	0.0020	U	ug/L	P388705	
		Linuron	0.0040	U	ug/L	P388705	
		Mandestrobin**	0.0020	U	ug/L	P388705	
		MCP	0.0020	U	ug/L	P388705	
		Naproxen**	0.0080	U	ug/L	P388705	
		Primidone**	0.0040	U	ug/L	P388705	
		Pyraclostrobin**	0.0020	U	ug/L	P388705	
		Thiamethoxam**	0.0020	U	ug/L	P388705	
		Tolfenpyrad**	0.0020	U	ug/L	P388705	
		Triclopyr**	0.0040	U	ug/L	P388705	MS, RPD

Field ID: G4NW0441

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
-----------	-------------	-----------	--------	------	-------	----------	----------

Ref. Method and Comment:
SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
EPA 8321B: Results confirmed in sample duplicate. Refer to the Lab Analysis Report for an explanation of QC Codes.

Sample Location: Trout Bayou

Collection Date/Time: 10/14/2020 13:31

Field ID: G4NW0443

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2202271	EPA 180.1 Rev. 2.0	Turbidity	4.8		NTU	P388741	
	EPA 300.0 Rev. 2.1	Bromide	7.8		mg Br/L	P389482	
	SM 2320 B-2011	Total Alkalinity	26		mg CaCO3/L	P388942	
	SM 2540 D-2011	TSS	4	I	mg/L	P388973	
	SM 4500 F-C-2011	Fluoride	0.17		mg F/L	P388956	
2202273	EPA 350.1 Rev. 2.0	Ammonia-N	0.036		mg N/L	P388841	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.58		mg N/L	P389043	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.009	I	mg N/L	P389071	
	EPA 365.1 Rev. 2.0	Total-P	0.021		mg P/L	P388789	
	SM 5310 B-2011	Organic Carbon	11		mg C/L	P388946	
2202275	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P388746	
2202296	EPA 8321B	2,4-D	0.011		ug/L	P388705	RPD
		Acesulfame K**	0.10	UJ	ug/L	P388857	SUR
		AMPA**	0.10	U	ug/L	P388857	
		Sucralose**	0.039	I	ug/L	P388857	
		Acetaminophen**	0.0080	U	ug/L	P388705	
		Acetamiprid**	0.0020	U	ug/L	P388705	
		Endothall**	0.25	UJ	ug/L	P388857	SUR
		Glufosinate**	0.10	U	ug/L	P388857	
		Glyphosate**	0.10	U	ug/L	P388857	
		Afidopyropen**	0.0020	U	ug/L	P388705	MS, RPD
		Bentazon	8.0E-04	U	ug/L	P388705	MS
		Benzovindiflupyr**	0.0020	U	ug/L	P388705	
		Carbamazepine**	8.0E-04	U	ug/L	P388705	
		Clothianidin**	0.0020	U	ug/L	P388705	
		Dinotefuran**	0.0020	U	ug/L	P388705	
		Diuron	0.0020	U	ug/L	P388705	MS, RPD
		Fenuron	0.016	U	ug/L	P388705	
		Fluridone**	8.0E-04	U	ug/L	P388705	
		Imazapyr**	0.011	I	ug/L	P388705	
		Hydrocodone**	0.0020	U	ug/L	P388705	
		Ibuprofen**	0.020	U	ug/L	P388705	
		Imidacloprid	0.0044	I	ug/L	P388705	
		Linuron	0.0040	U	ug/L	P388705	
		Mandestrobin**	0.0020	U	ug/L	P388705	
		MCP	0.0020	U	ug/L	P388705	
		Naproxen**	0.0080	U	ug/L	P388705	
		Primidone**	0.0040	U	ug/L	P388705	
		Pyraclostrobin**	0.0020	U	ug/L	P388705	
		Thiamethoxam**	0.0020	U	ug/L	P388705	
		Tolfenpyrad**	0.0020	U	ug/L	P388705	
		Triclopyr**	0.0040	U	ug/L	P388705	MS, RPD

Field ID: G4NW0443

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
-----------	-------------	-----------	--------	------	-------	----------	----------

Ref. Method and Comment:
SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
EPA 8321B: Results confirmed in sample duplicate. Refer to the Lab Analysis Report for an explanation of QC Codes.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P388741

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P389482

Component	Result	Code	Units
Bromide	0.013	U	mg Br/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P388841

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P389043

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P389071

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P388789

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P388746

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

Reference Method: EPA 8321B
Batch ID: P388705

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: P388705

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: P388857

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: P388942

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

Reference Method: SM 2540 D-2011
Batch ID: P388973

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P388956

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P388946

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: P389482

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Bromide	106		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P388841

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: P389043

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

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P389071

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	99.0		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P388789

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P388746

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	98.6		P	90 - 110

Reference Method: EPA 8321B
 Batch ID: P388705

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	99.2		P	30 - 160
Acetaminophen	80.4		P	30 - 160
Acetamiprid	68.8		P	30 - 160
Afidopyropen	30.5		P	30 - 160
Bentazon	45.8		P	30 - 160
Benzovindiflupyr	63.9		P	30 - 160
Carbamazepine	49.6		P	30 - 160
Clothianidin	63.9		P	30 - 160
Dinotefuran	74.9		P	30 - 160
Diuron	37.2		P	30 - 160
Fenuron	89.8		P	30 - 160
Fluridone	65.1		P	30 - 160
Hydrocodone	92.8		P	30 - 160
Ibuprofen	60.4		P	30 - 160
Imazapyr	90.9		P	30 - 160
Imidacloprid	87.8		P	30 - 160

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P388705

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Linuron	42.7		P	30 - 160
Mandestrobin	67.3		P	30 - 160
MCP	61.3		P	30 - 160
Naproxen	51.6		P	30 - 160
Primidone	70.3		P	30 - 160
Pyraclostrobin	58.5		P	30 - 160
Thiamethoxam	89.3		P	30 - 160
Tolfenpyrad	40.9		P	30 - 160
Triclopyr	55.6		P	30 - 160

Reference Method: EPA 8321B
Batch ID: P388857

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	69.4		P	40 - 150
AMPA	114		P	40 - 150
Endothall	109		P	40 - 150
Glufosinate	100		P	40 - 150
Glyphosate	104		P	40 - 140
Sucralose	116		P	40 - 150

Reference Method: SM 2320 B-2011
Batch ID: P388942

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.4		P	93 - 104

Reference Method: SM 4500 F-C-2011
Batch ID: P388956

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.1		P	90 - 106

Reference Method: SM 5310 B-2011
Batch ID: P388946

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	95.6		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P389482

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2202265	Bromide	101	106	P/P	90 - 110
2202645	Bromide	102		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P388841

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2202272	Ammonia-N	96.1	97.3	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P389043

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2202272	Kjeldahl Nitrogen	109	107	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P389071

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2202273	NO2NO3-N	95.8	96.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P388789

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2202076	Total-P	107	106	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P388746

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2202274	O-Phosphate-P	99.5	98.9	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P388705

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2201953	2,4-D	60.7	85.5	P/P	30 - 160
2201953	Acetaminophen	91.1	96.9	P/P	30 - 160
2201953	Acetamiprid	67.6	74.3	P/P	30 - 160
2201953	Afidopyropen	22.4	30.5	F/P	30 - 160
2201953	Bentazon	25.0	36.1	F/P	30 - 160
2201953	Benzovindiflupyr	52.9	63.2	P/P	30 - 160
2201953	Carbamazepine	38.9	50.0	P/P	30 - 160
2201953	Clothianidin	52.6	65.8	P/P	30 - 160
2201953	Dinotefuran	75.6	90.6	P/P	30 - 160
2201953	Diuron	26.4	36.4	F/P	30 - 160
2201953	Fenuron	76.0	83.3	P/P	30 - 160
2201953	Fluridone	59.9	66.2	P/P	30 - 160
2201953	Hydrocodone	70.5	90.5	P/P	30 - 160
2201953	Ibuprofen	57.1	65.6	P/P	30 - 160
2201953	Imazapyr	75.7	75.5	P/P	30 - 160

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
 Batch ID: P388705

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2201953	Imidacloprid	103	107	P/P	30 - 160
2201953	Linuron	40.6	45.3	P/P	30 - 160
2201953	Mandestrobin	65.0	74.6	P/P	30 - 160
2201953	MCCP	48.3	65.3	P/P	30 - 160
2201953	Naproxen	36.3	32.2	P/P	30 - 160
2201953	Primidone	64.3	71.1	P/P	30 - 160
2201953	Pyraclostrobin	53.0	57.8	P/P	30 - 160
2201953	Thiamethoxam	85.2	112	P/P	30 - 160
2201953	Tolfenpyrad	32.2	38.4	P/P	30 - 160
2201953	Triclopyr	28.8	54.2	F/P	30 - 160

Reference Method: EPA 8321B
 Batch ID: P388857

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2202760	Acesulfame K	89.4	90.0	P/P	40 - 150
2202760	AMPA	120	122	P/P	40 - 150
2202760	Endothall	108	109	P/P	40 - 150
2202760	Glufosinate	97.4	92.7	P/P	40 - 150
2202760	Glyphosate	85.1	86.0	P/P	40 - 140
2202760	Sucralose	122	119	P/P	40 - 150

Reference Method: SM 4500 F-C-2011
 Batch ID: P388956

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2202126	Fluoride	103	104	P/P	94 - 107

Reference Method: SM 5310 B-2011
 Batch ID: P388946

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2202003	Organic Carbon	101		P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P388741

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2202234	Turbidity	0.498	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P389482

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2202265	Bromide	3.22	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P388841

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2202272	Ammonia-N	0.908	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P389043

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2202272	Kjeldahl Nitrogen	2.19	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P389071

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2202273	NO2NO3-N	0.497	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P388789

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2202076	Total-P	0.827	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P388746

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2202274	O-Phosphate-P	0.605	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P388705

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2201953	2,4-D	30.9	Spike	F	0 - 30
2201953	Acetaminophen	6.09	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P388705

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2201953	Acetamiprid	9.32	Spike	P	0 - 30
2201953	Afidopyropen	30.6	Spike	F	0 - 30
2201953	Bentazon	15.7	Spike	P	0 - 30
2201953	Benzovindiflupyr	17.7	Spike	P	0 - 30
2201953	Carbamazepine	24.9	Spike	P	0 - 30
2201953	Clothianidin	22.3	Spike	P	0 - 30
2201953	Dinotefuran	18.1	Spike	P	0 - 30
2201953	Diuron	32.0	Spike	F	0 - 30
2201953	Fenuron	9.21	Spike	P	0 - 30
2201953	Fluridone	8.95	Spike	P	0 - 30
2201953	Hydrocodone	24.8	Spike	P	0 - 30
2201953	Ibuprofen	13.8	Spike	P	0 - 30
2201953	Imazapyr	0.194	Spike	P	0 - 30
2201953	Imidacloprid	3.33	Spike	P	0 - 30
2201953	Linuron	10.8	Spike	P	0 - 30
2201953	Mandestrobin	13.7	Spike	P	0 - 30
2201953	MCPP	29.9	Spike	P	0 - 30
2201953	Naproxen	12.0	Spike	P	0 - 30
2201953	Primidone	10.0	Spike	P	0 - 30
2201953	Pyraclostrobin	8.72	Spike	P	0 - 30
2201953	Thiamethoxam	27.0	Spike	P	0 - 30
2201953	Tolfenpyrad	17.7	Spike	P	0 - 30
2201953	Triclopyr	61.2	Spike	F	0 - 30

Reference Method: EPA 8321B
Batch ID: P388857

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2202760	Acesulfame K	0.707	Spike	P	0 - 30
2202760	AMPA	0.939	Spike	P	0 - 30
2202760	Endothall	0.924	Spike	P	0 - 30
2202760	Glufosinate	4.95	Spike	P	0 - 30
2202760	Glyphosate	1.02	Spike	P	0 - 30
2202760	Sucralose	2.67	Spike	P	0 - 30

Reference Method: SM 2320 B-2011
Batch ID: P388942

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2202126	Total Alkalinity	7.08	Sample	P	0 - 8.1

Reference Method: SM 4500 F-C-2011
Batch ID: P388956

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2202126	Fluoride	0.479	Spike	P	0 - 2.8

Quality Assurance Report Precision

Reference Method: SM 5310 B-2011
Batch ID: P388946

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2202003	Organic Carbon	0.0998	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2202295

Field Sample ID: G4NW0441

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	90.3	P	30 - 160
EPA 8321B	Acetaminophen-d4	103	P	30 - 160
EPA 8321B	Carbamazepine-d10	49.8	P	30 - 160
EPA 8321B	Diuron-d6	48.6	P	30 - 160
EPA 8321B	Endothall-d6	338	F	30 - 160
EPA 8321B	Endothall-d6	338	F	30 - 160
EPA 8321B	Glyphosate 13C 15N	42.8	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	42.8	P	30 - 160
EPA 8321B	Ibuprofen-d3	66.0	P	30 - 160
EPA 8321B	Primidone-d5	70.0	P	30 - 160
EPA 8321B	Sucralose-d6	47.4	P	30 - 160
EPA 8321B	Sucralose-d6	47.4	P	30 - 160

Lab Sample ID: 2202296

Field Sample ID: G4NW0443

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	83.6	P	30 - 160
EPA 8321B	Acetaminophen-d4	97.5	P	30 - 160
EPA 8321B	Carbamazepine-d10	40.7	P	30 - 160
EPA 8321B	Diuron-d6	32.5	P	30 - 160
EPA 8321B	Endothall-d6	302	F	30 - 160
EPA 8321B	Endothall-d6	302	F	30 - 160
EPA 8321B	Glyphosate 13C 15N	37.6	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	37.6	P	30 - 160
EPA 8321B	Ibuprofen-d3	61.9	P	30 - 160
EPA 8321B	Primidone-d5	60.9	P	30 - 160
EPA 8321B	Sucralose-d6	44.9	P	30 - 160
EPA 8321B	Sucralose-d6	44.9	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A101544

Included Lab Sample IDs: 2202270, 2202271

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.0	100	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A101545

Included Lab Sample IDs: 2202274, 2202275

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.2	99.4	P/P	90 - 110
O-Phosphate-P	99.4	99.2	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A101572

Included Lab Sample IDs: 2202272, 2202273

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.2	97.7	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A101618

Included Lab Sample IDs: 2202295, 2202296

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	69.4	69.1	P/P	50 - 160
Acesulfame K	75.1	69.4	P/P	50 - 160
Endothall	111	123	P/P	60 - 160
Endothall	123	125	P/P	60 - 160

Reference Method: SM 2320 B-2011

Run ID: A101630

Included Lab Sample IDs: 2202270, 2202271

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	101	96.4	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A101630

Included Lab Sample IDs: 2202270, 2202271

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	97.6	101	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A101631

Included Lab Sample IDs: 2202272, 2202273

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.4	96.7	P/P	90 - 110
Organic Carbon	99.8	97.4	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A101633

Included Lab Sample IDs: 2202272, 2202273

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	92.2	92.5	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A101643

Included Lab Sample IDs: 2202295, 2202296

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	110	117	P/P	50 - 160
AMPA	117	110	P/P	50 - 160
Glufosinate	105	108	P/P	50 - 160
Glufosinate	108	111	P/P	50 - 160
Glyphosate	102	106	P/P	50 - 160
Glyphosate	106	105	P/P	50 - 160

Reference Method: EPA 8321B

Run ID: A101652

Included Lab Sample IDs: 2202295, 2202296

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	125	94.5	P/P	50 - 150
Acetaminophen	114	113	P/P	60 - 160
Acetamiprid	109	116	P/P	50 - 150
Afidopyropen	93.0	78.2	P/P	50 - 150
Bentazon	130	106	P/P	50 - 160
Benzovindiflupyr	108	92.8	P/P	50 - 150
Carbamazepine	113	97.6	P/P	60 - 150
Clothianidin	96.2	88.4	P/P	60 - 150
Dinotefuran	104	95.5	P/P	50 - 150
Diuron	119	108	P/P	60 - 160
Fenuron	104	104	P/P	60 - 150
Fluridone	94.3	96.0	P/P	60 - 160
Hydrocodone	114	112	P/P	60 - 150
Ibuprofen	123	88.0	P/P	50 - 160
Imazapyr	94.8	78.7	P/P	50 - 160
Imidacloprid	95.7	97.9	P/P	60 - 150
Linuron	85.9	78.6	P/P	60 - 150
Mandestrobin	111	101	P/P	50 - 150
MCPP	98.7	92.3	P/P	50 - 150
Naproxen	81.6	64.1	P/P	50 - 160
Primidone	99.2	90.0	P/P	60 - 150
Pyraclostrobin	106	97.9	P/P	60 - 150
Thiamethoxam	108	112	P/P	50 - 150
Tolfenpyrad	95.8	90.9	P/P	60 - 150
Triclopyr	115	95.0	P/P	50 - 150

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A101675

Included Lab Sample IDs: 2202272, 2202273

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A101686

Included Lab Sample IDs: 2202295, 2202296

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	114	123	P/P	50 - 160
Sucralose	120	114	P/P	50 - 160

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A101732

Included Lab Sample IDs: 2202272, 2202273

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	99.6	106	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A101855

Included Lab Sample IDs: 2202270, 2202271

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Bromide	97.1	97.8	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						0.498	
EPA 300.0 Rev. 2.1	Bromide	106	101	106	102			3.22
EPA 350.1 Rev. 2.0	Ammonia-N	101	96.1	97.3				0.908
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	103	109	107				2.19
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	99.0	95.8	96.2				0.497
EPA 365.1 Rev. 2.0	Total-P	110	107	106				0.827
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.6	99.5	98.9				0.605
EPA 8321B	2,4-D	99.2	60.7	85.5				30.9
	Acesulfame K	69.4	89.4	90.0				0.707
	Acetaminophen	80.4	91.1	96.9				6.09
	Acetamiprid	68.8	67.6	74.3				9.32
	Afidopyropen	30.5	22.4	30.5				30.6
	AMPA	114	120	122				0.939
	Bentazon	45.8	25.0	36.1				15.7
	Benzovindiflupyr	63.9	52.9	63.2				17.7
	Carbamazepine	49.6	38.9	50.0				24.9
	Clothianidin	63.9	52.6	65.8				22.3
	Dinotefuran	74.9	75.6	90.6				18.1
	Diuron	37.2	26.4	36.4				32.0
	Endothall	109	108	109				0.924
	Fenuron	89.8	76.0	83.3				9.21
	Fluridone	65.1	59.9	66.2				8.95
	Glufosinate	100	97.4	92.7				4.95
	Glyphosate	104	85.1	86.0				1.02
	Hydrocodone	92.8	70.5	90.5				24.8
	Ibuprofen	60.4	57.1	65.6				13.8
	Imazapyr	90.9	75.7	75.5				0.194
	Imidacloprid	87.8	103	107				3.33
	Linuron	42.7	40.6	45.3				10.8
	Mandestrobin	67.3	65.0	74.6				13.7
	MCPP	61.3	48.3	65.3				29.9
	Naproxen	51.6	36.3	32.2				12.0
	Primidone	70.3	64.3	71.1				10.0
	Pyraclostrobin	58.5	53.0	57.8				8.72
	Sucralose	116	122	119				2.67
	Thiamethoxam	89.3	85.2	112				27.0
	Tolfenpyrad	40.9	32.2	38.4				17.7
	Triclopyr	55.6	28.8	54.2				61.2
SM 2320 B-2011	Total Alkalinity	99.4					7.08	
SM 4500 F-C-2011	Fluoride	96.1	103	104				0.479
SM 5310 B-2011	Organic Carbon	95.6	101					0.0998

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2202270, 2202271
EPA 300.0 Rev. 2.1	Bromide in aqueous matrices	2202270, 2202271
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2202272, 2202273
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2202272, 2202273
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2202272, 2202273
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2202272, 2202273
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2202274, 2202275

Reference Method Descriptions

Method	Description	<u>Associated Samples</u>
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2202295, 2202296
EPA 8321B	Water soluble organic compounds by HPLC/MS/MS	2202295, 2202296
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2202270, 2202271
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2202270, 2202271
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2202270, 2202271
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2202272, 2202273

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	10/15/2020			10/15/2020 15:36	Yen Ta	2202270, 2202271
EPA 300.0 Rev. 2.1	10/15/2020			10/29/2020 03:03	Lipi Saha	2202270
	10/15/2020			10/29/2020 03:21	Lipi Saha	2202271
EPA 350.1 Rev. 2.0	10/15/2020			10/17/2020 15:42	Ping Hua	2202272
	10/15/2020			10/17/2020 15:44	Ping Hua	2202273
EPA 351.2 Rev. 2.0	10/15/2020	10/21/2020 13:53	David Boose	10/23/2020 15:20	Elliott Rodriguez	2202272
	10/15/2020	10/21/2020 13:53	David Boose	10/23/2020 15:28	Elliott Rodriguez	2202273
EPA 353.2 Rev. 2.0	10/15/2020			10/22/2020 08:53	Beverly Y. Sanders	2202273
	10/15/2020			10/22/2020 09:01	Beverly Y. Sanders	2202272
EPA 365.1 Rev. 2.0	10/15/2020	10/16/2020 14:57	Yen Ta	10/20/2020 11:52	Shengyu Wang	2202272
	10/15/2020	10/16/2020 14:57	Yen Ta	10/20/2020 11:53	Shengyu Wang	2202273
EPA 365.1 Rev. 2.0 dissolved	10/15/2020			10/15/2020 15:48	Virginia P. Brown	2202274
	10/15/2020			10/15/2020 15:58	Virginia P. Brown	2202275
EPA 8321B	10/15/2020	10/19/2020 09:00	Hoor Shaik	10/20/2020 12:34	Juyoung Kim	2202295
	10/15/2020	10/19/2020 09:00	Hoor Shaik	10/20/2020 13:09	Juyoung Kim	2202296
	10/15/2020	10/19/2020 10:15	Rebecca Ware	10/19/2020 13:16	Rebecca Ware	2202295
	10/15/2020	10/19/2020 10:15	Rebecca Ware	10/19/2020 13:45	Rebecca Ware	2202296
	10/15/2020	10/19/2020 10:15	Rebecca Ware	10/20/2020 11:56	Rebecca Ware	2202295
	10/15/2020	10/19/2020 10:15	Rebecca Ware	10/20/2020 12:18	Rebecca Ware	2202296
	10/15/2020	10/19/2020 10:15	Rebecca Ware	10/22/2020 02:39	Rebecca Ware	2202295
	10/15/2020	10/19/2020 10:15	Rebecca Ware	10/22/2020 03:03	Rebecca Ware	2202296
SM 2320 B-2011	10/15/2020			10/20/2020 06:24	Samantha Davila	2202270
	10/15/2020			10/20/2020 06:37	Samantha Davila	2202271
SM 2540 D-2011	10/15/2020			10/16/2020 20:07	Madeline Gruver	2202270, 2202271
SM 4500 F-C-2011	10/15/2020			10/20/2020 06:24	Samantha Davila	2202270
	10/15/2020			10/20/2020 06:37	Samantha Davila	2202271
SM 5310 B-2011	10/15/2020			10/19/2020 20:24	Lauren Lees	2202272
	10/15/2020			10/19/2020 21:00	Lauren Lees	2202273