

Chemical Analysis Report

NE-DIST-2020-07-28-02

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

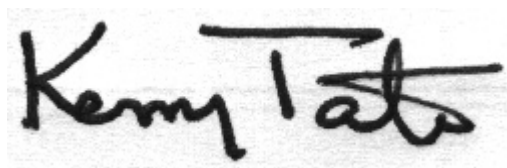
Event Description: **Bmap 1& 2 2020 SMP**
Request ID: **RQ-2020-07-27-11**
Customer: **NE-DIST**
Project ID: **SMP**

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Certified by: Kerry Tate, Ph.D., Environmental Administrator

Date Certified: 12-AUG-2020 11:20

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.

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: NW Tributary to Open Cr at Hodges

Collection Date/Time: 07/27/2020 12:40

Field ID: 20030848

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2186501	EPA 180.1 Rev. 2.0	Turbidity	3.3		NTU	P385305	
	EPA 300.0 Rev. 2.1	Chloride	38		mg Cl/L	P385626	
		Sulfate	61		mg SO4/L	P385630	
	SM 2120 B-2011	Color (true)	36		PCU	P385278	
	SM 2320 B-2011	Total Alkalinity	72		mg CaCO3/L	P385565	
	SM 2540 C-2011	TDS	269		mg/L	P385615	
	SM 2540 D-2011	TSS	4	I	mg/L	P385653	
	SM 4500 F-C-2011	Fluoride	0.093	I	mg F/L	P385382	
2186502	EPA 350.1 Rev. 2.0	Ammonia-N	0.064		mg N/L	P385480	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.52	J	mg N/L	P385375	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.20		mg N/L	P385300	
	EPA 365.1 Rev. 2.0	Total-P	0.065		mg P/L	P385506	
	SM 5310 B-2011	Organic Carbon	11		mg C/L	P385449	
2186503	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.025		mg P/L	P385286	
2186516	EPA 8321B	2,4-D	0.10		ug/L	P385308	
		Acesulfame K**	0.10	U	ug/L	P385298	
		AMPA**	0.10	U	ug/L	P385298	
		Sucralose**	0.11		ug/L	P385298	
		Acetaminophen**	0.0080	U	ug/L	P385308	
		Acetamiprid**	0.0020	U	ug/L	P385308	
		Endothall**	0.25	U	ug/L	P385298	
		Glufosinate**	0.10	U	ug/L	P385298	
		Glyphosate**	0.10	U	ug/L	P385298	
		Afidopyropen**	0.0020	U	ug/L	P385308	
		Bentazon	0.12		ug/L	P385308	
		Benzovindiflupyr**	0.0020	U	ug/L	P385308	
		Carbamazepine**	8.0E-04	U	ug/L	P385308	
		Clothianidin**	0.025		ug/L	P385308	
		Dinotefuran**	0.0020	U	ug/L	P385308	
		Diuron	0.0020	U	ug/L	P385308	
		Fenuron	0.016	U	ug/L	P385308	
		Fluridone**	1.4		ug/L	P385308	
		Imazapyr**	0.34		ug/L	P385308	
		Hydrocodone**	0.0020	U	ug/L	P385308	
		Ibuprofen**	0.020	U	ug/L	P385308	
		Imidacloprid	0.031		ug/L	P385308	
		Linuron	0.0040	U	ug/L	P385308	
		Mandestrobin**	0.0020	U	ug/L	P385308	
		MCP	0.0020	I	ug/L	P385308	
		Naproxen**	0.0080	U	ug/L	P385308	
		Primidone**	0.0040	U	ug/L	P385308	
		Pyraclostrobin**	0.0020	U	ug/L	P385308	
		Thiamethoxam**	0.0023	I	ug/L	P385308	

Field ID: 20030848

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2186516	EPA 8321B	Tolfenpyrad**	0.0020	U	ug/L	P385308	
		Triclopyr**	0.0040	U	ug/L	P385308	
2186517	EPA 200.7 Rev. 4.4	Barium	37.5		ug/L	P385268	
		Calcium	47.9		mg/L	P385268	
		Iron	450		ug/L	P385268	
		Magnesium	8.59		mg/L	P385268	
		Potassium	4.2		mg/L	P385268	
		Sodium	22.3		mg/L	P385268	
		Zinc	5.0	U	ug/L	P385268	
	EPA 200.8 Rev. 5.4	Aluminum	181		ug/L	P385268	
		Antimony	0.098	I	ug/L	P385268	
		Arsenic	1.05		ug/L	P385268	
		Boron**	33.2		ug/L	P385268	
		Cadmium	0.020	U	ug/L	P385268	
		Chromium	0.40	U	ug/L	P385268	
		Copper	5.47		ug/L	P385268	
		Lead	0.20	U	ug/L	P385268	
		Nickel	0.50	U	ug/L	P385268	
		Selenium	0.20	U	ug/L	P385268	
		Silver	0.010	U	ug/L	P385268	
		Thallium	0.10	U	ug/L	P385268	
	SM 2340B	Hardness	155		mg/L	P385268	

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

EPA 8321B: MS accuracy for 2,4-D and bentazon could not be assessed due to high concentration of parameter in the spiked sample.

Sample Location: Trout River at Old Kings Rd

Collection Date/Time: 07/27/2020 13:45

Field ID: 20030753

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2186504	EPA 180.1 Rev. 2.0	Turbidity	2.9		NTU	P385305	
	EPA 300.0 Rev. 2.1	Chloride	15		mg Cl/L	P385626	
		Sulfate	15		mg SO4/L	P385630	
	SM 2120 B-2011	Color (true)	250		PCU	P385278	
	SM 2320 B-2011	Total Alkalinity	23		mg CaCO3/L	P385565	
	SM 2540 C-2011	TDS	126		mg/L	P385615	
	SM 2540 D-2011	TSS	2	I	mg/L	P385653	
	SM 4500 F-C-2011	Fluoride	0.054	I	mg F/L	P385382	
2186506	EPA 350.1 Rev. 2.0	Ammonia-N	0.017		mg N/L	P385480	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.82		mg N/L	P385375	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.058		mg N/L	P385301	
	EPA 365.1 Rev. 2.0	Total-P	0.11		mg P/L	P385506	
	SM 5310 B-2011	Organic Carbon	24		mg C/L	P385449	
2186508	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.075		mg P/L	P385286	

Ref. Method and Comment:

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

Sample Location: Moncrief Cr at Moncrief Road

Collection Date/Time: 07/27/2020 14:20

Field ID: 20030726

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2186505	EPA 180.1 Rev. 2.0	Turbidity	2.3		NTU	P385305	
	EPA 300.0 Rev. 2.1	Chloride	13		mg Cl/L	P385626	
		Sulfate	25		mg SO4/L	P385630	
	SM 2120 B-2011	Color (true)	35		PCU	P385278	
	SM 2320 B-2011	Total Alkalinity	118		mg CaCO3/L	P385565	
	SM 2540 C-2011	TDS	204	A	mg/L	P385616	
	SM 2540 D-2011	TSS	3	IA	mg/L	P385654	
	SM 4500 F-C-2011	Fluoride	0.15		mg F/L	P385382	
2186507	EPA 350.1 Rev. 2.0	Ammonia-N	0.13		mg N/L	P385480	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.58		mg N/L	P385417	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.14		mg N/L	P385301	
	EPA 365.1 Rev. 2.0	Total-P	0.10		mg P/L	P385506	
	SM 5310 B-2011	Organic Carbon	6.9		mg C/L	P385449	
2186509	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.067		mg P/L	P385286	

Ref. Method and Comment:

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P385305

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P385268

Component	Result	Code	Units
Barium	1.0	U	ug/L
Calcium	0.075	U	mg/L
Iron	30	U	ug/L
Magnesium	0.040	U	mg/L
Potassium	0.30	U	mg/L
Sodium	0.50	U	mg/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P385268

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Antimony	0.050	U	ug/L
Arsenic	0.050	U	ug/L
Boron	2.0	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: P385626

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P385630

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P385480

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P385375

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P385417

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P385300

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P385301

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P385506

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P385286

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

Reference Method: EPA 8321B
Batch ID: P385298

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: EPA 8321B
Batch ID: P385308

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B

Batch ID: P385308

Component	Result	Code	Units
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
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: SM 2120 B-2011

Batch ID: P385278

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011

Batch ID: P385565

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

Reference Method: SM 2540 C-2011

Batch ID: P385615

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-2011

Batch ID: P385616

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011

Batch ID: P385653

Component	Result	Code	Units
TSS	2	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 D-2011
Batch ID: P385654

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P385382

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P385449

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: P385268

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	102		P	85 - 115
Calcium	101		P	85 - 115
Iron	106		P	85 - 115
Magnesium	102		P	85 - 115
Potassium	102		P	85 - 115
Sodium	102		P	85 - 115
Zinc	103		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P385268

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	96.3		P	85 - 115
Antimony	99.1		P	85 - 115
Arsenic	97.8		P	85 - 115
Boron	102		P	85 - 115
Cadmium	96.2		P	85 - 115
Chromium	96.6		P	85 - 115
Copper	100		P	85 - 115
Lead	101		P	85 - 115
Nickel	97.9		P	85 - 115
Selenium	95.0		P	85 - 115
Silver	109		P	85 - 115
Thallium	99.4		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P385626

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P385630

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P385480

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P385375

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	99.9		P	90 - 110

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P385417

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P385300

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P385301

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P385506

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P385286

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	99.8		P	90 - 110

Reference Method: EPA 8321B
Batch ID: P385298

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	115		P	40 - 150
AMPA	82.0		P	40 - 150
Endothall	97.0		P	40 - 150
Glufosinate	92.9		P	40 - 150
Glyphosate	89.5		P	40 - 140
Sucralose	89.9		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P385308

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	93.9		P	30 - 160
Acetaminophen	87.5		P	30 - 160
Acetamiprid	80.1		P	30 - 160
Afidopyropen	68.4		P	30 - 160
Bentazon	68.9		P	30 - 160
Benzovindiflupyr	59.6		P	30 - 160
Carbamazepine	73.9		P	30 - 160
Clothianidin	91.5		P	30 - 160
Dinotefuran	93.3		P	30 - 160
Diuron	67.5		P	30 - 160
Fenuron	92.9		P	30 - 160

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P385308

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluridone	97.5		P	30 - 160
Hydrocodone	83.9		P	30 - 160
Ibuprofen	79.0		P	30 - 160
Imazapyr	58.2		P	30 - 160
Imidacloprid	113		P	30 - 160
Linuron	69.3		P	30 - 160
Mandestrobin	78.5		P	30 - 160
MCPP	112		P	30 - 160
Naproxen	62.6		P	30 - 160
Primidone	92.3		P	30 - 160
Pyraclostrobin	56.9		P	30 - 160
Thiamethoxam	91.1		P	30 - 160
Tolfenpyrad	30.9		P	30 - 160
Triclopyr	70.2		P	30 - 160

Reference Method: SM 2120 B-2011
Batch ID: P385278

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

Reference Method: SM 2320 B-2011
Batch ID: P385565

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

Reference Method: SM 4500 F-C-2011
Batch ID: P385382

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.3		P	90 - 106

Reference Method: SM 5310 B-2011
Batch ID: P385449

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	95.8		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P385268

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2185215	Barium	107	106	P/P	80 - 120
2185215	Calcium	102		P	80 - 120
2185215	Iron	104	107	P/P	80 - 120
2185215	Magnesium	104		P	80 - 120
2185215	Potassium	102	107	P/P	80 - 120
2185215	Sodium	103		P	80 - 120
2185215	Zinc	108	106	P/P	80 - 120
2185566	Barium	106		P	80 - 120
2185566	Calcium	101		P	80 - 120
2185566	Iron	107		P	80 - 120
2185566	Magnesium	110		P	80 - 120
2185566	Potassium	107		P	80 - 120
2185566	Sodium	106		P	80 - 120
2185566	Zinc	106		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P385268

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2185215	Aluminum	95.5	93.9	P/P	80 - 120
2185215	Antimony	101	100	P/P	80 - 120
2185215	Arsenic	100	98.7	P/P	80 - 120
2185215	Boron	106	105	P/P	80 - 120
2185215	Cadmium	97.8	96.4	P/P	80 - 120
2185215	Chromium	101	99.6	P/P	80 - 120
2185215	Copper	99.9	98.6	P/P	80 - 120
2185215	Lead	103	102	P/P	80 - 120
2185215	Nickel	96.8	96.0	P/P	80 - 120
2185215	Selenium	94.2	92.8	P/P	80 - 120
2185215	Silver	106	107	P/P	80 - 120
2185215	Thallium	103	104	P/P	80 - 120
2185566	Aluminum	94.9		P	80 - 120
2185566	Antimony	94.8		P	80 - 120
2185566	Arsenic	96.1		P	80 - 120
2185566	Boron	106		P	80 - 120
2185566	Cadmium	97.1		P	80 - 120
2185566	Chromium	101		P	80 - 120
2185566	Copper	100		P	80 - 120
2185566	Lead	101		P	80 - 120
2185566	Nickel	95.2		P	80 - 120
2185566	Selenium	88.8		P	80 - 120
2185566	Silver	109		P	80 - 120
2185566	Thallium	101		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P385626

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2186495	Chloride	103		P	90 - 110
2186871	Chloride	104		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P385630

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2186495	Sulfate	103		P	90 - 110
2186871	Sulfate	104		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P385480

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2186405	Ammonia-N	96.6	96.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P385375

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2186502	Kjeldahl Nitrogen	105	114	P/F	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P385417

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2186809	Kjeldahl Nitrogen	113	102	F/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P385300

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2186404	NO2NO3-N	99.0	99.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P385301

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2186507	NO2NO3-N	98.5	98.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P385506

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2186502	Total-P	107	106	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P385286

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2186497	O-Phosphate-P	98.5	98.3	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P385298

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2186301	Acesulfame K	105	108	P/P	40 - 150
2186301	AMPA	49.0	60.6	P/P	40 - 150
2186301	Endothall	118	121	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P385298

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2186301	Glufosinate	93.5	106	P/P	40 - 150
2186301	Glyphosate	77.8	77.8	P/P	40 - 140
2186301	Sucralose	93.7	98.6	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P385308

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2186499	Acetaminophen	81.0	81.0	P/P	30 - 160
2186499	Acetamiprid	72.3	72.1	P/P	30 - 160
2186499	Afidopyropen	68.1	62.0	P/P	30 - 160
2186499	Benzovindiflupyr	54.4	51.4	P/P	30 - 160
2186499	Carbamazepine	60.4	59.5	P/P	30 - 160
2186499	Clothianidin	78.8	81.8	P/P	30 - 160
2186499	Dinotefuran	86.9	88.0	P/P	30 - 160
2186499	Diuron	50.1	50.6	P/P	30 - 160
2186499	Fenuron	74.3	72.3	P/P	30 - 160
2186499	Fluridone	92.2	91.9	P/P	30 - 160
2186499	Hydrocodone	71.4	67.6	P/P	30 - 160
2186499	Ibuprofen	60.6	64.1	P/P	30 - 160
2186499	Imazapyr	61.8	50.6	P/P	30 - 160
2186499	Imidacloprid	131	135	P/P	30 - 160
2186499	Linuron	55.8	58.1	P/P	30 - 160
2186499	Mandestrobin	71.8	68.2	P/P	30 - 160
2186499	MCP	101	97.8	P/P	30 - 160
2186499	Naproxen	48.7	48.5	P/P	30 - 160
2186499	Primidone	79.4	93.2	P/P	30 - 160
2186499	Pyraclostrobin	52.9	54.0	P/P	30 - 160
2186499	Thiamethoxam	90.0	78.2	P/P	30 - 160
2186499	Tolfenpyrad	36.3	39.4	P/P	30 - 160
2186499	Triclopyr	60.6	71.5	P/P	30 - 160

Reference Method: SM 4500 F-C-2011
Batch ID: P385382

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2186718	Fluoride	98.9	97.6	P/P	94 - 107

Reference Method: SM 5310 B-2011
Batch ID: P385449

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2186371	Organic Carbon	96.2	97.0	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P385305

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2186403	Turbidity	1.69	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P385268

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2185215	Barium	0.412	Spike	P	0 - 20
2185215	Calcium	1.50	Spike	P	0 - 20
2185215	Iron	2.50	Spike	P	0 - 20
2185215	Magnesium	2.10	Spike	P	0 - 20
2185215	Potassium	3.06	Spike	P	0 - 20
2185215	Sodium	1.97	Spike	P	0 - 20
2185215	Zinc	1.41	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P385268

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2185215	Aluminum	1.65	Spike	P	0 - 20
2185215	Antimony	0.698	Spike	P	0 - 20
2185215	Arsenic	1.25	Spike	P	0 - 20
2185215	Boron	0.864	Spike	P	0 - 20
2185215	Cadmium	1.47	Spike	P	0 - 20
2185215	Chromium	1.54	Spike	P	0 - 20
2185215	Copper	1.21	Spike	P	0 - 20
2185215	Lead	0.361	Spike	P	0 - 20
2185215	Nickel	0.833	Spike	P	0 - 20
2185215	Selenium	1.47	Spike	P	0 - 20
2185215	Silver	0.900	Spike	P	0 - 20
2185215	Thallium	0.526	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P385626

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2186495	Chloride	0.543	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P385630

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2186495	Sulfate	0.959	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P385480

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2186405	Ammonia-N	0.176	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P385375

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2186502	Kjeldahl Nitrogen	5.82	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P385417

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2186809	Kjeldahl Nitrogen	6.26	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P385300

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2186404	NO2NO3-N	0.504	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P385301

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2186507	NO2NO3-N	0.298	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P385506

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2186502	Total-P	1.14	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P385286

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2186497	O-Phosphate-P	0.203	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P385298

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2186301	Acesulfame K	3.41	Spike	P	0 - 30
2186301	AMPA	21.2	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P385298

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2186301	Endothall	2.22	Spike	P	0 - 30
2186301	Glufosinate	12.9	Spike	P	0 - 30
2186301	Glyphosate	0.0167	Spike	P	0 - 30
2186301	Sucralose	5.07	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P385308

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2186499	2,4-D	1.18	Spike	P	0 - 30
2186499	Acetaminophen	0.0156	Spike	P	0 - 30
2186499	Acetamiprid	0.348	Spike	P	0 - 30
2186499	Afidopyropen	9.32	Spike	P	0 - 30
2186499	Bentazon	0.458	Spike	P	0 - 30
2186499	Benzovindiflupyr	5.54	Spike	P	0 - 30
2186499	Carbamazepine	1.52	Spike	P	0 - 30
2186499	Clothianidin	3.38	Spike	P	0 - 30
2186499	Dinotefuran	1.28	Spike	P	0 - 30
2186499	Diuron	0.833	Spike	P	0 - 30
2186499	Fenuron	2.75	Spike	P	0 - 30
2186499	Fluridone	0.266	Spike	P	0 - 30
2186499	Hydrocodone	5.39	Spike	P	0 - 30
2186499	Ibuprofen	5.60	Spike	P	0 - 30
2186499	Imazapyr	13.0	Spike	P	0 - 30
2186499	Imidacloprid	2.62	Spike	P	0 - 30
2186499	Linuron	4.10	Spike	P	0 - 30
2186499	Mandestrobin	5.15	Spike	P	0 - 30
2186499	MCP	3.62	Spike	P	0 - 30
2186499	Naproxen	0.365	Spike	P	0 - 30
2186499	Primidone	15.9	Spike	P	0 - 30
2186499	Pyraclostrobin	2.18	Spike	P	0 - 30
2186499	Thiamethoxam	13.9	Spike	P	0 - 30
2186499	Tolfenpyrad	8.17	Spike	P	0 - 30
2186499	Triclopyr	16.5	Spike	P	0 - 30

Reference Method: SM 2120 B-2011
Batch ID: P385278

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2186495	Color (true)	0.543	Sample	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P385565

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2187682	Total Alkalinity	2.80	Sample	P	0 - 8.1

Quality Assurance Report Precision

Reference Method: SM 2540 C-2011
Batch ID: P385615

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2186370	TDS	0.948	Sample	P	0 - 10

Reference Method: SM 2540 C-2011
Batch ID: P385616

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2186505	TDS	4.42	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P385382

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2186718	Fluoride	0.953	Spike	P	0 - 2.8

Reference Method: SM 5310 B-2011
Batch ID: P385449

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2186371	Organic Carbon	0.636	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2186516
Field Sample ID: 20030848

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	92.6	P	30 - 160
EPA 8321B	Acetaminophen-d4	85.9	P	30 - 160
EPA 8321B	Carbamazepine-d10	51.3	P	30 - 160
EPA 8321B	Diuron-d6	57.2	P	30 - 160
EPA 8321B	Endothall-d6	84.7	P	30 - 160
EPA 8321B	Endothall-d6	84.7	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	115	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	115	P	30 - 160
EPA 8321B	Ibuprofen-d3	62.4	P	30 - 160
EPA 8321B	Primidone-d5	98.1	P	30 - 160
EPA 8321B	Sucralose-d6	75.0	P	30 - 160
EPA 8321B	Sucralose-d6	75.0	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: SM 2120 B-2011

Run ID: A100132

Included Lab Sample IDs: 2186501, 2186504, 2186505

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	103	104	P/P	90 - 115
Color (true)	104	106	P/P	90 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A100134

Included Lab Sample IDs: 2186503, 2186508, 2186509

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.2	97.3	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A100144

Included Lab Sample IDs: 2186502, 2186506, 2186507

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	100	100	P/P	90 - 110
NO2NO3-N	100	101	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A100145

Included Lab Sample IDs: 2186501, 2186504, 2186505

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

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A100158

Included Lab Sample IDs: 2186517

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	104	104	P/P	90 - 110
Calcium	99.4	102	P/P	90 - 110
Iron	101	103	P/P	90 - 110
Magnesium	101	103	P/P	90 - 110
Potassium	98.8	102	P/P	90 - 110
Sodium	99.8	103	P/P	90 - 110
Zinc	104	104	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A100159

Included Lab Sample IDs: 2186516

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	99.0	95.5	P/P	60 - 160

Reference Method: SM 4500 F-C-2011

Run ID: A100179

Included Lab Sample IDs: 2186501, 2186504, 2186505

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	100	99.1	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A100198

Included Lab Sample IDs: 2186516

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	68.0	74.3	P/P	60 - 160
Endothall	103	106	P/P	60 - 160

Reference Method: SM 5310 B-2011

Run ID: A100203

Included Lab Sample IDs: 2186502, 2186506, 2186507

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.4	96.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A100209

Included Lab Sample IDs: 2186502, 2186506

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	103	90.7	P/P	90 - 110
Kjeldahl Nitrogen	90.7	98.4	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A100212

Included Lab Sample IDs: 2186502, 2186506, 2186507

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

Reference Method: EPA 8321B

Run ID: A100223

Included Lab Sample IDs: 2186516

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	80.2	70.1	P/P	60 - 160
Glufosinate	105	107	P/P	60 - 160
Glyphosate	95.0	98.1	P/P	60 - 160

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A100234

Included Lab Sample IDs: 2186507

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	104	100	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A100241

Included Lab Sample IDs: 2186501, 2186504, 2186505

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	103	98.5	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A100267

Included Lab Sample IDs: 2186501, 2186504, 2186505

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

Reference Method: EPA 8321B

Run ID: A100276

Included Lab Sample IDs: 2186516

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	82.4	82.9	P/P	50 - 150
Acetaminophen	108	116	P/P	60 - 160
Acetamiprid	113	108	P/P	50 - 150
Afidopyropen	97.2	103	P/P	50 - 150
Benzovindiflupyr	94.2	101	P/P	50 - 150
Carbamazepine	120	119	P/P	60 - 150
Clothianidin	111	112	P/P	60 - 150
Dinotefuran	96.3	99.8	P/P	50 - 150
Diuron	107	107	P/P	60 - 160
Fenuron	109	114	P/P	60 - 150
Hydrocodone	106	105	P/P	60 - 150
Ibuprofen	89.9	89.5	P/P	50 - 160
Imazapyr	72.3	73.0	P/P	50 - 150
Imidacloprid	106	112	P/P	60 - 150
Linuron	97.7	101	P/P	60 - 150
Mandestrobin	119	123	P/P	50 - 150
MCPP	93.4	90.3	P/P	50 - 150
Naproxen	82.9	94.0	P/P	50 - 160
Primidone	103	111	P/P	60 - 150
Pyraclostrobin	93.6	101	P/P	60 - 150
Thiamethoxam	120	113	P/P	50 - 150
Tolfenpyrad	78.1	81.1	P/P	60 - 150
Triclopyr	82.1	86.8	P/P	50 - 150

Reference Method: EPA 8321B

Run ID: A100283

Included Lab Sample IDs: 2186516

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Bentazon	102	117	P/P	50 - 160
Fluridone	142	150	P/P	60 - 160

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A100284

Included Lab Sample IDs: 2186502, 2186506, 2186507

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	100	100	P/P	90 - 110
Total-P	99.7	100	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A100326

Included Lab Sample IDs: 2186517

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	94.6	95.1	P/P	90 - 110
Antimony	94.7	94.3	P/P	90 - 110
Arsenic	93.5	92.8	P/P	90 - 110
Boron	101	102	P/P	90 - 110
Cadmium	93.3	93.0	P/P	90 - 110
Chromium	95.4	94.6	P/P	90 - 110
Copper	96.3	95.0	P/P	90 - 110
Lead	95.6	95.7	P/P	90 - 110
Nickel	95.6	94.6	P/P	90 - 110
Selenium	92.5	91.4	P/P	90 - 110
Silver	104	103	P/P	90 - 110
Thallium	94.8	93.6	P/P	90 - 110

* Pass/Fail determinations are made for each bracketing calibration verification check.

Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery			LCS	Precision SMP	MS
EPA 180.1 Rev. 2.0	Turbidity						1.69	
EPA 200.7 Rev. 4.4	Barium	102	107	106	106			0.412
	Calcium	101	102	101				1.50
	Iron	106	104	107	107			2.50
	Magnesium	102	104	110				2.10
	Potassium	102	102	107	107			3.06
	Sodium	102	103	106				1.97
	Zinc	103	108	106	106			1.41
EPA 200.8 Rev. 5.4	Aluminum	96.3	95.5	93.9	94.9			1.65
	Antimony	99.1	101	100	94.8			0.698
	Arsenic	97.8	100	98.7	96.1			1.25
	Boron	102	106	105	106			0.864
	Cadmium	96.2	97.8	96.4	97.1			1.47
	Chromium	96.6	101	99.6	101			1.54
	Copper	100	99.9	98.6	100			1.21
	Lead	101	103	102	101			0.361
	Nickel	97.9	96.8	96.0	95.2			0.833
	Selenium	95.0	94.2	92.8	88.8			1.47
	Silver	109	106	107	109			0.900
	Thallium	99.4	103	104	101			0.526
EPA 300.0 Rev. 2.1	Chloride	105	103	104			0.543	
	Sulfate	105	103	104			0.959	
EPA 350.1 Rev. 2.0	Ammonia-N	100	96.6	96.8				0.176
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	99.9	105	114				5.82
	Kjeldahl Nitrogen	107	113	102				6.26
EPA 353.2 Rev. 2.0	NO2NO3-N	100	99.0	99.5				0.504
	NO2NO3-N	100	98.5	98.0				0.298
EPA 365.1 Rev. 2.0	Total-P	105	107	106				1.14
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.8	98.5	98.3				0.203
EPA 8321B	2,4-D	93.9						1.18
	Acesulfame K	115	105	108				3.41
	Acetaminophen	87.5	81.0	81.0				0.0156
	Acetamiprid	80.1	72.3	72.1				0.348
	Afidopyrophen	68.4	68.1	62.0				9.32
	AMPA	82.0	49.0	60.6				21.2
	Bentazon	68.9						0.458
	Benzovindiflupyr	59.6	51.4	54.4				5.54
	Carbamazepine	73.9	60.4	59.5				1.52
	Clothianidin	91.5	78.8	81.8				3.38
	Dinotefuran	93.3	86.9	88.0				1.28
	Diuron	67.5	50.1	50.6				0.833
	Endothall	97.0	118	121				2.22
	Fenuron	92.9	74.3	72.3				2.75
	Fluridone	97.5	92.2	91.9				0.266
	Glufosinate	92.9	93.5	106				12.9
	Glyphosate	89.5	77.8	77.8				0.0167
	Hydrocodone	83.9	71.4	67.6				5.39
	Ibuprofen	79.0	64.1	60.6				5.60
	Imazapyr	58.2	50.6	61.8				13.0
	Imidacloprid	113	131	135				2.62
	Linuron	69.3	55.8	58.1				4.10
	Mandestrobin	78.5	71.8	68.2				5.15
	MCPP	112	97.8	101				3.62
	Naproxen	62.6	48.5	48.7				0.365

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
EPA 8321B	Primidone	92.3	79.4	93.2		15.9
	Pyraclostrobin	56.9	54.0	52.9		2.18
	Sucralose	89.9	93.7	98.6		5.07
	Thiamethoxam	91.1	90.0	78.2		13.9
	Tolfenpyrad	30.9	39.4	36.3		8.17
	Triclopyr	70.2	71.5	60.6		16.5
SM 2120 B-2011	Color (true)	103			0.543	
SM 2320 B-2011	Total Alkalinity	104			2.80	
SM 2540 C-2011	TDS				0.948	
	TDS				4.42	
SM 4500 F-C-2011	Fluoride	98.3	98.9	97.6		0.953
SM 5310 B-2011	Organic Carbon	95.8	96.2	97.0		0.636

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2186501, 2186504, 2186505
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2186517
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2186517
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2186501, 2186504, 2186505
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2186501, 2186504, 2186505
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2186502, 2186506, 2186507
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2186502, 2186506, 2186507
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2186502, 2186506, 2186507
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2186502, 2186506, 2186507
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2186503, 2186508, 2186509
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2186516
EPA 8321B	Water soluble organic compounds by HPLC/MS/MS	2186516
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2186501, 2186504, 2186505
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2186501, 2186504, 2186505
SM 2340B	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO ₃	2186517
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2186501, 2186504, 2186505
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2186501, 2186504, 2186505
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2186501, 2186504, 2186505
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2186502, 2186506, 2186507

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	07/28/2020			07/28/2020 16:10	Blanca Fach	2186501, 2186504, 2186505
EPA 200.7 Rev. 4.4	07/28/2020	07/28/2020 15:30	Elliott D. Healy	07/29/2020 20:24	Betina Topolski	2186517
EPA 200.8 Rev. 5.4	07/28/2020	07/28/2020 15:30	Elliott D. Healy	08/06/2020 17:17	Alexander Thompson	2186517
EPA 300.0 Rev. 2.1	07/28/2020			08/01/2020 09:30	Julia Storbeck	2186501
	07/28/2020			08/01/2020 09:42	Julia Storbeck	2186504
	07/28/2020			08/01/2020 09:54	Julia Storbeck	2186505
EPA 350.1 Rev. 2.0	07/28/2020			08/01/2020 18:51	Ping Hua	2186502
	07/28/2020			08/01/2020 18:53	Ping Hua	2186506
	07/28/2020			08/01/2020 18:55	Ping Hua	2186507
EPA 351.2 Rev. 2.0	07/28/2020	07/30/2020 12:15	Jhamieka S. Greenwood	07/31/2020 15:11	Jhamieka S. Greenwood	2186502
	07/28/2020	07/30/2020 12:15	Jhamieka S. Greenwood	07/31/2020 15:32	Jhamieka S. Greenwood	2186506
	07/28/2020	07/31/2020 10:40	Jhamieka S. Greenwood	08/03/2020 15:11	Julia Storbeck	2186507
EPA 353.2 Rev. 2.0	07/28/2020			07/29/2020 09:19	Beverly Y. Sanders	2186502
	07/28/2020			07/29/2020 09:26	Beverly Y. Sanders	2186507
	07/28/2020			07/29/2020 09:32	Beverly Y. Sanders	2186506
EPA 365.1 Rev. 2.0	07/28/2020	08/03/2020 10:00	Lipi Saha	08/04/2020 10:00	Benjamin T. Nordmann	2186502
	07/28/2020	08/03/2020 10:00	Lipi Saha	08/04/2020 10:03	Benjamin T. Nordmann	2186506
	07/28/2020	08/03/2020 10:00	Lipi Saha	08/04/2020 10:07	Benjamin T. Nordmann	2186507
EPA 365.1 Rev. 2.0 dissolved	07/28/2020			07/28/2020 17:57	Samantha Davila	2186503
	07/28/2020			07/28/2020 17:58	Samantha Davila	2186508
	07/28/2020			07/28/2020 17:59	Samantha Davila	2186509
EPA 8321B	07/28/2020	07/29/2020 12:00	Mohammad Ghaffari	07/29/2020 15:52	Mohammad Ghaffari	2186516
	07/28/2020	07/29/2020 12:00	Mohammad Ghaffari	07/30/2020 14:39	Rebecca Ware	2186516
	07/28/2020	07/29/2020 12:00	Mohammad Ghaffari	07/31/2020 13:47	Rebecca Ware	2186516
	07/28/2020	07/30/2020 14:00	Hoor Shaik	08/01/2020 18:08	Juyoung Kim	2186516
	07/28/2020	07/30/2020 14:00	Hoor Shaik	08/05/2020 03:20	Juyoung Kim	2186516
SM 2120 B-2011	07/28/2020			07/28/2020 16:20	Benjamin T. Nordmann	2186501
	07/28/2020			07/28/2020 16:22	Benjamin T. Nordmann	2186505
	07/28/2020			07/28/2020 16:30	Benjamin T. Nordmann	2186504
SM 2320 B-2011	07/28/2020			08/04/2020 04:32	Dale L. Simmons	2186501
	07/28/2020			08/04/2020 04:43	Dale L. Simmons	2186504
	07/28/2020			08/04/2020 04:54	Dale L. Simmons	2186505
SM 2340B	07/28/2020			07/29/2020 20:24	Betina Topolski	2186517
SM 2540 C-2011	07/28/2020			07/29/2020 15:16	Yijie Li	2186501, 2186504, 2186505
SM 2540 D-2011	07/28/2020			07/29/2020 15:16	Yijie Li	2186501, 2186504, 2186505
SM 4500 F-C-2011	07/28/2020			07/29/2020 22:37	Dale L. Simmons	2186501
	07/28/2020			07/29/2020 22:49	Dale L. Simmons	2186504
	07/28/2020			07/29/2020 23:02	Dale L. Simmons	2186505
SM 5310 B-2011	07/28/2020			07/31/2020 01:42	David Boose	2186502
	07/28/2020			07/31/2020 01:54	David Boose	2186506

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 5310 B-2011	07/28/2020			07/31/2020 02:07	David Boose	2186507