

Chemical Analysis Report

NE-DIST-2020-01-22-01

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

Event Description: **Nassau East Boat 2020**
Request ID: **RQ-2020-01-20-14**
Customer: **NE-DIST**
Project ID: **SMP**

Send Reports to:
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8800 Baymeadows Way West
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Certified by: Colin Wright, Program Administrator

Date Certified: 12-FEB-2020 10:23

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: Metals, 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: Thomas CR aprox. 7 mi Below City Prison

Collection Date/Time: 01/21/2020 12:15

Field ID: G4NE0299

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2150742	EPA 180.1 Rev. 2.0	Turbidity	7.6		NTU	P377777	
	EPA 300.0 Rev. 2.1	Bromide	1.4		mg Br/L	P377850	
	SM 2320 B-2011	Total Alkalinity	33		mg CaCO3/L	P377699	
	SM 2540 D-2011	TSS	8	I	mg/L	P377693	
	SM 4500 F-C-2011	Fluoride	0.10		mg F/L	P377704	
2150744	EPA 350.1 Rev. 2.0	Ammonia-N	0.052		mg N/L	P378014	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.3		mg N/L	P377986	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.067		mg N/L	P377840	
	EPA 365.1 Rev. 2.0	Total-P	0.18		mg P/L	P378251	
	SM 5310 B-2011	Organic Carbon	37		mg C/L	P377829	
2150746	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.14		mg P/L	P377564	
2150765	EPA 8321B	2,4-D	0.0020	U	ug/L	P377536	
		Acesulfame K**	0.10	U	ug/L	P377652	
		AMPA**	0.10	U	ug/L	P377652	
		Sucralose**	0.14	IJ	ug/L	P377652	MS
		Acetaminophen**	0.0080	U	ug/L	P377536	
		Acetamiprid**	0.0020	U	ug/L	P377536	
		Endothall**	0.25	UJ	ug/L	P377652	MS
		Glufosinate**	0.10	U	ug/L	P377652	
		Glyphosate**	0.10	U	ug/L	P377652	
		Afidopyropen**	0.0020	UJ	ug/L	P377536	
		Bentazon	8.0E-04	U	ug/L	P377536	
		Benzovindiflupyr**	0.0020	UJ	ug/L	P377536	
		Carbamazepine**	8.0E-04	U	ug/L	P377536	
		Clothianidin**	0.0020	U	ug/L	P377536	
		Dinotefuran**	0.0020	U	ug/L	P377536	
		Diuron	0.0020	U	ug/L	P377536	
		Fenuron	0.016	U	ug/L	P377536	
		Fluridone**	8.0E-04	U	ug/L	P377536	
		Imazapyr**	0.069		ug/L	P377536	
		Hydrocodone**	0.0020	U	ug/L	P377536	
		Ibuprofen**	0.020	U	ug/L	P377536	
		Imidacloprid	0.0020	U	ug/L	P377536	MS
		Linuron	0.0040	U	ug/L	P377536	
		Mandestrobin**	0.0020	UJ	ug/L	P377536	
		MCP	0.0020	U	ug/L	P377536	
		Naproxen**	0.0080	U	ug/L	P377536	RPD
		Primidone**	0.0040	U	ug/L	P377536	
		Pyraclostrobin**	0.0020	U	ug/L	P377536	
		Thiamethoxam**	0.0020	U	ug/L	P377536	
		Tolfenpyrad**	0.0020	U	ug/L	P377536	
		Triclopyr**	0.0040	U	ug/L	P377536	
2150769	EPA 200.7 Rev. 4.4	Iron	980		ug/L	P377623	

Field ID: G4NE0299

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2150769	EPA 200.7 Rev. 4.4	Manganese	39.0		ug/L	P377623	
		Zinc	5.0	U	ug/L	P377623	
	EPA 200.8 Rev. 5.4	Aluminum	512		ug/L	P377623	
		Antimony	0.058	I	ug/L	P377623	
		Arsenic	1.61		ug/L	P377623	
		Cadmium	0.020	U	ug/L	P377623	
		Chromium	1.0	I	ug/L	P377623	
		Copper	0.74	I	ug/L	P377623	
		Lead	0.61		ug/L	P377623	
		Nickel	0.79	I	ug/L	P377623	
		Selenium	0.20	U	ug/L	P377623	
		Silver	0.010	U	ug/L	P377623	
		Thallium	0.10	U	ug/L	P377623	

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: J - second source check standards for some analytes were not available for analysis. MS accuracy for diuron and 2,4-D could not be assessed due to high concentration of parameter in the spiked sample.

EPA 8321B: Refer to the Lab Analysis Report for an explanation of QC Codes.

EPA 8321B: MDL elevated due to matrix interference. Refer to the Lab Analysis Report for an explanation of QC Codes.

Sample Location: Thomas CR 6.0 mi Below City Prison

Collection Date/Time: 01/21/2020 12:40

Field ID: G4NE0008

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2150743	EPA 180.1 Rev. 2.0	Turbidity	7.8		NTU	P377777	
	EPA 300.0 Rev. 2.1	Bromide	1.1		mg Br/L	P377850	
	SM 2320 B-2011	Total Alkalinity	32		mg CaCO3/L	P377699	
	SM 2540 D-2011	TSS	6	I	mg/L	P377693	
	SM 4500 F-C-2011	Fluoride	0.098	I	mg F/L	P377704	
2150745	EPA 350.1 Rev. 2.0	Ammonia-N	0.055		mg N/L	P378014	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.2		mg N/L	P377986	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.065		mg N/L	P377840	
	EPA 365.1 Rev. 2.0	Total-P	0.19		mg P/L	P378251	
	SM 5310 B-2011	Organic Carbon	38		mg C/L	P377829	
2150747	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.14		mg P/L	P377567	
2150766	EPA 8321B	2,4-D	0.0020	U	ug/L	P377536	
		Acesulfame K**	0.10	U	ug/L	P377652	
		AMPA**	0.10	U	ug/L	P377652	
		Sucralose**	0.18	I	ug/L	P377652	MS
		Acetaminophen**	0.0080	U	ug/L	P377536	
		Acetamiprid**	0.0020	U	ug/L	P377536	
		Endothall**	0.25	U	ug/L	P377652	MS
		Glufosinate**	0.10	U	ug/L	P377652	
		Glyphosate**	0.10	U	ug/L	P377652	
		Afidopyropen**	0.0020	UJ	ug/L	P377536	
		Bentazon	8.0E-04	U	ug/L	P377536	
		Benzovindiflupyr**	0.0020	UJ	ug/L	P377536	
		Carbamazepine**	8.0E-04	U	ug/L	P377536	
		Clothianidin**	0.0020	U	ug/L	P377536	
		Dinotefuran**	0.0020	U	ug/L	P377536	
		Diuron	0.0020	U	ug/L	P377536	
		Fenuron	0.016	U	ug/L	P377536	
		Fluridone**	8.0E-04	U	ug/L	P377536	
		Imazapyr**	0.069		ug/L	P377536	
		Hydrocodone**	0.0020	U	ug/L	P377536	
		Ibuprofen**	0.020	U	ug/L	P377536	
		Imidacloprid	0.0020	U	ug/L	P377536	MS
		Linuron	0.0040	U	ug/L	P377536	
		Mandestrobin**	0.0020	UJ	ug/L	P377536	
		MCP	0.0020	U	ug/L	P377536	
		Naproxen**	0.0080	U	ug/L	P377536	RPD
		Primidone**	0.0040	U	ug/L	P377536	
		Pyraclostrobin**	0.0020	U	ug/L	P377536	
		Thiamethoxam**	0.0020	U	ug/L	P377536	
		Tolfenpyrad**	0.0020	U	ug/L	P377536	
		Triclopyr**	0.0040	U	ug/L	P377536	
2150770	EPA 200.7 Rev. 4.4	Iron	850		ug/L	P377623	

Field ID: G4NE0008

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2150770	EPA 200.7 Rev. 4.4	Manganese	37.2		ug/L	P377623	
		Zinc	5.0	U	ug/L	P377623	
	EPA 200.8 Rev. 5.4	Aluminum	397		ug/L	P377623	
		Antimony	0.067	I	ug/L	P377623	
		Arsenic	1.36		ug/L	P377623	
		Cadmium	0.020	U	ug/L	P377623	
		Chromium	0.90	I	ug/L	P377623	
		Copper	0.73	I	ug/L	P377623	
		Lead	0.60		ug/L	P377623	
		Nickel	0.79	I	ug/L	P377623	
		Selenium	0.20	U	ug/L	P377623	
		Silver	0.010	U	ug/L	P377623	
		Thallium	0.10	U	ug/L	P377623	

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: J - second source check standards for some analytes were not available for analysis. MS accuracy for diuron and 2,4-D could not be assessed due to high concentration of parameter in the spiked sample.

EPA 8321B: MDL elevated due to matrix interference.

Sample Location: Thomas CR 4 mi Below City Prison

Collection Date/Time: 01/21/2020 13:15

Field ID: 19020033

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2150748	EPA 180.1 Rev. 2.0	Turbidity	5.0		NTU	P377777	
	EPA 300.0 Rev. 2.1	Bromide	0.52		mg Br/L	P377850	
	SM 2320 B-2011	Total Alkalinity	28		mg CaCO3/L	P377699	
	SM 2540 D-2011	TSS	5	I	mg/L	P377693	
	SM 4500 F-C-2011	Fluoride	0.079	I	mg F/L	P377704	
2150749	EPA 350.1 Rev. 2.0	Ammonia-N	0.033		mg N/L	P378017	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.4		mg N/L	P377987	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.027		mg N/L	P377840	
	EPA 365.1 Rev. 2.0	Total-P	0.21		mg P/L	P378251	
	SM 5310 B-2011	Organic Carbon	41		mg C/L	P377829	
2150750	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.15		mg P/L	P377567	
2150771	EPA 200.7 Rev. 4.4	Iron	800		ug/L	P377623	
		Manganese	19.5		ug/L	P377623	
		Zinc	12	I	ug/L	P377623	
	EPA 200.8 Rev. 5.4	Aluminum	469		ug/L	P377623	
		Antimony	0.061	I	ug/L	P377623	
		Arsenic	1.01		ug/L	P377623	
		Cadmium	0.020	U	ug/L	P377623	
		Chromium	0.95	I	ug/L	P377623	
		Copper	0.62	I	ug/L	P377623	
		Lead	0.56		ug/L	P377623	
		Nickel	0.80	I	ug/L	P377623	
		Selenium	0.20	U	ug/L	P377623	
		Silver	0.010	U	ug/L	P377623	
		Thallium	0.10	U	ug/L	P377623	

Ref. Method and Comment:

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P377777

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P377623

Component	Result	Code	Units
Iron	30	U	ug/L
Manganese	1.0	U	ug/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P377623

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Antimony	0.050	U	ug/L
Arsenic	0.050	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.40	U	ug/L
Copper	0.40	U	ug/L
Lead	0.20	U	ug/L
Nickel	0.50	U	ug/L
Selenium	0.20	U	ug/L
Silver	0.010	U	ug/L
Thallium	0.10	U	ug/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P377850

Component	Result	Code	Units
Bromide	0.013	U	mg Br/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P378014

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P378017

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P377986

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P377987

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

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P377840

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

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P378251

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P377564

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P377567

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

Reference Method: EPA 8321B
 Batch ID: P377536

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
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
MCP	0.0020	U	ug/L
Naproxen	0.0080	U	ug/L
Primidone	0.0040	U	ug/L
Pyraclostrobin	0.0020	U	ug/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B
Batch ID: P377536

Component	Result	Code	Units
Thiamethoxam	0.0020	U	ug/L
Tolfenpyrad	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: EPA 8321B
Batch ID: P377652

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: P377699

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

Reference Method: SM 2540 D-2011
Batch ID: P377693

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P377704

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P377829

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P377623

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Iron	105		P	85 - 115
Manganese	102		P	85 - 115
Zinc	99.9		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P377623

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	102		P	85 - 115
Antimony	103		P	85 - 115
Arsenic	107		P	85 - 115
Cadmium	102		P	85 - 115
Chromium	104		P	85 - 115
Copper	107		P	85 - 115
Lead	103		P	85 - 115
Nickel	102		P	85 - 115
Selenium	105		P	85 - 115
Silver	106		P	85 - 115
Thallium	104		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P377850

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P378014

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	98.3		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P378017

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P377986

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P377987

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	98.5		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P377840

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: P378251

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P377564

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	98.4		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P377567

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

Reference Method: EPA 8321B
Batch ID: P377536

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	122		P	40 - 160
Acetaminophen	78.9		P	30 - 160
Acetamiprid	79.6		P	40 - 160
Afidopyropen	93.6		P	40 - 160
Bentazon	61.3		P	30 - 160
Benzovindiflupyr	81.8		P	40 - 160
Carbamazepine	97.0		P	40 - 160
Clothianidin	86.4		P	40 - 160
Dinotefuran	101		P	40 - 160
Diuron	73.0		P	40 - 160
Fenuron	102		P	40 - 160
Fluridone	95.3		P	40 - 160
Hydrocodone	91.5		P	40 - 160
Ibuprofen	81.9		P	30 - 160
Imazapyr	77.0		P	40 - 160
Imidacloprid	107		P	40 - 160
Linuron	72.9		P	40 - 160
Mandestrobin	89.0		P	40 - 160
MCPP	108		P	40 - 160
Naproxen	82.7		P	40 - 160
Primidone	93.8		P	40 - 160
Pyraclostrobin	82.8		P	30 - 160
Thiamethoxam	100		P	40 - 160
Tolfenpyrad	65.6		P	40 - 160
Triclopyr	90.3		P	30 - 160

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P377652

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	131		P	40 - 150
AMPA	104		P	40 - 150
Endothall	82.9		P	40 - 150
Glufosinate	74.4		P	40 - 150
Glyphosate	69.0		P	40 - 140
Sucralose	82.3		P	40 - 150

Reference Method: SM 2320 B-2011
Batch ID: P377699

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	105		P	98 - 106

Reference Method: SM 4500 F-C-2011
Batch ID: P377704

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.5		P	92 - 103

Reference Method: SM 5310 B-2011
Batch ID: P377829

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.2		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P377623

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2150814	Iron	107	102	P/P	80 - 120
2150814	Manganese	101	98.2	P/P	80 - 120
2150814	Zinc	101	96.2	P/P	80 - 120
2150837	Iron	103		P	80 - 120
2150837	Manganese	98.1		P	80 - 120
2150837	Zinc	100		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P377623

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2150814	Aluminum	102	103	P/P	80 - 120
2150814	Antimony	108	109	P/P	80 - 120
2150814	Arsenic	109	111	P/P	80 - 120
2150814	Cadmium	105	106	P/P	80 - 120
2150814	Chromium	108	110	P/P	80 - 120
2150814	Copper	104	105	P/P	80 - 120
2150814	Lead	105	107	P/P	80 - 120
2150814	Nickel	106	106	P/P	80 - 120
2150814	Selenium	106	107	P/P	80 - 120
2150814	Silver	102	103	P/P	80 - 120
2150814	Thallium	104	106	P/P	80 - 120
2150837	Aluminum	103		P	80 - 120
2150837	Antimony	108		P	80 - 120
2150837	Arsenic	108		P	80 - 120
2150837	Cadmium	105		P	80 - 120
2150837	Chromium	106		P	80 - 120
2150837	Copper	99.5		P	80 - 120
2150837	Lead	107		P	80 - 120
2150837	Nickel	106		P	80 - 120
2150837	Selenium	105		P	80 - 120
2150837	Silver	98.7		P	80 - 120
2150837	Thallium	107		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P377850

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2150748	Bromide	93.0	95.8	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P378014

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2150605	Ammonia-N	98.8	102	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P378017

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2150783	Ammonia-N	102	101	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P377986

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2150716	Kjeldahl Nitrogen	97.8	105	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P377840

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2150783	NO2NO3-N	98.3	98.3	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P378251

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2150604	Total-P	100	105	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P377564

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2150379	O-Phosphate-P	96.7	99.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P377567

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2150735	O-Phosphate-P	92.5	94.1	P/P	90 - 110

Reference Method: EPA 8321B
 Batch ID: P377536

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2150536	Acetaminophen	85.8	79.2	P/P	30 - 160
2150536	Acetamiprid	106	95.8	P/P	40 - 160
2150536	Afidopyropen	105	96.5	P/P	40 - 160
2150536	Bentazon	58.0	51.7	P/P	30 - 160
2150536	Benzovindiflupyr	86.9	80.8	P/P	40 - 160
2150536	Carbamazepine	96.6	87.8	P/P	40 - 160
2150536	Clothianidin	96.1	88.2	P/P	40 - 160
2150536	Dinotefuran	141	132	P/P	40 - 160
2150536	Fenuron	99.0	90.8	P/P	40 - 160
2150536	Fluridone	100	91.2	P/P	40 - 160
2150536	Hydrocodone	98.2	95.2	P/P	40 - 160
2150536	Ibuprofen	90.5	77.5	P/P	30 - 160
2150536	Imazapyr	116	96.9	P/P	40 - 160
2150536	Imidacloprid	161	134	F/P	40 - 160
2150536	Linuron	81.6	71.9	P/P	40 - 160
2150536	Mandestrobin	99.5	89.6	P/P	40 - 160
2150536	MCP	124	106	P/P	40 - 160
2150536	Naproxen	93.3	64.2	P/P	40 - 160
2150536	Primidone	95.3	93.8	P/P	40 - 160
2150536	Pyraclostrobin	97.1	87.1	P/P	30 - 160
2150536	Thiamethoxam	141	127	P/P	40 - 160
2150536	Tolfenpyrad	73.0	66.5	P/P	40 - 160

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P377536

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2150536	Triclopyr	96.3	78.3	P/P	30 - 160

Reference Method: EPA 8321B
Batch ID: P377652

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2150765	Acesulfame K	51.1	51.4	P/P	40 - 150
2150765	AMPA	45.3	47.1	P/P	40 - 150
2150765	Endothall	146	185	P/F	40 - 150
2150765	Glufosinate	62.2	59.5	P/P	40 - 150
2150765	Glyphosate	73.4	68.9	P/P	40 - 140
2150765	Sucralose	15.9	16.3	F/F	40 - 150

Reference Method: SM 4500 F-C-2011
Batch ID: P377704

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2150322	Fluoride	99.6	99.6	P/P	89 - 106

Reference Method: SM 5310 B-2011
Batch ID: P377829

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2150832	Organic Carbon	98.4	99.0	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P377777

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2150601	Turbidity	6.41	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P377623

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2150814	Iron	4.24	Spike	P	0 - 20
2150814	Manganese	2.61	Spike	P	0 - 20
2150814	Zinc	4.74	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P377623

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2150814	Aluminum	1.12	Spike	P	0 - 20
2150814	Antimony	0.988	Spike	P	0 - 20
2150814	Arsenic	2.46	Spike	P	0 - 20
2150814	Cadmium	0.361	Spike	P	0 - 20
2150814	Chromium	1.50	Spike	P	0 - 20
2150814	Copper	0.809	Spike	P	0 - 20
2150814	Lead	1.88	Spike	P	0 - 20
2150814	Nickel	0.541	Spike	P	0 - 20
2150814	Selenium	1.45	Spike	P	0 - 20
2150814	Silver	0.829	Spike	P	0 - 20
2150814	Thallium	1.40	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P377850

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2150748	Bromide	1.43	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P378014

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2150605	Ammonia-N	1.92	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P378017

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2150783	Ammonia-N	0.213	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P377986

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2150716	Kjeldahl Nitrogen	5.28	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P377987

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2150778	Kjeldahl Nitrogen	5.12	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P377840

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2150783	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P378251

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2150604	Total-P	3.44	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P377564

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2150379	O-Phosphate-P	2.95	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P377567

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2150735	O-Phosphate-P	1.61	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P377536

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2150536	2,4-D	15.2	Spike	P	0 - 30
2150536	Acetaminophen	8.09	Spike	P	0 - 30
2150536	Acetamiprid	9.81	Spike	P	0 - 30
2150536	Afidopyropen	8.86	Spike	P	0 - 30
2150536	Bentazon	11.5	Spike	P	0 - 30
2150536	Benzovindiflupyr	7.35	Spike	P	0 - 30
2150536	Carbamazepine	9.62	Spike	P	0 - 30
2150536	Clothianidin	8.56	Spike	P	0 - 30
2150536	Dinotefuran	6.60	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P377536

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2150536	Diuron	3.45	Spike	P	0 - 30
2150536	Fenuron	8.66	Spike	P	0 - 30
2150536	Fluridone	9.70	Spike	P	0 - 30
2150536	Hydrocodone	3.13	Spike	P	0 - 30
2150536	Ibuprofen	15.5	Spike	P	0 - 30
2150536	Imazapyr	18.0	Spike	P	0 - 30
2150536	Imidacloprid	18.2	Spike	P	0 - 30
2150536	Linuron	12.6	Spike	P	0 - 30
2150536	Mandestrobin	10.5	Spike	P	0 - 30
2150536	MCP	16.4	Spike	P	0 - 30
2150536	Naproxen	36.9	Spike	F	0 - 30
2150536	Primidone	1.55	Spike	P	0 - 30
2150536	Pyraclostrobin	10.8	Spike	P	0 - 30
2150536	Thiamethoxam	10.1	Spike	P	0 - 30
2150536	Tolfenpyrad	9.33	Spike	P	0 - 30
2150536	Triclopyr	20.6	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P377652

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2150765	Acesulfame K	0.560	Spike	P	0 - 30
2150765	AMPA	3.95	Spike	P	0 - 30
2150765	Endothall	23.3	Spike	P	0 - 30
2150765	Glufosinate	4.41	Spike	P	0 - 30
2150765	Glyphosate	6.35	Spike	P	0 - 30
2150765	Sucralose	2.24	Spike	P	0 - 30

Reference Method: SM 2320 B-2011
Batch ID: P377699

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2150322	Total Alkalinity	0.476	Sample	P	0 - 2.8

Reference Method: SM 4500 F-C-2011
Batch ID: P377704

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2150322	Fluoride	0.0	Spike	P	0 - 2.5

Reference Method: SM 5310 B-2011
Batch ID: P377829

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2150832	Organic Carbon	0.348	Spike	P	0 - 20

Quality Assurance Report Precision

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

Quality Assurance Report Surrogates

Lab Sample ID: 2150765
Field Sample ID: G4NE0299

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	94.9	P	30 - 160
EPA 8321B	2,4-D-d3	94.9	P	30 - 160
EPA 8321B	Acetaminophen-d4	91.6	P	30 - 160
EPA 8321B	Acetaminophen-d4	91.6	P	30 - 160
EPA 8321B	Carbamazepine-d10	83.0	P	30 - 160
EPA 8321B	Carbamazepine-d10	83.0	P	30 - 160
EPA 8321B	Diuron-d6	54.0	P	30 - 160
EPA 8321B	Diuron-d6	54.0	P	30 - 160
EPA 8321B	Endothall-d6	156	P	30 - 160
EPA 8321B	Endothall-d6	156	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	106	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	106	P	30 - 160
EPA 8321B	Ibuprofen-d3	67.2	P	30 - 160
EPA 8321B	Ibuprofen-d3	67.2	P	30 - 160
EPA 8321B	Primidone-d5	72.2	P	30 - 160
EPA 8321B	Primidone-d5	72.2	P	30 - 160
EPA 8321B	Sucralose-d6	87.8	P	30 - 160
EPA 8321B	Sucralose-d6	87.8	P	30 - 160

Lab Sample ID: 2150766
Field Sample ID: G4NE0008

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	93.6	P	30 - 160
EPA 8321B	2,4-D-d3	93.6	P	30 - 160
EPA 8321B	Acetaminophen-d4	87.7	P	30 - 160
EPA 8321B	Acetaminophen-d4	87.7	P	30 - 160
EPA 8321B	Carbamazepine-d10	78.7	P	30 - 160
EPA 8321B	Carbamazepine-d10	78.7	P	30 - 160
EPA 8321B	Diuron-d6	49.5	P	30 - 160
EPA 8321B	Diuron-d6	49.5	P	30 - 160
EPA 8321B	Endothall-d6	72.7	P	30 - 160
EPA 8321B	Endothall-d6	72.7	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	113	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	113	P	30 - 160
EPA 8321B	Ibuprofen-d3	63.3	P	30 - 160
EPA 8321B	Ibuprofen-d3	63.3	P	30 - 160
EPA 8321B	Primidone-d5	67.7	P	30 - 160
EPA 8321B	Primidone-d5	67.7	P	30 - 160
EPA 8321B	Sucralose-d6	82.7	P	30 - 160
EPA 8321B	Sucralose-d6	82.7	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A97060

Included Lab Sample IDs: 2150746, 2150747, 2150750

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.6	97.1	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A97093

Included Lab Sample IDs: 2150769, 2150770, 2150771

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Iron	100	97.9	P/P	90 - 110
Iron	102	100	P/P	95 - 105
Manganese	101	101	P/P	95 - 105
Manganese	101	101	P/P	90 - 110
Zinc	97.6	99.2	P/P	95 - 105
Zinc	99.2	100	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A97099

Included Lab Sample IDs: 2150742, 2150743, 2150748

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	102	104	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A97099

Included Lab Sample IDs: 2150742, 2150743, 2150748

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

Reference Method: EPA 8321B

Run ID: A97116

Included Lab Sample IDs: 2150765, 2150766

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	137	86.6	P/P	60 - 160
Endothall	74.8	104	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A97121

Included Lab Sample IDs: 2150765, 2150766

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	114	88.5	P/P	50 - 150
Acetaminophen	107	102	P/P	60 - 160
Acetamiprid	112	105	P/P	50 - 150
Afidopyropen	105	103	P/P	50 - 150
Bentazon	87.0	91.6	P/P	50 - 160
Benzovindiflupyr	110	105	P/P	50 - 150
Carbamazepine	110	111	P/P	60 - 150
Clothianidin	108	104	P/P	60 - 150
Dinotefuran	118	98.7	P/P	50 - 150
Diuron	111	107	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A97121

Included Lab Sample IDs: 2150765, 2150766

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fenuron	110	107	P/P	60 - 150
Fluridone	108	109	P/P	60 - 160
Hydrocodone	106	112	P/P	60 - 150
Ibuprofen	89.1	101	P/P	50 - 160
Imazapyr	101	100	P/P	50 - 150
Imidacloprid	112	112	P/P	60 - 150
Linuron	106	114	P/P	60 - 150
Mandestrobin	110	108	P/P	50 - 150
MCPP	100	101	P/P	50 - 150
Naproxen	125	111	P/P	50 - 160
Primidone	93.9	108	P/P	60 - 150
Pyraclostrobin	109	108	P/P	60 - 150
Thiamethoxam	104	105	P/P	50 - 150
Tolfenpyrad	113	107	P/P	60 - 150
Triclopyr	110	102	P/P	50 - 150

Reference Method: EPA 8321B

Run ID: A97137

Included Lab Sample IDs: 2150765, 2150766

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	115	116	P/P	60 - 160
Glufosinate	82.0	75.5	P/P	60 - 160
Glyphosate	77.4	84.9	P/P	60 - 160

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A97138

Included Lab Sample IDs: 2150744, 2150745, 2150749

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	99.5	100	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A97140

Included Lab Sample IDs: 2150742, 2150743, 2150748

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	101	P/P	95 - 105

Reference Method: SM 5310 B-2011

Run ID: A97157

Included Lab Sample IDs: 2150744, 2150745, 2150749

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	102	104	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A97161

Included Lab Sample IDs: 2150742, 2150743, 2150748

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
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Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A97161

Included Lab Sample IDs: 2150742, 2150743, 2150748

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Bromide	98.1	97.1	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A97162

Included Lab Sample IDs: 2150769, 2150770, 2150771

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	104	103	P/P	90 - 110
Aluminum	99.8	104	P/P	90 - 110
Antimony	98.0	98.4	P/P	90 - 110
Antimony	98.4	102	P/P	90 - 110
Arsenic	101	101	P/P	90 - 110
Arsenic	104	101	P/P	90 - 110
Cadmium	97.7	101	P/P	90 - 110
Cadmium	97.8	97.7	P/P	90 - 110
Chromium	101	103	P/P	90 - 110
Chromium	99.0	101	P/P	90 - 110
Copper	103	105	P/P	90 - 110
Copper	105	102	P/P	90 - 110
Lead	100	99.7	P/P	90 - 110
Lead	99.7	101	P/P	90 - 110
Nickel	100	99.8	P/P	90 - 110
Nickel	101	100	P/P	90 - 110
Selenium	102	102	P/P	90 - 110
Selenium	102	104	P/P	90 - 110
Silver	102	103	P/P	90 - 110
Silver	103	105	P/P	90 - 110
Thallium	99.5	99.6	P/P	90 - 110
Thallium	99.6	98.6	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A97220

Included Lab Sample IDs: 2150744, 2150745

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A97221

Included Lab Sample IDs: 2150749

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.6	99.5	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A97234

Included Lab Sample IDs: 2150744, 2150745, 2150749

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	96.7	97.9	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A97234

Included Lab Sample IDs: 2150744, 2150745, 2150749

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	97.9	98.2	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A97273

Included Lab Sample IDs: 2150765, 2150766

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	88.6	83.1	P/P	60 - 160

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A97379

Included Lab Sample IDs: 2150744, 2150745, 2150749

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.8	98.3	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						6.41	
EPA 200.7 Rev. 4.4	Iron	105	107	102	103			4.24
	Manganese	102	101	98.2	98.1			2.61
	Zinc	99.9	101	96.2	100			4.74
EPA 200.8 Rev. 5.4	Aluminum	102	102	103	103			1.12
	Antimony	103	108	109	108			0.988
	Arsenic	107	109	111	108			2.46
	Cadmium	102	105	106	105			0.361
	Chromium	104	108	110	106			1.50
	Copper	107	104	105	99.5			0.809
	Lead	103	105	107	107			1.88
	Nickel	102	106	106	106			0.541
	Selenium	105	106	107	105			1.45
	Silver	106	102	103	98.7			0.829
	Thallium	104	104	106	107			1.40
EPA 300.0 Rev. 2.1	Bromide	110	93.0	95.8				1.43
EPA 350.1 Rev. 2.0	Ammonia-N	98.3	98.8	102				1.92
	Ammonia-N	98.2	102	101				0.213
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	98.6	105	97.8				5.28
	Kjeldahl Nitrogen	98.5						5.12
EPA 353.2 Rev. 2.0	NO2NO3-N	99.0	98.3	98.3				0.0
EPA 365.1 Rev. 2.0	Total-P	103	100	105				3.44
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.4	96.7	99.6				2.95
	O-Phosphate-P	97.1	92.5	94.1				1.61
EPA 8321B	2,4-D	122						15.2
	Acesulfame K	131	51.1	51.4				0.560
	Acetaminophen	78.9	85.8	79.2				8.09
	Acetamiprid	79.6	106	95.8				9.81
	Afidopyropen	93.6	105	96.5				8.86
	AMPA	104	47.1	45.3				3.95
	Bentazon	61.3	58.0	51.7				11.5
	Benzovindiflupyr	81.8	86.9	80.8				7.35
	Carbamazepine	97.0	96.6	87.8				9.62
	Clothianidin	86.4	96.1	88.2				8.56
	Dinotefuran	101	141	132				6.60
	Diuron	73.0						3.45
	Endothall	82.9	146	185				23.3
	Fenuron	102	99.0	90.8				8.66
	Fluridone	95.3	100	91.2				9.70
	Glufosinate	74.4	62.2	59.5				4.41
	Glyphosate	69.0	73.4	68.9				6.35
	Hydrocodone	91.5	98.2	95.2				3.13
	Ibuprofen	81.9	90.5	77.5				15.5
	Imazapyr	77.0	116	96.9				18.0
	Imidacloprid	107	161	134				18.2
	Linuron	72.9	81.6	71.9				12.6
	Mandestrobin	89.0	99.5	89.6				10.5
	MCPP	108	124	106				16.4
	Naproxen	82.7	93.3	64.2				36.9
	Primidone	93.8	95.3	93.8				1.55
	Pyraclostrobin	82.8	97.1	87.1				10.8
	Sucralose	82.3	15.9	16.3				2.24
	Thiamethoxam	100	141	127				10.1
	Tolfenpyrad	65.6	73.0	66.5				9.33

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
EPA 8321B	Triclopyr	90.3	96.3	78.3		20.6
SM 2320 B-2011	Total Alkalinity	105			0.476	
SM 4500 F-C-2011	Fluoride	99.5	99.6	99.6		0.0
SM 5310 B-2011	Organic Carbon	98.2	98.4	99.0		0.348

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2150742, 2150743, 2150748
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2150769, 2150770, 2150771
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2150769, 2150770, 2150771
EPA 300.0 Rev. 2.1	Bromide in aqueous matrices	2150742, 2150743, 2150748
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2150744, 2150745, 2150749
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2150744, 2150745, 2150749
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2150744, 2150745, 2150749
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2150744, 2150745, 2150749
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2150746, 2150747, 2150750
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2150765, 2150766
EPA 8321B	Water soluble organic compounds by HPLC/MS/MS	2150765, 2150766
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2150742, 2150743, 2150748
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2150742, 2150743, 2150748
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2150742, 2150743, 2150748
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2150744, 2150745, 2150749

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	01/22/2020			01/22/2020 17:08	Yen Ta	2150742, 2150743, 2150748
EPA 200.7 Rev. 4.4	01/22/2020	01/23/2020 15:15	Elliott D. Healy	01/24/2020 13:07	Betina Topolski	2150769
	01/22/2020	01/23/2020 15:15	Elliott D. Healy	01/24/2020 13:15	Betina Topolski	2150770
	01/22/2020	01/23/2020 15:15	Elliott D. Healy	01/24/2020 13:49	Betina Topolski	2150771
EPA 200.8 Rev. 5.4	01/22/2020	01/23/2020 15:15	Elliott D. Healy	01/28/2020 20:48	Martin Acosta	2150769
	01/22/2020	01/23/2020 15:15	Elliott D. Healy	01/28/2020 21:26	Martin Acosta	2150770
	01/22/2020	01/23/2020 15:15	Elliott D. Healy	01/28/2020 21:36	Martin Acosta	2150771
EPA 300.0 Rev. 2.1	01/22/2020			01/28/2020 21:11	Lipi Saha	2150748
	01/22/2020			01/28/2020 22:20	Lipi Saha	2150742
	01/22/2020			01/28/2020 22:37	Lipi Saha	2150743
EPA 350.1 Rev. 2.0	01/22/2020			01/29/2020 14:23	Ping Hua	2150744
	01/22/2020			01/29/2020 14:31	Ping Hua	2150745
	01/22/2020			01/30/2020 13:27	Ping Hua	2150749
EPA 351.2 Rev. 2.0	01/22/2020	01/30/2020 17:30	Jhamieka S. Greenwood	01/31/2020 08:33	Jhamieka S. Greenwood	2150744
	01/22/2020	01/30/2020 17:30	Jhamieka S. Greenwood	01/31/2020 08:34	Jhamieka S. Greenwood	2150745
	01/22/2020	01/30/2020 17:30	Jhamieka S. Greenwood	01/31/2020 08:50	Jhamieka S. Greenwood	2150749
EPA 353.2 Rev. 2.0	01/22/2020			01/28/2020 10:21	Beverly Y. Sanders	2150744
	01/22/2020			01/28/2020 10:23	Beverly Y. Sanders	2150745
	01/22/2020			01/28/2020 10:24	Beverly Y. Sanders	2150749
EPA 365.1 Rev. 2.0	01/22/2020	02/04/2020 12:34	Yen Ta	02/05/2020 16:39	Benjamin T. Nordmann	2150744
	01/22/2020	02/04/2020 12:34	Yen Ta	02/05/2020 16:40	Benjamin T. Nordmann	2150745
	01/22/2020	02/04/2020 12:34	Yen Ta	02/05/2020 16:41	Benjamin T. Nordmann	2150749
EPA 365.1 Rev. 2.0 dissolved	01/22/2020			01/22/2020 14:07	Carlos Miranda	2150746
	01/22/2020			01/22/2020 14:09	Carlos Miranda	2150747
	01/22/2020			01/22/2020 14:10	Carlos Miranda	2150750
EPA 8321B	01/22/2020	01/23/2020 10:00	Hoor Shaik	01/25/2020 03:12	Juyoung Kim	2150765
	01/22/2020	01/23/2020 10:00	Hoor Shaik	01/25/2020 03:47	Juyoung Kim	2150766
	01/22/2020	01/24/2020 10:30	Rebecca Ware	01/24/2020 14:05	Rebecca Ware	2150765
	01/22/2020	01/24/2020 10:30	Rebecca Ware	01/24/2020 14:19	Rebecca Ware	2150766
	01/22/2020	01/24/2020 10:30	Rebecca Ware	01/27/2020 10:50	Rebecca Ware	2150765
	01/22/2020	01/24/2020 10:30	Rebecca Ware	01/27/2020 11:01	Rebecca Ware	2150766
	01/22/2020	01/24/2020 10:30	Rebecca Ware	01/30/2020 11:05	Rebecca Ware	2150765
	01/22/2020	01/24/2020 10:30	Rebecca Ware	01/30/2020 11:17	Rebecca Ware	2150766
SM 2320 B-2011	01/22/2020			01/25/2020 21:03	Dale L. Simmons	2150742
	01/22/2020			01/25/2020 21:16	Dale L. Simmons	2150743
	01/22/2020			01/25/2020 21:28	Dale L. Simmons	2150748
SM 2540 D-2011	01/22/2020			01/23/2020 17:00	Blanca Fach	2150742, 2150743, 2150748
SM 4500 F-C-2011	01/22/2020			01/25/2020 21:03	Dale L. Simmons	2150742
	01/22/2020			01/25/2020 21:16	Dale L. Simmons	2150743
	01/22/2020			01/25/2020 21:28	Dale L. Simmons	2150748

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 5310 B-2011	01/22/2020			01/28/2020 05:41	Madeline Funaro	2150744
	01/22/2020			01/28/2020 05:55	Madeline Funaro	2150745
	01/22/2020			01/28/2020 06:08	Madeline Funaro	2150749