

Chemical Analysis Report

TLH-ROC-2021-11-01-01

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

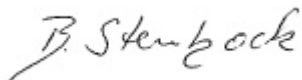
Event Description: **Monday Run - Apalachicola River, Watson Bayou, Dead Lakes (West Arm), Parker Cr,**
Request ID: **RQ-2021-11-01-35**
Customer: **TLH-ROC**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
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Certified by: Dr. rer. nat. Bettina Steinbock, Environmental Administrator

Date Certified: 23-NOV-2021 15:00



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: Watson Bayou South

Collection Date/Time: 11/01/2021 11:15

Field ID: G3TLHR0006

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2287092	EPA 180.1 Rev. 2.0	Turbidity	1.3		NTU	P405885	
	SM 2320 B-2011	Total Alkalinity	94		mg CaCO3/L	P405987	
	SM 2540 D-2011	TSS	4	IA	mg/L	P406420	
	SM 4500 F-C-2011	Fluoride	0.90		mg F/L	P405990	
2287093	EPA 350.1 Rev. 2.0	Ammonia-N	0.008		mg N/L	P406063	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.34	I	mg N/L	P406122	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.061		mg N/L	P405915	
	EPA 365.1 Rev. 2.0	Total-P	0.021		mg P/L	P405925	
	SM 5310 B-2011	Organic Carbon	4.6		mg C/L	P406059	
2287094	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.008	I	mg P/L	P405874	

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: Parker Creek @ Park

Collection Date/Time: 11/01/2021 12:00

Field ID: G3TLHR0040

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2287098	EPA 180.1 Rev. 2.0	Turbidity	9.2		NTU	P405885	
	EPA 300.0 Rev. 2.1	Chloride	7.6		mg Cl/L	P406039	
		Sulfate	14		mg SO4/L	P406042	
	SM 2120 B-2011	Color (true)	51		PCU	P405890	
	SM 2320 B-2011	Total Alkalinity	25		mg CaCO3/L	P406172	
	SM 2540 C-2011	TDS	79		mg/L	P406360	
	SM 2540 D-2011	TSS	18		mg/L	P406375	
	SM 4500 F-C-2011	Fluoride	0.054	I	mg F/L	P405988	
2287099	EPA 350.1 Rev. 2.0	Ammonia-N	0.059		mg N/L	P406245	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.61		mg N/L	P406056	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.11		mg N/L	P405849	
	EPA 365.1 Rev. 2.0	Total-P	0.068		mg P/L	P405926	
	SM 5310 B-2011	Organic Carbon	8.7		mg C/L	P406058	
2287100	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.007	I	mg P/L	P405871	
2287115	EPA 8321B	2,4-D	0.0020	U	ug/L	P405850	
		Acesulfame K	0.10	U	ug/L	P405862	
		2,4,5-T	0.0040	U	ug/L	P405850	
		AMPA	0.10	U	ug/L	P405862	
		Acetaminophen	0.0080	U	ug/L	P405850	
		Acetamiprid	0.0020	U	ug/L	P405850	
		Endothall	0.25	U	ug/L	P405862	
		Glufosinate	0.10	U	ug/L	P405862	
		Glyphosate	0.10	U	ug/L	P405862	
		Afidopyropen	0.0020	U	ug/L	P405850	
		Bentazon	8.0E-04	U	ug/L	P405850	
		Sucralose	0.11		ug/L	P405862	
		Benzovindiflupyr	0.0020	U	ug/L	P405850	
		Carbamazepine	8.0E-04	U	ug/L	P405850	
		Clothianidin	0.0020	U	ug/L	P405850	
		Dinotefuran	0.0020	U	ug/L	P405850	MS
		Diuron	0.0020	U	ug/L	P405850	
		Fenuron	0.016	U	ug/L	P405850	
		Fluridone	8.0E-04	U	ug/L	P405850	
		Imazapyr	0.0040	U	ug/L	P405850	
		Hydrocodone	0.0020	U	ug/L	P405850	
		Ibuprofen	0.020	U	ug/L	P405850	
		Imidacloprid	0.0020	U	ug/L	P405850	MS
		Linuron	0.0040	U	ug/L	P405850	
		Mandestrobin	0.0020	U	ug/L	P405850	
		MCPP	0.0040	U	ug/L	P405850	
		Naproxen	0.0080	U	ug/L	P405850	
		Primidone	0.0040	UJ	ug/L	P405850	SUR
		Pyraclostrobin	0.0020	U	ug/L	P405850	

Field ID: G3TLHR0040

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2287115	EPA 8321B	Thiamethoxam	0.0020	U	ug/L	P405850	MS
		Tolfenpyrad	0.0020	U	ug/L	P405850	
		Triclopyr	0.0040	U	ug/L	P405850	

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

Sample Location: Mule Creek @ Alvie Holmes Rd.

Collection Date/Time: 11/01/2021 12:30

Field ID: G3TLHR0017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2287101	EPA 180.1 Rev. 2.0	Turbidity	4.8	A	NTU	P405886	
	EPA 300.0 Rev. 2.1	Chloride	4.8		mg Cl/L	P406110	
		Sulfate	0.43	I	mg SO4/L	P406112	
	SM 2120 B-2011	Color (true)	42	A	PCU	P405890	
	SM 2320 B-2011	Total Alkalinity	5.1		mg CaCO3/L	P406172	
	SM 2540 C-2011	TDS	24	I	mg/L	P406360	
	SM 2540 D-2011	TSS	2	I	mg/L	P406375	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P405988	
2287102	EPA 350.1 Rev. 2.0	Ammonia-N	0.008		mg N/L	P406245	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.23		mg N/L	P406056	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.034		mg N/L	P405849	
	EPA 365.1 Rev. 2.0	Total-P	0.012		mg P/L	P405926	
	SM 5310 B-2011	Organic Carbon	3.9		mg C/L	P406058	
2287103	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	I	mg P/L	P405872	

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: Dead Lakes West Arm

Collection Date/Time: 11/01/2021 13:15

Field ID: G2TLHR0048

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2287095	EPA 180.1 Rev. 2.0	Turbidity	4.4		NTU	P405885	
	EPA 300.0 Rev. 2.1	Chloride	4.4		mg Cl/L	P406039	
		Sulfate	1.6		mg SO4/L	P406042	
	SM 2120 B-2011	Color (true)	110		PCU	P405890	
	SM 2320 B-2011	Total Alkalinity	11		mg CaCO3/L	P406172	
	SM 2540 C-2011	TDS	41		mg/L	P406360	
	SM 2540 D-2011	TSS	2	U	mg/L	P406375	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P405988	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.11		mg N/L	P406530	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.52		mg N/L	P406056	
2287096	EPA 353.2 Rev. 2.0	NO2NO3-N	0.071		mg N/L	P405849	
	EPA 365.1 Rev. 2.0	Total-P	0.016		mg P/L	P405926	
	SM 5310 B-2011	Organic Carbon	9.3		mg C/L	P406058	
	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.004	U	mg P/L	P405871	
	dissolved						

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: Apalachicola River @ Bristol Landing

Collection Date/Time: 11/01/2021 14:20

Field ID: G2TLHR0043

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2287089	EPA 180.1 Rev. 2.0	Turbidity	4.9		NTU	P405885	
	EPA 300.0 Rev. 2.1	Chloride	5.5	A	mg Cl/L	P406039	
		Sulfate	6.8	A	mg SO4/L	P406042	
	SM 2120 B-2011	Color (true)	21		PCU	P405890	
	SM 2320 B-2011	Total Alkalinity	45		mg CaCO3/L	P406172	
	SM 2540 C-2011	TDS	70		mg/L	P406359	
	SM 2540 D-2011	TSS	3	I	mg/L	P406374	
	SM 4500 F-C-2011	Fluoride	0.068	I	mg F/L	P405988	
2287090	EPA 350.1 Rev. 2.0	Ammonia-N	0.027		mg N/L	P406245	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.28		mg N/L	P406056	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.70		mg N/L	P405849	
	EPA 365.1 Rev. 2.0	Total-P	0.029		mg P/L	P405926	
	SM 5310 B-2011	Organic Carbon	3.4		mg C/L	P406058	
2287091	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.012		mg P/L	P405871	
2287114	EPA 8321B	2,4-D	0.018		ug/L	P405850	
		Acesulfame K	0.10	U	ug/L	P405862	
		2,4,5-T	0.0040	U	ug/L	P405850	
		AMPA	0.10	U	ug/L	P405862	
		Acetaminophen	0.026	I	ug/L	P405850	
		Acetamiprid	0.0020	U	ug/L	P405850	
		Endothall	0.25	U	ug/L	P405862	
		Glufosinate	0.10	U	ug/L	P405862	
		Glyphosate	0.10	U	ug/L	P405862	
		Afidopyropen	0.0020	U	ug/L	P405850	
		Bentazon	0.0014	I	ug/L	P405850	
		Sucralose	0.88		ug/L	P405862	
		Benzovindiflupyr	0.0020	U	ug/L	P405850	
		Carbamazepine	0.0021	I	ug/L	P405850	
		Clothianidin	0.0020	I	ug/L	P405850	
		Dinotefuran	0.0020	U	ug/L	P405850	MS
		Diuron	0.0086		ug/L	P405850	
		Fenuron	0.016	U	ug/L	P405850	
		Fluridone	0.0016	I	ug/L	P405850	
		Imazapyr	0.064		ug/L	P405850	
		Hydrocodone	0.0020	U	ug/L	P405850	
		Ibuprofen	0.020	U	ug/L	P405850	
		Imidacloprid	0.0048	I	ug/L	P405850	MS
		Linuron	0.0040	U	ug/L	P405850	
		Mandestrobin	0.0020	U	ug/L	P405850	
		MCPP	0.0048	I	ug/L	P405850	
		Naproxen	0.0080	U	ug/L	P405850	
		Primidone	0.0040	U	ug/L	P405850	
		Pyraclostrobin	0.0020	U	ug/L	P405850	

Field ID: G2TLHR0043

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2287114	EPA 8321B	Thiamethoxam	0.0020	U	ug/L	P405850	MS
		Tolfenpyrad	0.0020	U	ug/L	P405850	
		Triclopyr	0.0040	U	ug/L	P405850	
2287116	EPA 200.7 Rev. 4.4	Barium	22.2		ug/L	P405903	
		Calcium	18.5		mg/L	P405903	
		Iron	390		ug/L	P405903	
		Magnesium	2.10		mg/L	P405903	
		Manganese	46.1		ug/L	P405903	
		Potassium	2.1		mg/L	P405903	
		Sodium	6.7		mg/L	P405903	
	EPA 200.8 Rev. 5.4	Zinc	5.0	U	ug/L	P405903	
		Aluminum	124		ug/L	P405903	
		Antimony	0.051	I	ug/L	P405903	
		Arsenic	0.36		ug/L	P405903	
		Beryllium	0.010	U	ug/L	P405903	
		Boron**	19.2		ug/L	P405903	
		Cadmium	0.020	U	ug/L	P405903	
		Chromium	0.40	U	ug/L	P405903	
		Copper	0.66	I	ug/L	P405903	
		Lead	0.37	I	ug/L	P405903	
		Nickel	0.50	U	ug/L	P405903	
		Selenium	0.20	U	ug/L	P405903	
		Silver	0.010	U	ug/L	P405903	
		Thallium	0.10	U	ug/L	P405903	
	SM 2340B	Hardness	54.8		mg/L	P405903	

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: P405885

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P405886

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P405903

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: P405903

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: P406039

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P406042

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P406110

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P406112

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P406063

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P406245

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P406530

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P406056

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P406122

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P405849

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P405915

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P405925

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

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P405926

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P405871

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P405872

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P405874

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

Reference Method: EPA 8321B

Batch ID: P405850

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
2,4,5-T	0.0040	U	ug/L
Acetaminophen	0.0080	U	ug/L
Acetamiprid	0.0020	U	ug/L
Afidopyropen	0.0020	U	ug/L
Bentazon	8.0E-04	U	ug/L
Benzovindiflupyr	0.0020	U	ug/L
Carbamazepine	8.0E-04	U	ug/L
Clothianidin	0.0020	U	ug/L
Dinotefuran	0.0020	U	ug/L
Diuron	0.0020	U	ug/L
Fenuron	0.016	U	ug/L
Fluridone	8.0E-04	U	ug/L
Hydrocodone	0.0020	U	ug/L
Ibuprofen	0.020	U	ug/L
Imazapyr	0.0040	U	ug/L
Imidacloprid	0.0020	U	ug/L
Linuron	0.0040	U	ug/L
Mandestrobin	0.0020	U	ug/L
MCPP	0.0040	U	ug/L
Naproxen	0.0080	U	ug/L
Primidone	0.0040	U	ug/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B
Batch ID: P405850

Component	Result	Code	Units
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: P405862

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: P405890

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011
Batch ID: P405987

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

Reference Method: SM 2320 B-2011
Batch ID: P406172

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

Reference Method: SM 2540 C-2011
Batch ID: P406359

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-2011
Batch ID: P406360

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P406374

Component	Result	Code	Units
TSS	2	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 D-2011
Batch ID: P406375

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P406420

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P405988

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-2011
Batch ID: P405990

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P406058

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

Reference Method: SM 5310 B-2011
Batch ID: P406059

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: P405903

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

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P405903

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	104		P	85 - 115
Antimony	110		P	85 - 115
Arsenic	103		P	85 - 115
Beryllium	105		P	85 - 115
Boron	103		P	85 - 115
Cadmium	104		P	85 - 115
Chromium	104		P	85 - 115
Copper	98.9		P	85 - 115
Lead	98.1		P	85 - 115
Nickel	99.8		P	85 - 115
Selenium	106		P	85 - 115
Silver	101		P	85 - 115
Thallium	105		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P406039

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P406042

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P406110

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P406112

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	96.8		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P406063

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P406245

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: P406530

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	99.4		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P406056

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P406122

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P405849

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	97.5		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P405915

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P405925

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P405926

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P405871

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P405872

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P405874

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	95.9		P	90 - 110

Reference Method: EPA 8321B
Batch ID: P405850

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	102		P	40 - 150
2,4,5-T	92.0		P	40 - 150
Acetaminophen	93.3		P	30 - 150
Acetamiprid	104		P	40 - 150
Afidopyropen	75.4		P	40 - 150
Bentazon	98.1		P	30 - 150
Benzovindiflupyr	96.4		P	40 - 150
Carbamazepine	107		P	40 - 150
Clothianidin	115		P	40 - 150
Dinotefuran	104		P	40 - 150
Diuron	105		P	40 - 150
Fenuron	102		P	40 - 150
Fluridone	97.4		P	40 - 150
Hydrocodone	94.0		P	40 - 150
Ibuprofen	65.9		P	40 - 150
Imazapyr	95.0		P	40 - 150
Imidacloprid	105		P	40 - 150
Linuron	96.2		P	40 - 150
Mandestrobin	101		P	40 - 150
MCPP	116		P	40 - 150
Naproxen	90.1		P	40 - 150
Primidone	102		P	40 - 150
Pyraclostrobin	86.6		P	40 - 150
Thiamethoxam	112		P	40 - 150
Tolfenpyrad	54.2		P	30 - 150
Triclopyr	89.6		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P405862

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	89.0		P	40 - 150
AMPA	103		P	40 - 160
Endothall	72.2		P	40 - 150

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P405862

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Glufosinate	104		P	40 - 160
Glyphosate	109		P	40 - 160
Sucralose	89.7		P	40 - 150

Reference Method: SM 2120 B-2011
Batch ID: P405890

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	101		P	90 - 110

Reference Method: SM 2320 B-2011
Batch ID: P405987

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.1		P	94 - 106

Reference Method: SM 2320 B-2011
Batch ID: P406172

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	98.3		P	94 - 106

Reference Method: SM 4500 F-C-2011
Batch ID: P405988

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	100		P	93 - 104

Reference Method: SM 4500 F-C-2011
Batch ID: P405990

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	100		P	93 - 104

Reference Method: SM 5310 B-2011
Batch ID: P406058

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	99.4		P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P406059

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P405903

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2287116	Barium	104		P	80 - 120
2287116	Calcium	105		P	80 - 120
2287116	Iron	109		P	80 - 120
2287116	Magnesium	110		P	80 - 120
2287116	Manganese	108		P	80 - 120
2287116	Potassium	101		P	80 - 120
2287116	Sodium	102		P	80 - 120
2287116	Zinc	112		P	80 - 120
2287480	Barium	100	101	P/P	80 - 120
2287480	Calcium	107		P	80 - 120
2287480	Iron	105	102	P/P	80 - 120
2287480	Magnesium	103		P	80 - 120
2287480	Manganese	102	102	P/P	80 - 120
2287480	Potassium	102	99.7	P/P	80 - 120
2287480	Sodium	105		P	80 - 120
2287480	Zinc	103	104	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P405903

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2287116	Aluminum	104		P	80 - 120
2287116	Antimony	114		P	80 - 120
2287116	Arsenic	99.6		P	80 - 120
2287116	Beryllium	107		P	80 - 120
2287116	Boron	105		P	80 - 120
2287116	Cadmium	107		P	80 - 120
2287116	Chromium	109		P	80 - 120
2287116	Copper	95.0		P	80 - 120
2287116	Lead	98.0		P	80 - 120
2287116	Nickel	95.5		P	80 - 120
2287116	Selenium	98.7		P	80 - 120
2287116	Silver	101		P	80 - 120
2287116	Thallium	108		P	80 - 120
2287480	Aluminum	100	100	P/P	80 - 120
2287480	Antimony	111	111	P/P	80 - 120
2287480	Arsenic	102	101	P/P	80 - 120
2287480	Beryllium	103	105	P/P	80 - 120
2287480	Boron	99.4	99.2	P/P	80 - 120
2287480	Cadmium	105	104	P/P	80 - 120
2287480	Chromium	103	103	P/P	80 - 120
2287480	Copper	95.9	95.2	P/P	80 - 120
2287480	Lead	97.8	98.3	P/P	80 - 120
2287480	Nickel	96.3	95.7	P/P	80 - 120
2287480	Selenium	101	101	P/P	80 - 120
2287480	Silver	100	99.8	P/P	80 - 120
2287480	Thallium	107	108	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P406039

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: P406039

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2287089	Chloride	100		P	90 - 110
2287474	Chloride	101		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P406042

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2287089	Sulfate	103		P	90 - 110
2287474	Sulfate	102		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P406110

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2287475	Chloride	98.2		P	90 - 110
2287920	Chloride	97.1		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P406112

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2287475	Sulfate	97.4		P	90 - 110
2287920	Sulfate	98.6		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P406063

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2287093	Ammonia-N	102	100	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P406245

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2287090	Ammonia-N	98.0	99.0	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P406530

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2287181	Ammonia-N	98.6	99.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P406056

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2287102	Kjeldahl Nitrogen	95.6	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P406122

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P406122

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2286762	Kjeldahl Nitrogen	102	96.9	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P405849

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2287102	NO2NO3-N	95.8	96.2	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P405915

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2287093	NO2NO3-N	104	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P405925

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2286744	Total-P	97.6	94.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P405926

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2287044	Total-P	110	107	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P405871

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2287038	O-Phosphate-P	95.8	95.9	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P405872

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2287103	O-Phosphate-P	93.7	92.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P405874

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2287238	O-Phosphate-P	96.5	98.5	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P405850

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2287064	2,4-D	109	111	P/P	40 - 150
2287064	2,4,5-T	112	101	P/P	40 - 150
2287064	Acetaminophen	136	95.9	P/P	30 - 150
2287064	Acetamiprid	119	103	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P405850

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2287064	Afidopyropen	95.8	82.4	P/P	40 - 150
2287064	Bentazon	65.3	58.8	P/P	30 - 150
2287064	Benzovindiflupyr	89.8	85.7	P/P	40 - 150
2287064	Carbamazepine	114	111	P/P	40 - 150
2287064	Clothianidin	123	92.2	P/P	40 - 150
2287064	Dinotefuran	152	134	F/P	40 - 150
2287064	Diuron	79.8	88.3	P/P	40 - 150
2287064	Fenuron	90.7	85.0	P/P	40 - 150
2287064	Fluridone	89.4	82.1	P/P	40 - 150
2287064	Hydrocodone	110	99.3	P/P	40 - 150
2287064	Ibuprofen	87.7	71.3	P/P	40 - 150
2287064	Imazapyr	118	125	P/P	40 - 150
2287064	Imidacloprid	194	181	F/F	40 - 150
2287064	Linuron	80.4	76.7	P/P	40 - 150
2287064	Mandestrobin	97.8	84.5	P/P	40 - 150
2287064	MCCP	122	131	P/P	40 - 150
2287064	Naproxen	109	89.3	P/P	40 - 150
2287064	Primidone	110	114	P/P	40 - 150
2287064	Pyraclostrobin	81.3	81.4	P/P	40 - 150
2287064	Thiamethoxam	170	158	F/F	40 - 150
2287064	Tolfenpyrad	54.4	49.9	P/P	30 - 150
2287064	Triclopyr	107	108	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P405862

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2287064	Acesulfame K	123	133	P/P	40 - 150
2287064	AMPA	89.9	87.7	P/P	40 - 160
2287064	Endothall	84.6	81.3	P/P	40 - 150
2287064	Glufosinate	96.6	97.9	P/P	40 - 160
2287064	Glyphosate	99.6	101	P/P	40 - 160
2287064	Sucralose	89.0	87.5	P/P	40 - 150

Reference Method: SM 4500 F-C-2011
Batch ID: P405988

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2287474	Fluoride	99.5	100	P/P	92 - 107

Reference Method: SM 4500 F-C-2011
Batch ID: P405990

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2287201	Fluoride	98.9	99.8	P/P	92 - 107

Reference Method: SM 5310 B-2011
Batch ID: P406058

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2287036	Organic Carbon	96.2	96.3	P/P	85 - 115

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: SM 5310 B-2011
Batch ID: P406059

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2286762	Organic Carbon	92.2	93.8	P/P	85 - 115

Quality Assurance Report

Precision

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P405885

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2287034	Turbidity	0.120	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P405886

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2287101	Turbidity	0.0	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P405903

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2287480	Barium	0.227	Spike	P	0 - 20
2287480	Calcium	0.0248	Spike	P	0 - 20
2287480	Iron	2.88	Spike	P	0 - 20
2287480	Magnesium	2.27	Spike	P	0 - 20
2287480	Manganese	0.606	Spike	P	0 - 20
2287480	Potassium	1.57	Spike	P	0 - 20
2287480	Sodium	0.820	Spike	P	0 - 20
2287480	Zinc	0.956	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P405903

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2287480	Aluminum	0.0731	Spike	P	0 - 20
2287480	Antimony	0.371	Spike	P	0 - 20
2287480	Arsenic	0.751	Spike	P	0 - 20
2287480	Beryllium	1.43	Spike	P	0 - 20
2287480	Boron	0.174	Spike	P	0 - 20
2287480	Cadmium	1.25	Spike	P	0 - 20
2287480	Chromium	0.0890	Spike	P	0 - 20
2287480	Copper	0.763	Spike	P	0 - 20
2287480	Lead	0.504	Spike	P	0 - 20
2287480	Nickel	0.616	Spike	P	0 - 20
2287480	Selenium	0.569	Spike	P	0 - 20
2287480	Silver	0.473	Spike	P	0 - 20
2287480	Thallium	0.656	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P406039

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2287089	Chloride	1.37	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P406042

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2287089	Sulfate	1.98	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P406110

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2287475	Chloride	0.810	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P406112

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2287475	Sulfate	0.570	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P406063

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2287093	Ammonia-N	1.87	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P406245

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2287090	Ammonia-N	0.656	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P406530

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2287181	Ammonia-N	0.974	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P406056

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2287102	Kjeldahl Nitrogen	5.79	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P406122

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2286762	Kjeldahl Nitrogen	4.36	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P405849

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2287102	NO2NO3-N	0.442	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P405915

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2287093	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P405925

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2286744	Total-P	3.04	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P405926

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2287044	Total-P	2.63	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P405871

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2287038	O-Phosphate-P	0.0900	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P405872

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2287103	O-Phosphate-P	1.55	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P405874

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2287238	O-Phosphate-P	1.58	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P405850

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2287064	2,4-D	2.28	Spike	P	0 - 30
2287064	2,4,5-T	10.1	Spike	P	0 - 30

Quality Assurance Report

Precision

Reference Method: EPA 8321B

Batch ID: P405850

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2287064	Acetaminophen	28.5	Spike	P	0 - 30
2287064	Acetamiprid	14.8	Spike	P	0 - 30
2287064	Afidopyropen	15.1	Spike	P	0 - 30
2287064	Bentazon	10.4	Spike	P	0 - 30
2287064	Benzovindiflupyr	4.47	Spike	P	0 - 30
2287064	Carbamazepine	2.41	Spike	P	0 - 30
2287064	Clothianidin	28.7	Spike	P	0 - 30
2287064	Dinotefuran	12.3	Spike	P	0 - 30
2287064	Diuron	10.2	Spike	P	0 - 30
2287064	Fenuron	6.50	Spike	P	0 - 30
2287064	Fluridone	8.49	Spike	P	0 - 30
2287064	Hydrocodone	10.6	Spike	P	0 - 30
2287064	Ibuprofen	20.6	Spike	P	0 - 30
2287064	Imazapyr	4.12	Spike	P	0 - 30
2287064	Imidacloprid	6.28	Spike	P	0 - 30
2287064	Linuron	4.63	Spike	P	0 - 30
2287064	Mandestrobin	14.6	Spike	P	0 - 30
2287064	MCPP	7.27	Spike	P	0 - 30
2287064	Naproxen	20.2	Spike	P	0 - 30
2287064	Primidone	3.57	Spike	P	0 - 30
2287064	Pyraclostrobin	0.0843	Spike	P	0 - 30
2287064	Thiamethoxam	7.20	Spike	P	0 - 30
2287064	Tolfenpyrad	8.63	Spike	P	0 - 30
2287064	Triclopyr	0.852	Spike	P	0 - 30

Reference Method: EPA 8321B

Batch ID: P405862

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2287064	Acesulfame K	7.60	Spike	P	0 - 30
2287064	AMPA	2.52	Spike	P	0 - 30
2287064	Endothall	3.95	Spike	P	0 - 30
2287064	Glufosinate	1.32	Spike	P	0 - 30
2287064	Glyphosate	1.21	Spike	P	0 - 30
2287064	Sucralose	1.73	Spike	P	0 - 30

Reference Method: SM 2120 B-2011

Batch ID: P405890

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2287101	Color (true)	2.59	Sample	P	0 - 20

Reference Method: SM 2320 B-2011

Batch ID: P405987

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2287201	Total Alkalinity	0.383	Sample	P	0 - 5.2

Quality Assurance Report Precision

Reference Method: SM 2320 B-2011
 Batch ID: P406172

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2287474	Total Alkalinity	1.35	Sample	P	0 - 5.2

Reference Method: SM 2540 C-2011
 Batch ID: P406359

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2287891	TDS	8.08	Sample	P	0 - 10

Reference Method: SM 2540 C-2011
 Batch ID: P406360

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2287139	TDS	4.47	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
 Batch ID: P405988

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2287474	Fluoride	0.476	Spike	P	0 - 2.1

Reference Method: SM 4500 F-C-2011
 Batch ID: P405990

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2287201	Fluoride	0.476	Spike	P	0 - 2.1

Reference Method: SM 5310 B-2011
 Batch ID: P406058

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2287036	Organic Carbon	0.0659	Spike	P	0 - 20

Reference Method: SM 5310 B-2011
 Batch ID: P406059

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2286762	Organic Carbon	1.52	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2287114

Field Sample ID: G2TLHR0043

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	120	P	30 - 160
EPA 8321B	Acetaminophen-d4	131	P	30 - 160
EPA 8321B	Carbamazepine-d10	121	P	30 - 160
EPA 8321B	Diuron-d6	101	P	30 - 160
EPA 8321B	Endothall-d6	59.1	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	97.9	P	30 - 160
EPA 8321B	Ibuprofen-d3	69.7	P	30 - 160
EPA 8321B	Primidone-d5	111	P	30 - 160
EPA 8321B	Sucralose-d6	77.5	P	30 - 160

Lab Sample ID: 2287115

Field Sample ID: G3TLHR0040

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	98.2	P	30 - 160
EPA 8321B	Acetaminophen-d4	155	P	30 - 160
EPA 8321B	Carbamazepine-d10	99.4	P	30 - 160
EPA 8321B	Diuron-d6	105	P	30 - 160
EPA 8321B	Endothall-d6	68.9	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	90.8	P	30 - 160
EPA 8321B	Ibuprofen-d3	70.4	P	30 - 160
EPA 8321B	Primidone-d5	183	F	30 - 160
EPA 8321B	Sucralose-d6	77.9	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A106110

Included Lab Sample IDs: 2287101

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	100	101	P/P	90 - 110
Sulfate	98.7	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A108660

Included Lab Sample IDs: 2287090, 2287096, 2287099, 2287102

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	98.0	98.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A108663

Included Lab Sample IDs: 2287091, 2287094, 2287097, 2287100, 2287103

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.5	98.7	P/P	90 - 110
O-Phosphate-P	98.7	98.5	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A108665

Included Lab Sample IDs: 2287089, 2287092, 2287095, 2287098, 2287101

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

Reference Method: SM 2120 B-2011

Run ID: A108666

Included Lab Sample IDs: 2287089, 2287095, 2287098, 2287101

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	100	101	P/P	85 - 115

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A108679

Included Lab Sample IDs: 2287093

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	104	104	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A108702

Included Lab Sample IDs: 2287116

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	99.3	103	P/P	90 - 110
Calcium	107	104	P/P	90 - 110
Iron	104	102	P/P	90 - 110
Magnesium	107	104	P/P	90 - 110
Manganese	105	106	P/P	90 - 110
Potassium	100	97.9	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A108702

Included Lab Sample IDs: 2287116

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sodium	104	102	P/P	90 - 110
Zinc	107	106	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A108707

Included Lab Sample IDs: 2287092

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	102	97.8	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A108707

Included Lab Sample IDs: 2287089, 2287092, 2287095, 2287098, 2287101

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A108724

Included Lab Sample IDs: 2287099

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

Reference Method: EPA 8321B

Run ID: A108725

Included Lab Sample IDs: 2287114, 2287115

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	94.5	101	P/P	60 - 160
Glufosinate	101	99.7	P/P	60 - 160
Glyphosate	108	109	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A108728

Included Lab Sample IDs: 2287114, 2287115

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	100	94.6	P/P	60 - 160
Endothall	73.2	69.9	P/P	60 - 160
Sucralose	91.8	87.1	P/P	60 - 160

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A108733

Included Lab Sample IDs: 2287089, 2287095, 2287098

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	101	99.8	P/P	90 - 110
Sulfate	101	99.5	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 5310 B-2011

Run ID: A108741

Included Lab Sample IDs: 2287090, 2287093, 2287096, 2287099, 2287102

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.6	98.6	P/P	90 - 110
Organic Carbon	99.4	98.3	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A108743

Included Lab Sample IDs: 2287093

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	97.9	96.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A108758

Included Lab Sample IDs: 2287090, 2287093, 2287096, 2287102

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	97.8	99.0	P/P	90 - 110
Total-P	99.0	98.2	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A108761

Included Lab Sample IDs: 2287116

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	99.6	98.9	P/P	90 - 110
Antimony	104	105	P/P	90 - 110
Arsenic	96.0	95.9	P/P	90 - 110
Beryllium	99.9	101	P/P	90 - 110
Boron	100	100	P/P	90 - 110
Cadmium	102	103	P/P	90 - 110
Chromium	101	104	P/P	90 - 110
Copper	92.6	91.3	P/P	90 - 110
Lead	91.8	93.0	P/P	90 - 110
Nickel	92.5	90.1	P/P	90 - 110
Selenium	102	100	P/P	90 - 110
Silver	90.1	90.9	P/P	90 - 110
Thallium	97.7	98.3	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A108777

Included Lab Sample IDs: 2287114, 2287115

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	86.0	86.2	P/P	50 - 150
2,4,5-T	101	107	P/P	50 - 150
Acetaminophen	90.3	91.4	P/P	60 - 160
Acetamiprid	112	109	P/P	50 - 150
Afidopyropen	111	103	P/P	50 - 150
Bentazon	113	88.7	P/P	50 - 160
Benzovindiflupyr	116	110	P/P	50 - 150
Carbamazepine	114	120	P/P	60 - 150
Clothianidin	129	120	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A108777

Included Lab Sample IDs: 2287114, 2287115

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Dinotefuran	102	116	P/P	50 - 150
Diuron	119	115	P/P	60 - 160
Fenuron	110	108	P/P	60 - 150
Fluridone	109	107	P/P	60 - 160
Hydrocodone	112	103	P/P	60 - 150
Ibuprofen	71.8	75.4	P/P	50 - 160
Imazapyr	111	108	P/P	50 - 150
Imidacloprid	108	114	P/P	60 - 150
Linuron	114	116	P/P	60 - 150
Mandestrobin	103	105	P/P	50 - 150
MCPP	88.8	99.9	P/P	50 - 150
Naproxen	112	112	P/P	50 - 160
Primidone	113	108	P/P	60 - 150
Pyraclostrobin	114	106	P/P	60 - 150
Thiamethoxam	118	125	P/P	50 - 150
Tolfenpyrad	104	106	P/P	60 - 150
Triclopyr	105	109	P/P	50 - 150

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A108784

Included Lab Sample IDs: 2287090, 2287096, 2287099, 2287102

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	102	99.0	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A108794

Included Lab Sample IDs: 2287089, 2287095, 2287098, 2287101

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	95.6	99.9	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A108800

Included Lab Sample IDs: 2287093

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	104	108	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A108837

Included Lab Sample IDs: 2287090, 2287099, 2287102

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.4	98.4	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A108981

Included Lab Sample IDs: 2287096

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A108981

Included Lab Sample IDs: 2287096

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

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

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

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery			LCS	Precision SMP	MS
EPA 180.1 Rev. 2.0	Turbidity						0.120	
	Turbidity						0.0	
EPA 200.7 Rev. 4.4	Barium	102	104	100	101			0.227
	Calcium	105	105	107				0.0248
	Iron	105	109	105	102			2.88
	Magnesium	102	110	103				2.27
	Manganese	105	108	102	102			0.606
	Potassium	102	101	102	99.7			1.57
	Sodium	101	102	105				0.820
	Zinc	106	112	103	104			0.956
EPA 200.8 Rev. 5.4	Aluminum	104	100	100	104			0.0731
	Antimony	110	111	111	114			0.371
	Arsenic	103	102	101	99.6			0.751
	Beryllium	105	103	105	107			1.43
	Boron	103	99.4	99.2	105			0.174
	Cadmium	104	105	104	107			1.25
	Chromium	104	103	103	109			0.0890
	Copper	98.9	95.9	95.2	95.0			0.763
	Lead	98.1	97.8	98.3	98.0			0.504
	Nickel	99.8	96.3	95.7	95.5			0.616
	Selenium	106	101	101	98.7			0.569
	Silver	101	100	99.8	101			0.473
	Thallium	105	107	108	108			0.656
EPA 300.0 Rev. 2.1	Chloride	102	100	101			1.37	
	Chloride	98.1	98.2	97.1			0.810	
	Sulfate	103	103	102			1.98	
	Sulfate	96.8	97.4	98.6			0.570	
EPA 350.1 Rev. 2.0	Ammonia-N	98.4	102	100				1.87
	Ammonia-N	99.0	98.0	99.0				0.656
	Ammonia-N	99.4	98.6	99.8				0.974
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	103	95.6	102				5.79
	Kjeldahl Nitrogen	104	102	96.9				4.36
EPA 353.2 Rev. 2.0	NO2NO3-N	97.5	95.8	96.2				0.442
	NO2NO3-N	102	104	104				0.0
EPA 365.1 Rev. 2.0	Total-P	104	97.6	94.6				3.04
	Total-P	103	110	107				2.63
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	97.7	95.8	95.9				0.0900
	O-Phosphate-P	97.1	93.7	92.2				1.55
	O-Phosphate-P	95.9	96.5	98.5				1.58
EPA 8321B	2,4-D	102	111	109				2.28
	2,4,5-T	92.0	101	112				10.1
	Acesulfame K	89.0	123	133				7.60
	Acetaminophen	93.3	136	95.9				28.5
	Acetamiprid	104	119	103				14.8
	Afidopyropen	75.4	95.8	82.4				15.1
	AMPA	103	89.9	87.7				2.52
	Bentazon	98.1	58.8	65.3				10.4
	Benzovindiflupyr	96.4	89.8	85.7				4.47
	Carbamazepine	107	114	111				2.41
	Clothianidin	115	123	92.2				28.7
	Dinotefuran	104	152	134				12.3
	Diuron	105	79.8	88.3				10.2
	Endothall	72.2	84.6	81.3				3.95
	Fenuron	102	90.7	85.0				6.50

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	SMP
EPA 8321B	Fluridone	97.4	89.4	82.1		
	Glufosinate	104	96.6	97.9		
	Glyphosate	109	99.6	101		
	Hydrocodone	94.0	110	99.3		
	Ibuprofen	65.9	71.3	87.7		
	Imazapyr	95.0	125	118		
	Imidacloprid	105	194	181		
	Linuron	96.2	80.4	76.7		
	Mandestrobin	101	97.8	84.5		
	MCPP	116	131	122		
	Naproxen	90.1	89.3	109		
	Primidone	102	110	114		
	Pyraclostrobin	86.6	81.4	81.3		
	Sucralose	89.7	89.0	87.5		
	Thiamethoxam	112	170	158		
	Tolfenpyrad	54.2	49.9	54.4		
	Triclopyr	89.6	108	107		
SM 2120 B-2011	Color (true)	101				2.59
SM 2320 B-2011	Total Alkalinity	99.1				0.383
	Total Alkalinity	98.3				1.35
SM 2540 C-2011	TDS					8.08
	TDS					4.47
SM 4500 F-C-2011	Fluoride	100	99.5	100		0.476
	Fluoride	100	98.9	99.8		0.476
SM 5310 B-2011	Organic Carbon	99.4	96.2	96.3		0.0659
	Organic Carbon	101	92.2	93.8		1.52

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2287089, 2287092, 2287095, 2287098, 2287101
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2287116
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2287116
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2287089, 2287095, 2287098, 2287101
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2287089, 2287095, 2287098, 2287101
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2287090, 2287093, 2287096, 2287099, 2287102
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2287090, 2287093, 2287096, 2287099, 2287102
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2287090, 2287093, 2287096, 2287099, 2287102
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2287090, 2287093, 2287096, 2287099, 2287102
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2287091, 2287094, 2287097, 2287100, 2287103
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2287114, 2287115
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2287089, 2287095, 2287098, 2287101
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2287089, 2287092, 2287095, 2287098, 2287101
SM 2340B	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO3	2287116
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2287089, 2287095, 2287098, 2287101

Reference Method Descriptions

Method	Description	Associated Samples
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2287089, 2287092, 2287095, 2287098, 2287101
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2287089, 2287092, 2287095, 2287098, 2287101
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2287090, 2287093, 2287096, 2287099, 2287102

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	11/01/2021			11/02/2021 16:49	Khloe J Berg	2287089, 2287092, 2287095, 2287098, 2287101
EPA 200.7 Rev. 4.4	11/01/2021	11/03/2021 10:30	Emily M Philpot	11/03/2021 22:31	Josef B Mick	2287116
EPA 200.8 Rev. 5.4	11/01/2021	11/03/2021 10:30	Emily M Philpot	11/05/2021 21:56	Alexander Thompson	2287116
EPA 300.0 Rev. 2.1	11/01/2021			11/04/2021 04:16	Roberta Tatti	2287089
	11/01/2021			11/04/2021 06:17	Roberta Tatti	2287095
	11/01/2021			11/04/2021 06:29	Roberta Tatti	2287098
	11/01/2021			11/05/2021 17:04	Roberta Tatti	2287101
EPA 350.1 Rev. 2.0	11/01/2021			11/04/2021 11:44	Ping Hua	2287093
	11/01/2021			11/05/2021 12:09	Ping Hua	2287090
	11/01/2021			11/05/2021 12:16	Ping Hua	2287099
	11/01/2021			11/05/2021 12:17	Ping Hua	2287102
	11/01/2021			11/18/2021 12:21	Ping Hua	2287096
EPA 351.2 Rev. 2.0	11/01/2021	11/05/2021 12:13	Benjamin T. Nordmann	11/08/2021 13:40	Alexandra J Mattheus	2287090
	11/01/2021	11/05/2021 12:13	Benjamin T. Nordmann	11/08/2021 13:41	Alexandra J Mattheus	2287096
	11/01/2021	11/05/2021 12:13	Benjamin T. Nordmann	11/08/2021 13:43	Alexandra J Mattheus	2287099
	11/01/2021	11/05/2021 12:13	Benjamin T. Nordmann	11/08/2021 13:45	Alexandra J Mattheus	2287102
	11/01/2021	11/08/2021 13:15	Benjamin T. Nordmann	11/09/2021 11:07	Alexandra J Mattheus	2287093
EPA 353.2 Rev. 2.0	11/01/2021			11/02/2021 11:07	Beverly Y. Sanders	2287090
	11/01/2021			11/02/2021 11:15	Beverly Y. Sanders	2287096
	11/01/2021			11/02/2021 11:16	Beverly Y. Sanders	2287099
	11/01/2021			11/02/2021 11:17	Beverly Y. Sanders	2287102
	11/01/2021			11/03/2021 09:13	Beverly Y. Sanders	2287093
EPA 365.1 Rev. 2.0	11/01/2021	11/03/2021 16:35	Simonne.V. Calhoun	11/04/2021 15:08	Lipi Saha	2287099
	11/01/2021	11/03/2021 16:35	Simonne.V. Calhoun	11/05/2021 16:14	Sarah A Nixon	2287093
	11/01/2021	11/03/2021 16:35	Simonne.V. Calhoun	11/05/2021 16:20	Sarah A Nixon	2287090
	11/01/2021	11/03/2021 16:35	Simonne.V. Calhoun	11/05/2021 16:27	Sarah A Nixon	2287096
	11/01/2021	11/03/2021 16:35	Simonne.V. Calhoun	11/05/2021 16:28	Sarah A Nixon	2287102
EPA 365.1 Rev. 2.0 dissolved	11/01/2021			11/02/2021 15:02	James L Waggeberby	2287091
	11/01/2021			11/02/2021 15:03	James L Waggeberby	2287097
	11/01/2021			11/02/2021 15:04	James L Waggeberby	2287100
	11/01/2021			11/02/2021 15:07	James L Waggeberby	2287103
	11/01/2021			11/02/2021 15:31	James L Waggeberby	2287094
EPA 8321B	11/01/2021	11/03/2021 09:00	Hoor Shaik	11/05/2021 00:33	Juyoung Kim	2287114
	11/01/2021	11/03/2021 09:00	Hoor Shaik	11/05/2021 01:07	Juyoung Kim	2287115
	11/01/2021	11/03/2021 11:50	Juyoung Kim	11/03/2021 14:25	Juyoung Kim	2287114
	11/01/2021	11/03/2021 11:50	Juyoung Kim	11/03/2021 14:36	Juyoung Kim	2287115
	11/01/2021	11/03/2021 11:50	Juyoung Kim	11/04/2021 20:23	Manjita Shrestha	2287114
	11/01/2021	11/03/2021 11:50	Juyoung Kim	11/04/2021 20:38	Manjita Shrestha	2287115
SM 2120 B-2011	11/01/2021			11/02/2021 16:10	Sarah A Nixon	2287101

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 2120 B-2011	11/01/2021			11/02/2021 16:15	Sarah A Nixon	2287089, 2287095
	11/01/2021			11/02/2021 16:16	Sarah A Nixon	2287098
SM 2320 B-2011	11/01/2021			11/03/2021 23:26	Dale L. Simmons	2287092
	11/01/2021			11/06/2021 01:46	Dale L. Simmons	2287089
	11/01/2021			11/06/2021 01:54	Dale L. Simmons	2287095
	11/01/2021			11/06/2021 02:03	Dale L. Simmons	2287098
	11/01/2021			11/06/2021 02:10	Dale L. Simmons	2287101
SM 2340B	11/01/2021			11/03/2021 22:31	Josef B Mick	2287116
SM 2540 C-2011	11/01/2021			11/05/2021 15:08	Yijie Li	2287089, 2287095, 2287098, 2287101
SM 2540 D-2011	11/01/2021			11/05/2021 15:35	Yijie Li	2287089, 2287092, 2287095, 2287098, 2287101
SM 4500 F-C-2011	11/01/2021			11/03/2021 19:00	Dale L. Simmons	2287089
	11/01/2021			11/03/2021 19:12	Dale L. Simmons	2287095
	11/01/2021			11/03/2021 19:24	Dale L. Simmons	2287098
	11/01/2021			11/03/2021 19:33	Dale L. Simmons	2287101
	11/01/2021			11/03/2021 22:01	Dale L. Simmons	2287092
SM 5310 B-2011	11/01/2021			11/03/2021 21:22	Khloe J Berg	2287090
	11/01/2021			11/03/2021 21:32	Khloe J Berg	2287096
	11/01/2021			11/03/2021 21:43	Khloe J Berg	2287099
	11/01/2021			11/03/2021 22:00	Khloe J Berg	2287102
	11/01/2021			11/04/2021 06:41	Khloe J Berg	2287093