

Chemical Analysis Report

SE-DIST-2021-01-22-01

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

Event Description: **SMP - Okeechobee Monthly 01/20**

Request ID: **RQ-2021-01-11-50**

Customer: **SE-DIST**

Project ID: **SMP**

Send Reports to:

FL Dept. of Environmental Protection
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2199 South Rock Road
Fort Pierce, FL 34945
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Certified by: Thekkekalathil Chandrasekhar, Chemist Administrator

Date Certified: 12-FEB-2021 10:40



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: L-63 Canal @ Se 86th Blvd.

Collection Date/Time: 01/21/2021 12:30

Field ID: G1SE0022

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2220795	EPA 180.1 Rev. 2.0	Turbidity	4.0		NTU	P392826	
	EPA 300.0 Rev. 2.1	Chloride	71		mg Cl/L	P392955	
		Sulfate	33		mg SO4/L	P392957	
	SM 2120 B-2011	Color (true)	160		PCU	P392771	
	SM 2320 B-2011	Total Alkalinity	80	A	mg CaCO3/L	P392872	
	SM 2540 C-2011	TDS	306	A	mg/L	P393353	
	SM 2540 D-2011	TSS	3	IA	mg/L	P393296	
	SM 4500 F-C-2011	Fluoride	0.10		mg F/L	P392875	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.019		mg N/L	P393457	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.2		mg N/L	P393181	
2220796	EPA 353.2 Rev. 2.0	NO2NO3-N	0.90		mg N/L	P392884	
	EPA 365.1 Rev. 2.0	Total-P	0.30		mg P/L	P393247	
	SM 5310 B-2011	Organic Carbon	25		mg C/L	P393048	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.22		mg P/L	P392767	
2220797	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.22		mg P/L	P392767	

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.

Sample Location: Lettuce Creek @ 710

Collection Date/Time: 01/21/2021 13:15

Field ID: G1SE0015

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2220846	EPA 200.7 Rev. 4.4	Barium	21.8		ug/L	P392911	
		Calcium	42.1		mg/L	P392911	
		Iron	940		ug/L	P392911	
		Magnesium	7.00		mg/L	P392911	
		Manganese	14.5		ug/L	P392911	
		Potassium	2.9		mg/L	P392911	
		Sodium	31.8		mg/L	P392911	
	EPA 200.8 Rev. 5.4	Zinc	8.8	I	ug/L	P392911	
		Aluminum	193		ug/L	P392911	
		Antimony	0.050	U	ug/L	P392911	
		Arsenic	0.69		ug/L	P392911	
		Beryllium	0.026	I	ug/L	P392911	
		Boron**	41.4		ug/L	P392911	
		Cadmium	0.020	U	ug/L	P392911	
		Chromium	1.1	I	ug/L	P392911	
		Copper	0.40	U	ug/L	P392911	
		Lead	0.20	U	ug/L	P392911	
		Nickel	0.50	U	ug/L	P392911	
		Selenium	0.20	U	ug/L	P392911	
		Silver	0.010	U	ug/L	P392911	
		Thallium	0.10	U	ug/L	P392911	
	SM 2340B	Hardness	134		mg/L	P392911	

Sample Location: Lemkin Creek @ 78

Collection Date/Time: 01/21/2021 10:25

Field ID: G1SE0026

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2220792	EPA 300.0 Rev. 2.1	Chloride	170		mg Cl/L	P392955	
		Sulfate	95		mg SO4/L	P392957	
	SM 2120 B-2011	Color (true)	59		PCU	P392771	
	SM 2320 B-2011	Total Alkalinity	152		mg CaCO3/L	P392871	
	SM 2540 C-2011	TDS	588		mg/L	P393353	
	SM 2540 D-2011	TSS	6	I	mg/L	P393296	
2220793	SM 4500 F-C-2011	Fluoride	0.11		mg F/L	P393220	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.011		mg N/L	P393457	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.5		mg N/L	P393181	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P392884	
	EPA 365.1 Rev. 2.0	Total-P	0.081		mg P/L	P393247	
	SM 5310 B-2011	Organic Carbon	18		mg C/L	P393048	
2220794	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.007	I	mg P/L	P392767	

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.

Sample Location: Kissimmee Upstream Of 78

Collection Date/Time: 01/21/2021 11:00

Field ID: G4SE0131

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2220786	EPA 180.1 Rev. 2.0	Turbidity	4.3	A	NTU	P392826	
	EPA 300.0 Rev. 2.1	Chloride	25		mg Cl/L	P392955	
		Sulfate	12		mg SO4/L	P392957	
	SM 2120 B-2011	Color (true)	97		PCU	P392770	
	SM 2320 B-2011	Total Alkalinity	31		mg CaCO3/L	P392871	
	SM 2540 C-2011	TDS	120		mg/L	P393352	
	SM 2540 D-2011	TSS	6	I	mg/L	P393295	
2220788	SM 4500 F-C-2011	Fluoride	0.073	I	mg F/L	P393220	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.062		mg N/L	P393457	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P393181	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.028		mg N/L	P392884	
	EPA 365.1 Rev. 2.0	Total-P	0.070		mg P/L	P393247	
2220790	SM 5310 B-2011	Organic Carbon	16		mg C/L	P393048	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.019		mg P/L	P392767	
2220843	EPA 8321B	2,4-D	0.0073	I	ug/L	P392788	
		Acesulfame K	0.10	U	ug/L	P392897	
		AMPA	0.10	U	ug/L	P392897	
		Sucralose	0.38		ug/L	P392897	
		Acetaminophen**	0.012	I	ug/L	P392788	
		Acetamiprid**	0.0020	U	ug/L	P392788	
		Endothall	0.25	U	ug/L	P392897	
		Glufosinate	0.10	U	ug/L	P392897	
		Glyphosate	0.10	U	ug/L	P392897	
		Afidopyropen**	0.0020	U	ug/L	P392788	
		Bentazon	0.0077		ug/L	P392788	MS
		Benzovindiflupyr**	0.0020	U	ug/L	P392788	
		Carbamazepine**	8.0E-04	U	ug/L	P392788	
		Clothianidin**	0.0020	U	ug/L	P392788	
		Dinotefuran**	0.0020	U	ug/L	P392788	
		Diuron	0.0020	U	ug/L	P392788	
		Fenuron	0.016	U	ug/L	P392788	
		Fluridone**	0.0074		ug/L	P392788	
		Imazapyr**	0.053		ug/L	P392788	
		Hydrocodone**	0.0020	U	ug/L	P392788	
		Ibuprofen**	0.020	U	ug/L	P392788	
		Imidacloprid	0.0049	I	ug/L	P392788	
		Linuron	0.0040	U	ug/L	P392788	
		Mandestrobin**	0.0020	U	ug/L	P392788	
		MCP	0.0020	U	ug/L	P392788	
		Naproxen**	0.0080	U	ug/L	P392788	
		Primidone**	0.0040	U	ug/L	P392788	
		Pyraclostrobin**	0.0020	U	ug/L	P392788	
		Thiamethoxam**	0.0021	I	ug/L	P392788	

Field ID: G4SE0131

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2220843	EPA 8321B	Tolfenpyrad**	0.0020	U	ug/L	P392788	
		Triclopyr**	0.0040	U	ug/L	P392788	

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.

Sample Location: FB 012121

Collection Date/Time: 01/21/2021 11:20

Field ID: FB 012121

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2220801	EPA 180.1 Rev. 2.0	Turbidity	0.30		NTU	P392826	
	EPA 300.0 Rev. 2.1	Chloride	0.20	U	mg Cl/L	P392955	
		Sulfate	0.20	U	mg SO4/L	P392957	
	SM 2120 B-2011	Color (true)	2.5	U	PCU	P392771	
	SM 2320 B-2011	Total Alkalinity	0.65	U	mg CaCO3/L	P392871	
	SM 2540 C-2011	TDS	15	U	mg/L	P393351	
	SM 2540 D-2011	TSS	2	U	mg/L	P393294	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P393220	
2220802	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P393458	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P393181	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P392884	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P393247	
	SM 5310 B-2011	Organic Carbon	0.50	U	mg C/L	P393048	
2220803	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P392769	
2220845	EPA 8321B	2,4-D	0.0020	U	ug/L	P392788	
		Acesulfame K	0.10	U	ug/L	P392897	
		AMPA	0.10	U	ug/L	P392897	
		Sucralose	0.010	U	ug/L	P392897	
		Acetaminophen**	0.0080	U	ug/L	P392788	
		Acetamiprid**	0.0020	U	ug/L	P392788	
		Endothall	0.25	U	ug/L	P392897	
		Glufosinate	0.10	U	ug/L	P392897	
		Glyphosate	0.10	U	ug/L	P392897	
		Afidopyropen**	0.0020	U	ug/L	P392788	
		Bentazon	8.0E-04	U	ug/L	P392788	MS
		Benzovindiflupyr**	0.0020	U	ug/L	P392788	
		Carbamazepine**	8.0E-04	U	ug/L	P392788	
		Clothianidin**	0.0020	U	ug/L	P392788	
		Dinotefuran**	0.0020	U	ug/L	P392788	
		Diuron	0.0020	U	ug/L	P392788	
		Fenuron	0.016	U	ug/L	P392788	
		Fluridone**	8.0E-04	U	ug/L	P392788	
		Imazapyr**	0.0040	U	ug/L	P392788	
		Hydrocodone**	0.0020	U	ug/L	P392788	
		Ibuprofen**	0.020	U	ug/L	P392788	
		Imidacloprid	0.0020	U	ug/L	P392788	
		Linuron	0.0040	U	ug/L	P392788	
		Mandestrobin**	0.0020	U	ug/L	P392788	
		MCP	0.0020	U	ug/L	P392788	
		Naproxen**	0.0080	U	ug/L	P392788	
		Primidone**	0.0040	U	ug/L	P392788	
		Pyraclostrobin**	0.0020	U	ug/L	P392788	
		Thiamethoxam**	0.0020	U	ug/L	P392788	

Field ID: FB 012121

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2220845	EPA 8321B	Tolfenpyrad**	0.0020	U	ug/L	P392788	
		Triclopyr**	0.0040	U	ug/L	P392788	
2220847	EPA 200.7 Rev. 4.4	Barium	1.0	U	ug/L	P392911	
		Calcium	0.075	U	mg/L	P392911	
		Iron	30	U	ug/L	P392911	
		Magnesium	0.040	U	mg/L	P392911	
		Manganese	1.0	U	ug/L	P392911	
		Potassium	0.30	U	mg/L	P392911	
		Sodium	0.50	U	mg/L	P392911	
		Zinc	5.0	U	ug/L	P392911	
	EPA 200.8 Rev. 5.4	Aluminum	5.0	U	ug/L	P392911	
		Antimony	0.050	U	ug/L	P392911	
		Arsenic	0.050	U	ug/L	P392911	
		Beryllium	0.010	U	ug/L	P392911	
		Boron**	273		ug/L	P392911	
		Cadmium	0.020	U	ug/L	P392911	
		Chromium	0.40	U	ug/L	P392911	
		Copper	0.40	U	ug/L	P392911	
		Lead	0.20	U	ug/L	P392911	
		Nickel	0.50	U	ug/L	P392911	
		Selenium	0.20	U	ug/L	P392911	
		Silver	0.010	U	ug/L	P392911	
		Thallium	0.10	U	ug/L	P392911	

Ref. Method and Comment:

EPA 180.1 Rev. 2.0: The result was confirmed on 01/22/2021.

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.

EPA 200.8 Rev. 5.4: The boron result was confirmed in the undigested sample on 02/03/2021.

Sample Location: Henry Creek @ 710

Collection Date/Time: 01/21/2021 12:45

Field ID: G1SE0002

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2220798	EPA 180.1 Rev. 2.0	Turbidity	3.1		NTU	P392826	
	EPA 300.0 Rev. 2.1	Chloride	140		mg Cl/L	P392955	
		Sulfate	38		mg SO4/L	P392957	
	SM 2120 B-2011	Color (true)	220		PCU	P392771	
	SM 2320 B-2011	Total Alkalinity	79		mg CaCO3/L	P392871	
	SM 2540 C-2011	TDS	407		mg/L	P393353	
	SM 2540 D-2011	TSS	2	I	mg/L	P393296	
	SM 4500 F-C-2011	Fluoride	0.13		mg F/L	P393220	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.050		mg N/L	P393458	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.5		mg N/L	P393181	
2220799	EPA 353.2 Rev. 2.0	NO2NO3-N	0.23		mg N/L	P392884	
	EPA 365.1 Rev. 2.0	Total-P	0.39		mg P/L	P393247	
	SM 5310 B-2011	Organic Carbon	33		mg C/L	P393048	
	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.32		mg P/L	P392767	
	dissolved						
2220800	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.32		mg P/L	P392767	

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.

Sample Location: Taylor Creek @ 39th St.

Collection Date/Time: 01/21/2021 12:00

Field ID: G1SE0024

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2220787	EPA 180.1 Rev. 2.0	Turbidity	1.7		NTU	P392826	
	EPA 300.0 Rev. 2.1	Chloride	58		mg Cl/L	P392955	
		Sulfate	39		mg SO4/L	P392957	
	SM 2120 B-2011	Color (true)	97	A	PCU	P392771	
	SM 2320 B-2011	Total Alkalinity	74	A	mg CaCO3/L	P392871	
	SM 2540 C-2011	TDS	263		mg/L	P393352	
	SM 2540 D-2011	TSS	2	I	mg/L	P393295	
2220789	SM 4500 F-C-2011	Fluoride	0.074	I	mg F/L	P393220	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.21		mg N/L	P393457	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P393181	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.22		mg N/L	P392884	
	EPA 365.1 Rev. 2.0	Total-P	0.16		mg P/L	P393247	
2220791	SM 5310 B-2011	Organic Carbon	18		mg C/L	P393048	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.14		mg P/L	P392767	
2220844	EPA 8321B	2,4-D	0.0087		ug/L	P392788	
		Acesulfame K	0.10	U	ug/L	P392897	
		AMPA	0.17	I	ug/L	P392897	
		Sucralose	0.36		ug/L	P392897	
		Acetaminophen**	0.0080	U	ug/L	P392788	
		Acetamiprid**	0.0020	U	ug/L	P392788	
		Endothall	0.25	U	ug/L	P392897	
		Glufosinate	0.10	U	ug/L	P392897	
		Glyphosate	0.40	I	ug/L	P392897	
		Afidopyropen**	0.0020	U	ug/L	P392788	
		Bentazon	0.0012	I J	ug/L	P392788	MS
		Benzovindiflupyr**	0.0020	U	ug/L	P392788	
		Carbamazepine**	8.0E-04	U	ug/L	P392788	
		Clothianidin**	0.0020	U	ug/L	P392788	
		Dinotefuran**	0.0020	U	ug/L	P392788	
		Diuron	0.0020	U	ug/L	P392788	
		Fenuron	0.016	U	ug/L	P392788	
		Fluridone**	8.0E-04	U	ug/L	P392788	
		Imazapyr**	0.017		ug/L	P392788	
		Hydrocodone**	0.0020	U	ug/L	P392788	
		Ibuprofen**	0.020	U	ug/L	P392788	
		Imidacloprid	0.0038	I	ug/L	P392788	
		Linuron	0.0040	U	ug/L	P392788	
		Mandestrobin**	0.0020	U	ug/L	P392788	
		MCPP	0.0020	U	ug/L	P392788	
		Naproxen**	0.0080	U	ug/L	P392788	
		Primidone**	0.0040	U	ug/L	P392788	
		Pyraclostrobin**	0.0020	U	ug/L	P392788	
		Thiamethoxam**	0.0020	U	ug/L	P392788	

Field ID: G1SE0024

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2220844	EPA 8321B	Tolfenpyrad**	0.0020	U	ug/L	P392788	
		Triclopyr**	0.0040	U	ug/L	P392788	

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.
EPA 8321B: 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: P392826

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P392911

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
Manganese	1.0	U	ug/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: P392911

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Antimony	0.050	U	ug/L
Arsenic	0.050	U	ug/L
Beryllium	0.010	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: P392955

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P392957

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P393457

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P393458

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P393181

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P392884

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P393247

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P392767

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P392769

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

Reference Method: EPA 8321B
Batch ID: P392788

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B

Batch ID: P392788

Component	Result	Code	Units
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: P392897

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 2120 B-2011

Batch ID: P392770

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B-2011

Batch ID: P392771

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011

Batch ID: P392871

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

Reference Method: SM 2320 B-2011

Batch ID: P392872

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

Reference Method: SM 2540 C-2011

Batch ID: P393351

Component	Result	Code	Units
TDS	15	U	mg/L

Quality Assurance Report Method Blank Results

Reference Method: SM 2540 C-2011
Batch ID: P393352

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-2011
Batch ID: P393353

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P393294

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P393295

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P393296

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P392875

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-2011
Batch ID: P393220

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P393048

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: P392911

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	98.8		P	85 - 115
Calcium	106		P	85 - 115
Iron	103		P	85 - 115
Magnesium	105		P	85 - 115
Manganese	99.9		P	85 - 115
Potassium	101		P	85 - 115
Sodium	102		P	85 - 115
Zinc	98.1		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P392911

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	86.7		P	85 - 115
Antimony	96.2		P	85 - 115
Arsenic	90.5		P	85 - 115
Beryllium	94.2		P	85 - 115
Boron	94.7		P	85 - 115
Cadmium	88.0		P	85 - 115
Chromium	101		P	85 - 115
Copper	98.5		P	85 - 115
Lead	93.2		P	85 - 115
Nickel	99.3		P	85 - 115
Selenium	89.4		P	85 - 115
Silver	101		P	85 - 115
Thallium	101		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P392955

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P392957

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	97.7		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P393457

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P393458

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	98.1		P	90 - 110

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P393181

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P392884

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: P393247

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: P392767

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P392769

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

Reference Method: EPA 8321B
Batch ID: P392788

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	117		P	30 - 160
Acetaminophen	73.6		P	30 - 160
Acetamiprid	95.3		P	30 - 160
Afidopyropen	75.8		P	30 - 160
Bentazon	75.1		P	30 - 160
Benzovindiflupyr	77.3		P	30 - 160
Carbamazepine	85.2		P	30 - 160
Clothianidin	95.4		P	30 - 160
Dinotefuran	84.6		P	30 - 160
Diuron	60.0		P	30 - 160
Fenuron	94.1		P	30 - 160
Fluridone	83.7		P	30 - 160
Hydrocodone	93.9		P	30 - 160
Ibuprofen	99.1		P	30 - 160
Imazapyr	120		P	30 - 160
Imidacloprid	107		P	30 - 160
Linuron	71.6		P	30 - 160
Mandestrobin	77.6		P	30 - 160
MCPP	115		P	30 - 160
Naproxen	72.2		P	30 - 160
Primidone	102		P	30 - 160
Pyraclostrobin	74.9		P	30 - 160

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P392788

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Thiamethoxam	107		P	30 - 160
Tolfenpyrad	52.0		P	30 - 160
Triclopyr	108		P	30 - 160

Reference Method: EPA 8321B
Batch ID: P392897

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	101		P	40 - 150
AMPA	104		P	40 - 150
Endothall	93.7		P	40 - 150
Glufosinate	102		P	40 - 150
Glyphosate	80.8		P	40 - 140
Sucralose	108		P	40 - 150

Reference Method: SM 2120 B-2011
Batch ID: P392770

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	97.6		P	85 - 115

Reference Method: SM 2120 B-2011
Batch ID: P392771

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	97.7		P	85 - 115

Reference Method: SM 2320 B-2011
Batch ID: P392871

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	96.4		P	93 - 104

Reference Method: SM 2320 B-2011
Batch ID: P392872

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	94.7		P	93 - 104

Reference Method: SM 4500 F-C-2011
Batch ID: P392875

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

Reference Method: SM 4500 F-C-2011
Batch ID: P393220

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	100		P	90 - 106

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-2011
Batch ID: P393048

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.8		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P392911

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2220668	Barium	98.8		P	80 - 120
2220668	Calcium	102		P	80 - 120
2220668	Iron	98.3		P	80 - 120
2220668	Magnesium	101		P	80 - 120
2220668	Manganese	97.6		P	80 - 120
2220668	Potassium	100		P	80 - 120
2220668	Sodium	101		P	80 - 120
2220668	Zinc	97.8		P	80 - 120
2220913	Barium	103	103	P/P	80 - 120
2220913	Calcium	108	109	P/P	80 - 120
2220913	Iron	105	107	P/P	80 - 120
2220913	Magnesium	106	108	P/P	80 - 120
2220913	Manganese	103	103	P/P	80 - 120
2220913	Potassium	106	107	P/P	80 - 120
2220913	Sodium	104	105	P/P	80 - 120
2220913	Zinc	99.1	98.7	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P392911

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2220668	Aluminum	88.3		P	80 - 120
2220668	Antimony	98.6		P	80 - 120
2220668	Arsenic	91.1		P	80 - 120
2220668	Beryllium	93.8		P	80 - 120
2220668	Boron	95.7		P	80 - 120
2220668	Cadmium	89.0		P	80 - 120
2220668	Chromium	96.0		P	80 - 120
2220668	Copper	94.4		P	80 - 120
2220668	Lead	95.4		P	80 - 120
2220668	Nickel	94.8		P	80 - 120
2220668	Selenium	90.1		P	80 - 120
2220668	Silver	101		P	80 - 120
2220668	Thallium	102		P	80 - 120
2220913	Aluminum	87.5	87.9	P/P	80 - 120
2220913	Antimony	95.8	95.5	P/P	80 - 120
2220913	Arsenic	90.3	89.7	P/P	80 - 120
2220913	Beryllium	92.8	93.3	P/P	80 - 120
2220913	Boron	95.8	96.6	P/P	80 - 120
2220913	Cadmium	87.4	89.7	P/P	80 - 120
2220913	Chromium	100	100	P/P	80 - 120
2220913	Copper	95.5	96.4	P/P	80 - 120
2220913	Lead	94.9	93.7	P/P	80 - 120
2220913	Nickel	96.5	96.8	P/P	80 - 120
2220913	Selenium	89.4	89.7	P/P	80 - 120
2220913	Silver	102	101	P/P	80 - 120
2220913	Thallium	99.7	102	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P392955

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
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Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P392955

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2220626	Chloride	97.7		P	90 - 110
2220705	Chloride	97.4		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P392957

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2220626	Sulfate	98.4		P	90 - 110
2220705	Sulfate	97.4		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P393457

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2220706	Ammonia-N	93.9	96.1	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P393458

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2220861	Ammonia-N	95.3	94.6	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P392884

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2220788	NO2NO3-N	97.0	98.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P393247

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2220788	Total-P	107	107	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P392767

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2220634	O-Phosphate-P	97.2	99.3	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P392769

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2220897	O-Phosphate-P	98.1	99.3	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P392788

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2220844	2,4-D	78.3	84.5	P/P	30 - 160
2220844	Acetaminophen	87.5	84.3	P/P	30 - 160

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B

Batch ID: P392788

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2220844	Acetamiprid	57.5	61.1	P/P	30 - 160
2220844	Afidopyropen	59.1	62.8	P/P	30 - 160
2220844	Bentazon	20.0	19.1	F/F	30 - 160
2220844	Benzovindiflupyr	64.8	62.4	P/P	30 - 160
2220844	Carbamazepine	50.7	47.8	P/P	30 - 160
2220844	Clothianidin	60.3	62.3	P/P	30 - 160
2220844	Dinotefuran	84.8	79.0	P/P	30 - 160
2220844	Diuron	34.6	34.2	P/P	30 - 160
2220844	Fenuron	48.0	50.9	P/P	30 - 160
2220844	Fluridone	65.3	63.8	P/P	30 - 160
2220844	Hydrocodone	71.1	57.9	P/P	30 - 160
2220844	Ibuprofen	82.7	79.4	P/P	30 - 160
2220844	Imazapyr	102	96.4	P/P	30 - 160
2220844	Imidacloprid	102	97.0	P/P	30 - 160
2220844	Linuron	54.4	51.5	P/P	30 - 160
2220844	Mandestrobin	71.6	67.8	P/P	30 - 160
2220844	MCPP	82.4	80.6	P/P	30 - 160
2220844	Naproxen	85.2	98.3	P/P	30 - 160
2220844	Primidone	62.9	52.5	P/P	30 - 160
2220844	Pyraclostrobin	70.5	66.9	P/P	30 - 160
2220844	Thiamethoxam	93.3	91.9	P/P	30 - 160
2220844	Tolfenpyrad	50.5	51.0	P/P	30 - 160
2220844	Triclopyr	88.2	90.4	P/P	30 - 160

Reference Method: EPA 8321B

Batch ID: P392897

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2220641	Acesulfame K	107	106	P/P	40 - 150
2220641	AMPA	126	126	P/P	40 - 150
2220641	Endothall	103	106	P/P	40 - 150
2220641	Glufosinate	95.4	113	P/P	40 - 150
2220641	Glyphosate	94.1	87.8	P/P	40 - 140
2220641	Sucralose	105	106	P/P	40 - 150

Reference Method: SM 4500 F-C-2011

Batch ID: P392875

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2220795	Fluoride	95.0	94.4	P/P	94 - 107

Reference Method: SM 4500 F-C-2011

Batch ID: P393220

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2221661	Fluoride	101	101	P/P	94 - 107

Reference Method: SM 5310 B-2011

Batch ID: P393048

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2220678	Organic Carbon	100	99.2	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P392826

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2220786	Turbidity	0.233	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P392911

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2220913	Barium	0.218	Spike	P	0 - 20
2220913	Calcium	1.25	Spike	P	0 - 20
2220913	Iron	1.85	Spike	P	0 - 20
2220913	Magnesium	1.56	Spike	P	0 - 20
2220913	Manganese	0.171	Spike	P	0 - 20
2220913	Potassium	0.705	Spike	P	0 - 20
2220913	Sodium	0.494	Spike	P	0 - 20
2220913	Zinc	0.399	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P392911

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2220913	Aluminum	0.451	Spike	P	0 - 20
2220913	Antimony	0.303	Spike	P	0 - 20
2220913	Arsenic	0.697	Spike	P	0 - 20
2220913	Beryllium	0.541	Spike	P	0 - 20
2220913	Boron	0.789	Spike	P	0 - 20
2220913	Cadmium	2.53	Spike	P	0 - 20
2220913	Chromium	0.274	Spike	P	0 - 20
2220913	Copper	0.886	Spike	P	0 - 20
2220913	Lead	1.28	Spike	P	0 - 20
2220913	Nickel	0.337	Spike	P	0 - 20
2220913	Selenium	0.406	Spike	P	0 - 20
2220913	Silver	1.01	Spike	P	0 - 20
2220913	Thallium	2.45	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P392955

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2220626	Chloride	0.0401	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P392957

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2220626	Sulfate	0.576	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P393457

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2220706	Ammonia-N	2.04	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P393458

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2220861	Ammonia-N	0.643	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P393181

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2220793	Kjeldahl Nitrogen	2.92	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P392884

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2220788	NO2NO3-N	0.897	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P393247

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2220788	Total-P	0.382	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P392767

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2220634	O-Phosphate-P	1.68	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P392769

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2220897	O-Phosphate-P	1.22	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P392788

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2220844	2,4-D	6.77	Spike	P	0 - 30
2220844	Acetaminophen	3.72	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P392788

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2220844	Acetamiprid	6.14	Spike	P	0 - 30
2220844	Afidopyropen	6.13	Spike	P	0 - 30
2220844	Bentazon	2.64	Spike	P	0 - 30
2220844	Benzovindiflupyr	3.86	Spike	P	0 - 30
2220844	Carbamazepine	5.85	Spike	P	0 - 30
2220844	Clothianidin	3.22	Spike	P	0 - 30
2220844	Dinotefuran	7.04	Spike	P	0 - 30
2220844	Diuron	0.971	Spike	P	0 - 30
2220844	Fenuron	5.95	Spike	P	0 - 30
2220844	Fluridone	2.35	Spike	P	0 - 30
2220844	Hydrocodone	20.5	Spike	P	0 - 30
2220844	Ibuprofen	4.03	Spike	P	0 - 30
2220844	Imazapyr	4.81	Spike	P	0 - 30
2220844	Imidacloprid	5.22	Spike	P	0 - 30
2220844	Linuron	5.34	Spike	P	0 - 30
2220844	Mandestrobin	5.39	Spike	P	0 - 30
2220844	MCP	2.23	Spike	P	0 - 30
2220844	Naproxen	14.3	Spike	P	0 - 30
2220844	Primidone	18.1	Spike	P	0 - 30
2220844	Pyraclostrobin	5.22	Spike	P	0 - 30
2220844	Thiamethoxam	1.60	Spike	P	0 - 30
2220844	Tolfenpyrad	0.995	Spike	P	0 - 30
2220844	Triclopyr	2.48	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P392897

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2220641	Acesulfame K	0.905	Spike	P	0 - 30
2220641	AMPA	0.326	Spike	P	0 - 30
2220641	Endothall	2.53	Spike	P	0 - 30
2220641	Glufosinate	17.1	Spike	P	0 - 30
2220641	Glyphosate	7.01	Spike	P	0 - 30
2220641	Sucralose	0.971	Spike	P	0 - 30

Reference Method: SM 2120 B-2011
Batch ID: P392770

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2220676	Color (true)	1.44	Sample	P	0 - 20

Reference Method: SM 2120 B-2011
Batch ID: P392771

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2220787	Color (true)	0.991	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2320 B-2011
Batch ID: P392871

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2220787	Total Alkalinity	3.43	Sample	P	0 - 8.1

Reference Method: SM 2320 B-2011
Batch ID: P392872

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2220795	Total Alkalinity	2.87	Sample	P	0 - 8.1

Reference Method: SM 2540 C-2011
Batch ID: P393351

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2220626	TDS	5.28	Sample	P	0 - 10

Reference Method: SM 2540 C-2011
Batch ID: P393352

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2220663	TDS	5.28	Sample	P	0 - 10

Reference Method: SM 2540 C-2011
Batch ID: P393353

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2220795	TDS	5.88	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P392875

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2220795	Fluoride	0.469	Spike	P	0 - 2.8

Reference Method: SM 4500 F-C-2011
Batch ID: P393220

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2221661	Fluoride	0.0	Spike	P	0 - 2.8

Reference Method: SM 5310 B-2011
Batch ID: P393048

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2220678	Organic Carbon	0.532	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: 2220843

Field Sample ID: G4SE0131

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	94.5	P	30 - 160
EPA 8321B	Acetaminophen-d4	84.2	P	30 - 160
EPA 8321B	Carbamazepine-d10	55.4	P	30 - 160
EPA 8321B	Diuron-d6	44.5	P	30 - 160
EPA 8321B	Endothall-d6	101	P	40 - 160
EPA 8321B	Endothall-d6	101	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	66.2	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	66.2	P	40 - 160
EPA 8321B	Ibuprofen-d3	84.7	P	30 - 160
EPA 8321B	Primidone-d5	65.5	P	30 - 160
EPA 8321B	Sucralose-d6	118	P	30 - 160
EPA 8321B	Sucralose-d6	118	P	30 - 160

Lab Sample ID: 2220844

Field Sample ID: G1SE0024

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	80.7	P	30 - 160
EPA 8321B	Acetaminophen-d4	83.1	P	30 - 160
EPA 8321B	Carbamazepine-d10	48.3	P	30 - 160
EPA 8321B	Diuron-d6	43.6	P	30 - 160
EPA 8321B	Endothall-d6	94.5	P	40 - 160
EPA 8321B	Endothall-d6	94.5	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	74.5	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	74.5	P	40 - 160
EPA 8321B	Ibuprofen-d3	87.0	P	30 - 160
EPA 8321B	Primidone-d5	66.5	P	30 - 160
EPA 8321B	Sucralose-d6	120	P	30 - 160
EPA 8321B	Sucralose-d6	120	P	30 - 160

Lab Sample ID: 2220845

Field Sample ID: FB 012121

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	103	P	30 - 160
EPA 8321B	Acetaminophen-d4	69.8	P	30 - 160
EPA 8321B	Carbamazepine-d10	74.7	P	30 - 160
EPA 8321B	Diuron-d6	72.0	P	30 - 160
EPA 8321B	Endothall-d6	102	P	40 - 160
EPA 8321B	Endothall-d6	102	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	98.2	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	98.2	P	40 - 160
EPA 8321B	Ibuprofen-d3	94.1	P	30 - 160
EPA 8321B	Primidone-d5	100	P	30 - 160
EPA 8321B	Sucralose-d6	109	P	30 - 160
EPA 8321B	Sucralose-d6	109	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A103194

Included Lab Sample IDs: 2220790, 2220791, 2220794, 2220797, 2220800, 2220803

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.6	100	P/P	90 - 110
O-Phosphate-P	99.6	99.6	P/P	90 - 110
O-Phosphate-P	99.7	99.5	P/P	90 - 110

Reference Method: SM 2120 B-2011

Run ID: A103195

Included Lab Sample IDs: 2220786, 2220787, 2220792, 2220795, 2220798, 2220801

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	100	102	P/P	90 - 115
Color (true)	102	101	P/P	90 - 115
Color (true)	98.1	99.8	P/P	90 - 115
Color (true)	99.8	100	P/P	90 - 115

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A103212

Included Lab Sample IDs: 2220786, 2220787, 2220792, 2220795, 2220798, 2220801

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	102	100	P/P	95 - 105

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A103226

Included Lab Sample IDs: 2220786, 2220787, 2220792, 2220795, 2220798, 2220801

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	99.1	98.8	P/P	90 - 110
Sulfate	97.9	98.0	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A103229

Included Lab Sample IDs: 2220786, 2220787, 2220792, 2220795, 2220798, 2220801

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	93.1	96.9	P/P	90 - 110
Total Alkalinity	94.9	96.9	P/P	90 - 110
Total Alkalinity	96.9	94.9	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A103229

Included Lab Sample IDs: 2220795

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.5	97.6	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A103236

Included Lab Sample IDs: 2220788, 2220789, 2220793, 2220796, 2220799, 2220802

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 353.2 Rev. 2.0

Run ID: A103236

Included Lab Sample IDs: 2220788, 2220789, 2220793, 2220796, 2220799, 2220802

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

Reference Method: EPA 8321B

Run ID: A103282

Included Lab Sample IDs: 2220843, 2220844, 2220845

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	103	103	P/P	60 - 160
AMPA	108	108	P/P	60 - 160
Endothall	102	98.9	P/P	60 - 160
Glufosinate	103	94.9	P/P	60 - 160
Glyphosate	87.6	90.8	P/P	60 - 160

Reference Method: SM 5310 B-2011

Run ID: A103283

Included Lab Sample IDs: 2220788, 2220789, 2220793, 2220796, 2220799, 2220802

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.6	98.2	P/P	90 - 110
Organic Carbon	97.8	97.6	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A103292

Included Lab Sample IDs: 2220843, 2220844, 2220845

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	107	108	P/P	50 - 150
Acetaminophen	95.7	78.7	P/P	60 - 160
Acetamiprid	119	107	P/P	50 - 150
Afidopyropen	110	84.5	P/P	50 - 150
Bentazon	118	120	P/P	50 - 160
Benzovindiflupyr	112	101	P/P	50 - 160
Carbamazepine	124	101	P/P	60 - 150
Clothianidin	104	94.1	P/P	60 - 150
Dinotefuran	96.6	93.9	P/P	50 - 150
Diuron	116	109	P/P	60 - 160
Fenuron	113	96.9	P/P	60 - 150
Fluridone	109	100	P/P	60 - 160
Hydrocodone	101	99.8	P/P	60 - 150
Ibuprofen	105	104	P/P	50 - 160
Imazapyr	102	94.8	P/P	50 - 160
Imidacloprid	107	99.1	P/P	60 - 150
Linuron	100	96.5	P/P	60 - 150
Mandestrobin	112	99.2	P/P	50 - 150
MCPP	113	128	P/P	50 - 150
Naproxen	76.7	100	P/P	50 - 160
Primidone	93.8	87.3	P/P	60 - 150
Pyraclostrobin	107	103	P/P	60 - 150
Thiamethoxam	125	117	P/P	50 - 150
Tolfenpyrad	121	103	P/P	60 - 150
Triclopyr	115	118	P/P	50 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A103301

Included Lab Sample IDs: 2220846, 2220847

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	101	101	P/P	90 - 110
Barium	101	101	P/P	95 - 105
Calcium	100	99.6	P/P	95 - 105
Calcium	101	100	P/P	90 - 110
Iron	100	98.1	P/P	95 - 105
Iron	99.8	99.0	P/P	90 - 110
Magnesium	100	98.6	P/P	95 - 105
Magnesium	101	100	P/P	90 - 110
Manganese	102	103	P/P	90 - 110
Manganese	102	101	P/P	95 - 105
Potassium	99.1	100	P/P	90 - 110
Potassium	99.3	97.6	P/P	95 - 105
Sodium	100	101	P/P	90 - 110
Sodium	100	99.2	P/P	95 - 105
Zinc	100	101	P/P	95 - 105
Zinc	101	99.9	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A103349

Included Lab Sample IDs: 2220788, 2220789, 2220793, 2220796, 2220799, 2220802

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	96.2	96.7	P/P	90 - 110
Kjeldahl Nitrogen	97.3	96.2	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A103352

Included Lab Sample IDs: 2220786, 2220787, 2220792, 2220798, 2220801

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

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A103353

Included Lab Sample IDs: 2220846, 2220847

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	90.7	91.7	P/P	90 - 110
Aluminum	91.5	93.2	P/P	90 - 110
Antimony	95.4	97.2	P/P	90 - 110
Antimony	95.9	95.8	P/P	90 - 110
Arsenic	92.6	92.8	P/P	90 - 110
Arsenic	95.3	94.0	P/P	90 - 110
Cadmium	91.1	91.4	P/P	90 - 110
Cadmium	91.1	92.8	P/P	90 - 110
Lead	94.7	96.8	P/P	90 - 110
Lead	95.9	95.6	P/P	90 - 110
Selenium	92.1	93.4	P/P	90 - 110
Selenium	93.1	93.2	P/P	90 - 110
Silver	99.6	101	P/P	90 - 110
Silver	99.9	100	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A103379

Included Lab Sample IDs: 2220846, 2220847

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Beryllium	102	99.7	P/P	90 - 110
Beryllium	99.9	101	P/P	90 - 110
Copper	101	101	P/P	90 - 110
Copper	99.1	99.0	P/P	90 - 110
Nickel	101	102	P/P	90 - 110
Nickel	99.8	99.6	P/P	90 - 110
Thallium	107	108	P/P	90 - 110
Thallium	109	110	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A103391

Included Lab Sample IDs: 2220788, 2220789, 2220793, 2220796, 2220799

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	97.9	99.4	P/P	90 - 110
Total-P	99.4	99.4	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A103399

Included Lab Sample IDs: 2220846, 2220847

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Boron	101	98.3	P/P	90 - 110
Boron	93.6	97.1	P/P	90 - 110
Chromium	101	96.3	P/P	90 - 110
Chromium	103	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A103417

Included Lab Sample IDs: 2220802

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	100	98.5	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A103454

Included Lab Sample IDs: 2220788, 2220789, 2220793, 2220796, 2220799, 2220802

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	90.6	97.6	P/P	90 - 110
Ammonia-N	97.9	90.6	P/P	90 - 110
Ammonia-N	98.2	97.9	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A103516

Included Lab Sample IDs: 2220843, 2220844, 2220845

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	105	110	P/P	60 - 160

Quality Assurance Report

Calibration Verification

* 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						0.233	
EPA 200.7 Rev. 4.4	Barium	98.8	98.8	103	103			0.218
	Calcium	106	102	108	109			1.25
	Iron	103	98.3	105	107			1.85
	Magnesium	105	101	106	108			1.56
	Manganese	99.9	97.6	103	103			0.171
	Potassium	101	100	106	107			0.705
	Sodium	102	101	104	105			0.494
	Zinc	98.1	97.8	99.1	98.7			0.399
EPA 200.8 Rev. 5.4	Aluminum	86.7	87.5	87.9	88.3			0.451
	Antimony	96.2	95.8	95.5	98.6			0.303
	Arsenic	90.5	90.3	89.7	91.1			0.697
	Beryllium	94.2	92.8	93.3	93.8			0.541
	Boron	94.7	95.8	96.6	95.7			0.789
	Cadmium	88.0	87.4	89.7	89.0			2.53
	Chromium	101	100	100	96.0			0.274
	Copper	98.5	95.5	96.4	94.4			0.886
	Lead	93.2	94.9	93.7	95.4			1.28
	Nickel	99.3	96.5	96.8	94.8			0.337
	Selenium	89.4	89.4	89.7	90.1			0.406
	Silver	101	102	101	101			1.01
	Thallium	101	99.7	102	102			2.45
EPA 300.0 Rev. 2.1	Chloride	98.3	97.7	97.4			0.0401	
	Sulfate	97.7	98.4	97.4			0.576	
EPA 350.1 Rev. 2.0	Ammonia-N	99.0	93.9	96.1				2.04
	Ammonia-N	98.1	95.3	94.6				0.643
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	100						2.92
EPA 353.2 Rev. 2.0	NO2NO3-N	100	97.0	98.0				0.897
EPA 365.1 Rev. 2.0	Total-P	105	107	107				0.382
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.8	97.2	99.3				1.68
	O-Phosphate-P	104	98.1	99.3				1.22
EPA 8321B	2,4-D	117	78.3	84.5				6.77
	Acesulfame K	101	107	106				0.905
	Acetaminophen	73.6	87.5	84.3				3.72
	Acetamiprid	95.3	57.5	61.1				6.14
	Afidopyropen	75.8	59.1	62.8				6.13
	AMPA	104	126	126				0.326
	Bentazon	75.1	20.0	19.1				2.64
	Benzovindiflupyr	77.3	64.8	62.4				3.86
	Carbamazepine	85.2	50.7	47.8				5.85
	Clothianidin	95.4	60.3	62.3				3.22
	Dinotefuran	84.6	84.8	79.0				7.04
	Diuron	60.0	34.6	34.2				0.971
	Endothall	93.7	103	106				2.53
	Fenuron	94.1	48.0	50.9				5.95
	Fluridone	83.7	65.3	63.8				2.35
	Glufosinate	102	95.4	113				17.1
	Glyphosate	80.8	94.1	87.8				7.01
	Hydrocodone	93.9	71.1	57.9				20.5
	Ibuprofen	99.1	82.7	79.4				4.03
	Imazapyr	120	102	96.4				4.81
	Imidacloprid	107	102	97.0				5.22
	Linuron	71.6	54.4	51.5				5.34
	Mandestrobin	77.6	71.6	67.8				5.39

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
EPA 8321B	MCPP	115	82.4	80.6		2.23
	Naproxen	72.2	85.2	98.3		14.3
	Primidone	102	62.9	52.5		18.1
	Pyraclostrobin	74.9	70.5	66.9		5.22
	Sucralose	108	105	106		0.971
	Thiamethoxam	107	93.3	91.9		1.60
	Tolfenpyrad	52.0	50.5	51.0		0.995
	Triclopyr	108	88.2	90.4		2.48
SM 2120 B-2011	Color (true)	97.6			1.44	
	Color (true)	97.7			0.991	
SM 2320 B-2011	Total Alkalinity	96.4			3.43	
	Total Alkalinity	94.7			2.87	
SM 2540 C-2011	TDS				5.28	
	TDS				5.28	
	TDS				5.88	
SM 4500 F-C-2011	Fluoride	96.1	95.0	94.4		0.469
	Fluoride	100	101	101		0.0
SM 5310 B-2011	Organic Carbon	96.8	100	99.2		0.532

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2220786, 2220787, 2220795, 2220798, 2220801
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2220846, 2220847
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2220846, 2220847
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2220786, 2220787, 2220792, 2220795, 2220798, 2220801
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2220786, 2220787, 2220792, 2220795, 2220798, 2220801
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2220788, 2220789, 2220793, 2220796, 2220799, 2220802
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2220788, 2220789, 2220793, 2220796, 2220799, 2220802
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2220788, 2220789, 2220793, 2220796, 2220799, 2220802
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2220788, 2220789, 2220793, 2220796, 2220799, 2220802
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2220790, 2220791, 2220794, 2220797, 2220800, 2220803
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2220843, 2220844, 2220845
EPA 8321B	Water soluble organic compounds by HPLC/MS/MS	2220843, 2220844, 2220845
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2220786, 2220787, 2220792, 2220795, 2220798, 2220801
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2220786, 2220787, 2220792, 2220795, 2220798, 2220801
SM 2340B	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO3	2220846
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2220786, 2220787, 2220792, 2220795, 2220798, 2220801
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2220786, 2220787, 2220792, 2220795, 2220798, 2220801
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2220786, 2220787, 2220792, 2220795, 2220798, 2220801

Reference Method Descriptions

Method	Description	<u>Associated Samples</u>
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2220788, 2220789, 2220793, 2220796, 2220799, 2220802

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	01/22/2021			01/22/2021 15:44	Yen Ta	2220786, 2220787, 2220795, 2220798, 2220801
EPA 200.7 Rev. 4.4	01/22/2021	01/26/2021 15:00	Elliott D. Healy	01/27/2021 14:19	Betina Topolski	2220847
	01/22/2021	01/26/2021 15:00	Elliott D. Healy	01/27/2021 17:39	Betina Topolski	2220846
EPA 200.8 Rev. 5.4	01/22/2021	01/26/2021 15:00	Elliott D. Healy	02/01/2021 23:38	Alexander Thompson	2220847
	01/22/2021	01/26/2021 15:00	Elliott D. Healy	02/02/2021 02:36	Alexander Thompson	2220846
	01/22/2021	01/26/2021 15:00	Elliott D. Healy	02/02/2021 17:07	Alexander Thompson	2220847
	01/22/2021	01/26/2021 15:00	Elliott D. Healy	02/02/2021 19:27	Alexander Thompson	2220846
	01/22/2021	01/26/2021 15:00	Elliott D. Healy	02/03/2021 11:38	Alexander Thompson	2220847
	01/22/2021	01/26/2021 15:00	Elliott D. Healy	02/03/2021 13:34	Alexander Thompson	2220846
EPA 300.0 Rev. 2.1	01/22/2021			01/26/2021 20:44	Lipi Saha	2220786
	01/22/2021			01/26/2021 20:56	Lipi Saha	2220787
	01/22/2021			01/26/2021 21:08	Lipi Saha	2220792
	01/22/2021			01/26/2021 21:20	Lipi Saha	2220795
	01/22/2021			01/26/2021 21:32	Lipi Saha	2220798
	01/22/2021			01/26/2021 21:44	Lipi Saha	2220801
EPA 350.1 Rev. 2.0	01/22/2021			02/05/2021 18:48	Ping Hua	2220799
	01/22/2021			02/05/2021 19:06	Ping Hua	2220802
	01/22/2021			02/05/2021 19:30	Ping Hua	2220788
	01/22/2021			02/05/2021 19:32	Ping Hua	2220789
	01/22/2021			02/05/2021 19:33	Ping Hua	2220793
	01/22/2021			02/05/2021 19:35	Ping Hua	2220796
EPA 351.2 Rev. 2.0	01/22/2021	02/01/2021 09:53	Yen Ta	02/01/2021 19:27	Julia Storbeck	2220793
	01/22/2021	02/01/2021 09:53	Yen Ta	02/01/2021 19:40	Julia Storbeck	2220788
	01/22/2021	02/01/2021 09:53	Yen Ta	02/01/2021 19:41	Julia Storbeck	2220789
	01/22/2021	02/01/2021 09:53	Yen Ta	02/01/2021 19:43	Julia Storbeck	2220796
	01/22/2021	02/01/2021 09:53	Yen Ta	02/01/2021 19:45	Julia Storbeck	2220799
	01/22/2021	02/01/2021 09:53	Yen Ta	02/01/2021 19:46	Julia Storbeck	2220802
EPA 353.2 Rev. 2.0	01/22/2021			01/26/2021 09:43	Beverly Y. Sanders	2220788
	01/22/2021			01/26/2021 09:49	Beverly Y. Sanders	2220789
	01/22/2021			01/26/2021 09:50	Beverly Y. Sanders	2220793
	01/22/2021			01/26/2021 09:54	Beverly Y. Sanders	2220802
	01/22/2021			01/26/2021 10:28	Beverly Y. Sanders	2220796
	01/22/2021			01/26/2021 10:29	Beverly Y. Sanders	2220799
EPA 365.1 Rev. 2.0	01/22/2021	02/02/2021 13:00	Lipi Saha	02/03/2021 14:03	Shengyu Wang	2220788
	01/22/2021	02/02/2021 13:00	Lipi Saha	02/03/2021 14:06	Shengyu Wang	2220789
	01/22/2021	02/02/2021 13:00	Lipi Saha	02/03/2021 14:07	Shengyu Wang	2220793
	01/22/2021	02/02/2021 13:00	Lipi Saha	02/03/2021 14:08	Shengyu Wang	2220796
	01/22/2021	02/02/2021 13:00	Lipi Saha	02/03/2021 14:12	Shengyu Wang	2220799
	01/22/2021	02/02/2021 13:00	Lipi Saha	02/04/2021 12:13	Shengyu Wang	2220802

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 365.1 Rev. 2.0 dissolved	01/22/2021			01/22/2021 16:09	Ping Hua	2220790
	01/22/2021			01/22/2021 16:10	Ping Hua	2220791
	01/22/2021			01/22/2021 16:15	Ping Hua	2220794
	01/22/2021			01/22/2021 16:17	Ping Hua	2220800
	01/22/2021			01/22/2021 16:44	Ping Hua	2220803
	01/22/2021			01/22/2021 16:46	Ping Hua	2220797
EPA 8321B	01/22/2021	01/26/2021 13:30	Rebecca Ware	01/27/2021 18:47	Rebecca Ware	2220843
	01/22/2021	01/26/2021 13:30	Rebecca Ware	01/27/2021 19:01	Rebecca Ware	2220844
	01/22/2021	01/26/2021 13:30	Rebecca Ware	01/27/2021 19:15	Rebecca Ware	2220845
	01/22/2021	01/26/2021 13:30	Rebecca Ware	02/09/2021 14:17	Rebecca Ware	2220843
	01/22/2021	01/26/2021 13:30	Rebecca Ware	02/09/2021 14:28	Rebecca Ware	2220844
	01/22/2021	01/26/2021 13:30	Rebecca Ware	02/09/2021 14:40	Rebecca Ware	2220845
SM 2120 B-2011	01/22/2021	01/27/2021 09:00	Hoor Shaik	01/28/2021 18:47	Juyoung Kim	2220843
	01/22/2021	01/27/2021 09:00	Hoor Shaik	01/28/2021 19:22	Juyoung Kim	2220844
	01/22/2021	01/27/2021 09:00	Hoor Shaik	01/28/2021 19:56	Juyoung Kim	2220845
	01/22/2021			01/22/2021 16:48	Madeline Gruver	2220786
	01/22/2021			01/22/2021 16:52	Madeline Gruver	2220787
	01/22/2021			01/22/2021 16:53	Madeline Gruver	2220792
SM 2320 B-2011	01/22/2021			01/22/2021 16:55	Madeline Gruver	2220801
	01/22/2021			01/22/2021 17:25	Madeline Gruver	2220795
	01/22/2021			01/22/2021 17:28	Madeline Gruver	2220798
	01/22/2021			01/25/2021 16:17	Dale L. Simmons	2220787
	01/22/2021			01/25/2021 19:29	Dale L. Simmons	2220786
	01/22/2021			01/25/2021 19:42	Dale L. Simmons	2220792
SM 2340B	01/22/2021			01/25/2021 19:56	Dale L. Simmons	2220798
	01/22/2021			01/25/2021 20:47	Dale L. Simmons	2220801
	01/22/2021			01/25/2021 22:31	Dale L. Simmons	2220795
	01/22/2021			01/27/2021 17:39	Betina Topolski	2220846
	01/22/2021			01/26/2021 14:21	Yijie Li	2220786, 2220787, 2220792, 2220795, 2220798, 2220801
	01/22/2021			01/26/2021 14:21	Yijie Li	2220786, 2220787, 2220792, 2220795, 2220798, 2220801
SM 2540 D-2011	01/22/2021			01/26/2021 14:21	Yijie Li	2220786, 2220787, 2220792, 2220795, 2220798, 2220801
SM 4500 F-C-2011	01/22/2021			01/25/2021 22:21	Dale L. Simmons	2220795
	01/22/2021			01/30/2021 10:18	Dale L. Simmons	2220786
	01/22/2021			01/30/2021 10:23	Dale L. Simmons	2220787
	01/22/2021			01/30/2021 10:28	Dale L. Simmons	2220792
	01/22/2021			01/30/2021 10:33	Dale L. Simmons	2220798
	01/22/2021			01/30/2021 10:38	Dale L. Simmons	2220801
SM 5310 B-2011	01/22/2021			01/27/2021 01:27	Touraj Touran	2220788
	01/22/2021			01/27/2021 01:39	Touraj Touran	2220789

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 5310 B-2011	01/22/2021			01/27/2021 02:16	Touraj Touran	2220793
	01/22/2021			01/27/2021 02:28	Touraj Touran	2220796
	01/22/2021			01/27/2021 02:40	Touraj Touran	2220799
	01/22/2021			01/27/2021 02:52	Touraj Touran	2220802