

Chemical Analysis Report

NE-DIST-2018-08-31-01

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

Event Description: **bmap tribs 2**
Request ID: **RQ-2018-08-27-19**
Customer: **NE-DIST**
Project ID: **SMP**

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Date Certified: 20-SEP-2018 17:05



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 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: Terrapin Creek at Faye Road

Collection Date/Time: 08/30/2018 08:45

Field ID: 20030653

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2021250	EPA 180.1 Rev. 2.0	Turbidity	6.7		NTU	P351098	
	EPA 300.0 Rev. 2.1	Chloride	14		mg Cl/L	P351228	
		Sulfate	25		mg SO4/L	P351230	
	SM 2120 B	Color (true)	88		PCU	P351035	
	SM 2320 B-97	Total Alkalinity	18		mg CaCO3/L	P351369	
	SM 2540 C-97	TDS	110		mg/L	P351407	
	SM 2540 D-97	TSS	7	I	mg/L	P351377	
	SM 4500 F-C-97	Fluoride	0.057	I	mg F/L	P351373	
2021252	EPA 350.1 Rev. 2.0	Ammonia-N	0.022		mg N/L	P351214	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.56		mg N/L	P351045	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.035		mg N/L	P351307	
	EPA 365.1 Rev. 2.0	Total-P	0.095		mg P/L	P351078	
	SM 5310 B-00	Organic Carbon	11		mg C/L	P351133	
2021254	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.036		mg P/L	P351039	
2021274	EPA 8321B	2,4-D	0.092		ug/L	P350923	
		Sucralose**	0.034	I	ug/L	P350994	
		Bentazon	8.0E-04	U	ug/L	P350923	MS
		MCP	0.0020	U	ug/L	P350923	
		Triclopyr**	0.0040	U	ug/L	P350923	
		Imidacloprid	0.0020	U	ug/L	P350923	
		Diuron	0.0020	U	ug/L	P350923	
		Pyraclostrobin**	0.0020	U	ug/L	P350923	
		Primidone**	0.0040	U	ug/L	P350923	
		Linuron	0.0040	U	ug/L	P350923	
		Acetaminophen**	0.0080	U	ug/L	P350923	
		Fenuron	0.016	U	ug/L	P350923	
		Imazapyr**	0.042		ug/L	P350923	
		Carbamazepine**	8.0E-04	U	ug/L	P350923	
		Fluridone**	0.034		ug/L	P350923	
		Hydrocodone**	8.0E-04	U	ug/L	P350923	
		Naproxen**	0.0080	U	ug/L	P350923	
		Ibuprofen**	0.020	U	ug/L	P350923	
		Acesulfame K**	0.10	U	ug/L	P350994	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Trout River at Old Kings Rd

Collection Date/Time: 08/30/2018 10:20

Field ID: 20030753

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2021251	EPA 180.1 Rev. 2.0	Turbidity	3.8		NTU	P351098	
	EPA 300.0 Rev. 2.1	Chloride	13		mg Cl/L	P351228	
		Sulfate	4.2		mg SO4/L	P351230	
	SM 2120 B	Color (true)	330		PCU	P351035	
	SM 2320 B-97	Total Alkalinity	25		mg CaCO3/L	P351369	
	SM 2540 C-97	TDS	127		mg/L	P351408	
	SM 2540 D-97	TSS	3	I	mg/L	P351378	
	SM 4500 F-C-97	Fluoride	0.056	I	mg F/L	P351373	
2021253	EPA 350.1 Rev. 2.0	Ammonia-N	0.015		mg N/L	P351214	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.0		mg N/L	P351045	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.094		mg N/L	P351307	
	EPA 365.1 Rev. 2.0	Total-P	0.17		mg P/L	P351078	
	SM 5310 B-00	Organic Carbon	27		mg C/L	P351133	
2021255	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.13		mg P/L	P351039	
2021275	EPA 8321B	2,4-D	0.0020	U	ug/L	P350923	
		Sucralose**	0.051		ug/L	P350994	
		Bentazon	8.0E-04	U	ug/L	P350923	MS
		MCP	0.0020	U	ug/L	P350923	
		Triclopyr**	0.0040	U	ug/L	P350923	
		Imidacloprid	0.0020	U	ug/L	P350923	
		Diuron	0.0033	I	ug/L	P350923	
		Pyraclostrobin**	0.0020	U	ug/L	P350923	
		Primidone**	0.0040	U	ug/L	P350923	
		Linuron	0.0040	U	ug/L	P350923	
		Acetaminophen**	0.0080	U	ug/L	P350923	
		Fenuron	0.18		ug/L	P350923	
		Imazapyr**	0.025		ug/L	P350923	
		Carbamazepine**	8.0E-04	U	ug/L	P350923	
		Fluridone**	9.3E-04	I	ug/L	P350923	
		Hydrocodone**	8.0E-04	U	ug/L	P350923	
		Naproxen**	0.0080	U	ug/L	P350923	
		Ibuprofen**	0.020	U	ug/L	P350923	
		Acesulfame K**	0.10	UJ	ug/L	P350994	SUR

Ref. Method and Comment:

EPA 8321B: "J" - estimation due to endothall-d6 surrogate spike recovery exceeding the control limits.

Sample Location: Moncrief CR @ 21st St.

Collection Date/Time: 08/30/2018 10:50

Field ID: 20030897

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2021241	EPA 180.1 Rev. 2.0	Turbidity	13	A	NTU	P351098	
	EPA 300.0 Rev. 2.1	Chloride	26		mg Cl/L	P351228	
		Sulfate	47		mg SO4/L	P351230	
	SM 2120 B	Color (true)	30		PCU	P351035	
	SM 2320 B-97	Total Alkalinity	170		mg CaCO3/L	P351369	
	SM 2540 C-97	TDS	312		mg/L	P351407	
	SM 2540 D-97	TSS	3	I	mg/L	P351377	
	SM 4500 F-C-97	Fluoride	0.19		mg F/L	P351373	
2021244	EPA 350.1 Rev. 2.0	Ammonia-N	0.11		mg N/L	P351213	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.49		mg N/L	P351045	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.19		mg N/L	P351307	
	EPA 365.1 Rev. 2.0	Total-P	0.059		mg P/L	P351078	
	SM 5310 B-00	Organic Carbon	5.5		mg C/L	P351133	
2021247	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.011		mg P/L	P351039	
2021271	EPA 8321B	2,4-D	0.0089		ug/L	P350923	
		Sucralose**	0.21		ug/L	P350994	
		Bentazon	0.0029	I	ug/L	P350923	MS
		MCPP	0.0026	I	ug/L	P350923	
		Triclopyr**	0.0040	U	ug/L	P350923	
		Imidacloprid	0.020		ug/L	P350923	
		Diuron	0.0020	U	ug/L	P350923	
		Pyraclostrobin**	0.0020	U	ug/L	P350923	
		Primidone**	0.0040	U	ug/L	P350923	
		Linuron	0.0040	U	ug/L	P350923	
		Acetaminophen**	0.059		ug/L	P350923	
		Fenuron	0.016	U	ug/L	P350923	
		Imazapyr**	0.15		ug/L	P350923	
		Carbamazepine**	8.0E-04	U	ug/L	P350923	
		Fluridone**	0.0020		ug/L	P350923	
		Hydrocodone**	8.0E-04	U	ug/L	P350923	
		Naproxen**	0.011	I	ug/L	P350923	
		Ibuprofen**	0.020	U	ug/L	P350923	
		Acesulfame K**	0.10	U	ug/L	P350994	
2021276	EPA 200.7 Rev. 4.4	Calcium	67.5		mg/L	P351064	
		Iron	1.51E+03		ug/L	P351064	
		Magnesium	9.21		mg/L	P351064	
		Potassium	2.6		mg/L	P351064	
		Sodium	19.0		mg/L	P351064	
	EPA 200.8 Rev. 5.4	Zinc	6.1	I	ug/L	P351064	
		Arsenic	1.48		ug/L	P351064	
		Cadmium	0.061	I	ug/L	P351064	
		Chromium	0.40	U	ug/L	P351064	
		Copper	0.39	I	ug/L	P351064	

Field ID: 20030897

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2021276	EPA 200.8 Rev. 5.4	Lead	0.19	I	ug/L	P351064	
		Nickel	0.77	I	ug/L	P351064	
		Silver	0.010	U	ug/L	P351064	

Ref. Method and Comment:
SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Goodbys CR Above West Branch at San Clerc. Collection Date/Time: 08/30/2018 11:45

Field ID: 20030891

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2021242	EPA 180.1 Rev. 2.0	Turbidity	8.2		NTU	P351098	
	EPA 300.0 Rev. 2.1	Chloride	17		mg Cl/L	P351228	
		Sulfate	15		mg SO4/L	P351230	
		Color (true)	78		PCU	P351035	
	SM 2120 B	Total Alkalinity	113	A	mg CaCO3/L	P351369	
	SM 2540 C-97	TDS	195		mg/L	P351407	
	SM 2540 D-97	TSS	2	I	mg/L	P351377	
	SM 4500 F-C-97	Fluoride	0.12		mg F/L	P351373	
2021245	EPA 350.1 Rev. 2.0	Ammonia-N	0.084		mg N/L	P351213	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.61		mg N/L	P351045	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.19		mg N/L	P351307	
	EPA 365.1 Rev. 2.0	Total-P	0.10		mg P/L	P351078	
	SM 5310 B-00	Organic Carbon	9.4		mg C/L	P351133	
2021248	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.052		mg P/L	P351039	
2021272	EPA 8321B	2,4-D	0.084		ug/L	P350923	
		Sucralose**	0.066		ug/L	P350994	
		Bentazon	0.011		ug/L	P350923	MS
		MCP	0.0063	I	ug/L	P350923	
		Triclopyr**	0.0040	U	ug/L	P350923	
		Imidacloprid	0.13		ug/L	P350923	
		Diuron	0.053		ug/L	P350923	
		Pyraclostrobin**	0.0020	U	ug/L	P350923	
		Primidone**	0.0040	U	ug/L	P350923	
		Linuron	0.0040	U	ug/L	P350923	
		Acetaminophen**	0.0080	U	ug/L	P350923	
		Fenuron	0.016	U	ug/L	P350923	
		Imazapyr**	0.67		ug/L	P350923	
		Carbamazepine**	8.0E-04	U	ug/L	P350923	
		Fluridone**	0.020		ug/L	P350923	
		Hydrocodone**	8.0E-04	U	ug/L	P350923	
		Naproxen**	0.0080	U	ug/L	P350923	
		Ibuprofen**	0.020	U	ug/L	P350923	
		Acesulfame K**	0.10	U	ug/L	P350994	
2021277	EPA 200.7 Rev. 4.4	Calcium	45.0		mg/L	P351064	
		Iron	1.67E+03		ug/L	P351064	
		Magnesium	5.05		mg/L	P351064	
		Potassium	2.0		mg/L	P351064	
		Sodium	11.4		mg/L	P351064	
		Zinc	5.0	U	ug/L	P351064	
	EPA 200.8 Rev. 5.4	Arsenic	4.75		ug/L	P351064	
		Cadmium	0.020	U	ug/L	P351064	
		Chromium	0.43	I	ug/L	P351064	
		Copper	1.22		ug/L	P351064	

Field ID: 20030891

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2021277	EPA 200.8 Rev. 5.4	Lead	0.30		ug/L	P351064	
		Nickel	0.38	I	ug/L	P351064	
		Silver	0.010	U	ug/L	P351064	

Ref. Method and Comment:
SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Goodbys CR @ Plaza Gate Rd.

Collection Date/Time: 08/30/2018 11:25

Field ID: 20030537

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2021243	EPA 180.1 Rev. 2.0	Turbidity	8.2		NTU	P351098	
	EPA 300.0 Rev. 2.1	Chloride	15		mg Cl/L	P351228	
		Sulfate	9.3		mg SO4/L	P351230	
	SM 2120 B	Color (true)	68	A	PCU	P351035	
	SM 2320 B-97	Total Alkalinity	107		mg CaCO3/L	P351369	
	SM 2540 C-97	TDS	170	A	mg/L	P351407	
	SM 2540 D-97	TSS	4	IA	mg/L	P351377	
	SM 4500 F-C-97	Fluoride	0.12		mg F/L	P351373	
2021246	EPA 350.1 Rev. 2.0	Ammonia-N	0.13		mg N/L	P351214	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.54		mg N/L	P351045	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.046		mg N/L	P351307	
	EPA 365.1 Rev. 2.0	Total-P	0.091		mg P/L	P351078	
	SM 5310 B-00	Organic Carbon	8.1		mg C/L	P351133	
2021249	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.038		mg P/L	P351039	
2021273	EPA 8321B	2,4-D	0.032		ug/L	P350923	
		Sucralose**	0.074		ug/L	P350994	
		Bentazon	0.016		ug/L	P350923	MS
		MCP	0.0026	I	ug/L	P350923	
		Triclopyr**	0.0040	U	ug/L	P350923	
		Imidacloprid	0.19		ug/L	P350923	
		Diuron	0.027		ug/L	P350923	
		Pyraclostrobin**	0.0020	U	ug/L	P350923	
		Primidone**	0.0040	U	ug/L	P350923	
		Linuron	0.0040	U	ug/L	P350923	
		Acetaminophen**	0.0080	U	ug/L	P350923	
		Fenuron	0.016	U	ug/L	P350923	
		Imazapyr**	0.34		ug/L	P350923	
		Carbamazepine**	8.0E-04	U	ug/L	P350923	
		Fluridone**	0.030		ug/L	P350923	
		Hydrocodone**	8.0E-04	U	ug/L	P350923	
		Naproxen**	0.0080	U	ug/L	P350923	
		Ibuprofen**	0.020	U	ug/L	P350923	
		Acesulfame K**	0.10	U	ug/L	P350994	
2021278	EPA 200.7 Rev. 4.4	Calcium	40.8		mg/L	P351064	
		Iron	1.85E+03		ug/L	P351064	
		Magnesium	3.70		mg/L	P351064	
		Potassium	1.2	I	mg/L	P351064	
		Sodium	11.0		mg/L	P351064	
	EPA 200.8 Rev. 5.4	Zinc	5.0	U	ug/L	P351064	
		Arsenic	3.55		ug/L	P351064	
		Cadmium	0.020	U	ug/L	P351064	
		Chromium	0.40	U	ug/L	P351064	
		Copper	1.48		ug/L	P351064	

Field ID: 20030537

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2021278	EPA 200.8 Rev. 5.4	Lead	0.17	I	ug/L	P351064	
		Nickel	0.33	I	ug/L	P351064	
		Silver	0.010	U	ug/L	P351064	

Ref. Method and Comment:
SM 2540 D-97: 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: P351098

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P351064

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

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P351064

Component	Result	Code	Units
Arsenic	0.050	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.40	U	ug/L
Copper	0.20	U	ug/L
Lead	0.050	U	ug/L
Nickel	0.20	U	ug/L
Silver	0.010	U	ug/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P351228

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P351230

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P351213

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P351214

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P351045

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P351307

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P351078

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P351039

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

Reference Method: EPA 8321B
Batch ID: P350923

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
Acetaminophen	0.0080	U	ug/L
Bentazon	8.0E-04	U	ug/L
Carbamazepine	8.0E-04	U	ug/L
Diuron	0.0020	U	ug/L
Fenuron	0.017	I	ug/L
Fluridone	4.0E-04	U	ug/L
Hydrocodone	8.0E-04	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
MCPP	0.0020	U	ug/L
Naproxen	0.0080	U	ug/L
Primidone	0.0040	U	ug/L
Pyraclostrobin	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: EPA 8321B
Batch ID: P350994

Component	Result	Code	Units
Acesulfame K	0.10	U	ug/L
Sucralose	0.010	U	ug/L

Quality Assurance Report Method Blank Results

Reference Method: SM 2120 B
Batch ID: P351035

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P351369

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

Reference Method: SM 2540 C-97
Batch ID: P351407

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P351408

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P351377

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P351378

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P351373

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P351133

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: P351064

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	104		P	85 - 115
Iron	107		P	85 - 115
Magnesium	106		P	85 - 115
Potassium	104		P	85 - 115
Sodium	100		P	85 - 115
Zinc	103		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P351064

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Arsenic	103		P	85 - 115
Cadmium	99.8		P	85 - 115
Chromium	99.0		P	85 - 115
Copper	100		P	85 - 115
Lead	104		P	85 - 115
Nickel	100		P	85 - 115
Silver	103		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P351228

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	109		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P351230

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P351213

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	93.8		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P351214

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P351045

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P351307

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P351078

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P351039

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	96.9		P	90 - 110

Reference Method: EPA 8321B
Batch ID: P350923

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	67.7		P	40 - 150
Acetaminophen	113		P	30 - 150
Bentazon	59.1		P	30 - 150
Carbamazepine	70.4		P	40 - 150
Diuron	65.8		P	40 - 150
Fenuron	93.5		P	40 - 150
Fluridone	86.7		P	40 - 150
Hydrocodone	110		P	40 - 150
Ibuprofen	72.9		P	40 - 150
Imazapyr	91.0		P	40 - 150
Imidacloprid	105		P	40 - 160
Linuron	60.5		P	40 - 150
MCPP	73.5		P	40 - 150
Naproxen	94.1		P	40 - 150
Primidone	105		P	40 - 150
Pyraclostrobin	72.9		P	40 - 150
Triclopyr	49.2		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P350994

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	93.9		P	40 - 150
Sucralose	81.3		P	40 - 150

Reference Method: SM 2120 B
Batch ID: P351035

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	97.4		P	85 - 115

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-97
Batch ID: P351369

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	98 - 107

Reference Method: SM 4500 F-C-97
Batch ID: P351373

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	101		P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P351133

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P351064

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2021180	Calcium	102		P	80 - 120
2021180	Iron	108		P	80 - 120
2021180	Magnesium	110		P	80 - 120
2021180	Potassium	104		P	80 - 120
2021180	Sodium	99.4		P	80 - 120
2021180	Zinc	105		P	80 - 120
2021276	Calcium	108		P	80 - 120
2021276	Iron	112	108	P/P	80 - 120
2021276	Magnesium	107		P	80 - 120
2021276	Potassium	107	102	P/P	80 - 120
2021276	Sodium	102		P	80 - 120
2021276	Zinc	103	102	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P351064

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2021180	Arsenic	101		P	80 - 120
2021180	Cadmium	103		P	80 - 120
2021180	Chromium	98.9		P	80 - 120
2021180	Copper	95.4		P	80 - 120
2021180	Lead	104		P	80 - 120
2021180	Nickel	97.7		P	80 - 120
2021180	Silver	103		P	80 - 120
2021276	Arsenic	103	101	P/P	80 - 120
2021276	Cadmium	103	103	P/P	80 - 120
2021276	Chromium	99.5	97.6	P/P	80 - 120
2021276	Copper	94.7	92.2	P/P	80 - 120
2021276	Lead	100	99.2	P/P	80 - 120
2021276	Nickel	96.5	94.1	P/P	80 - 120
2021276	Silver	101	102	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P351228

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2021064	Chloride	102		P	90 - 110
2021250	Chloride	108		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P351230

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2021064	Sulfate	101		P	90 - 110
2021250	Sulfate	108		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P351213

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2021066	Ammonia-N	103	104	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P351214

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2021252	Ammonia-N	94.8	95.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P351045

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2021177	Kjeldahl Nitrogen	98.9	100	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P351307

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2021080	NO2NO3-N	99.4	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P351078

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2021245	Total-P	95.5	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P351039

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2021247	O-Phosphate-P	97.0	96.9	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P350923

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2020945	2,4-D	99.8	107	P/P	40 - 150
2020945	Acetaminophen	127	126	P/P	30 - 150
2020945	Bentazon	20.8	18.4	F/F	30 - 150
2020945	Carbamazepine	56.4	48.5	P/P	40 - 150
2020945	Diuron	46.5	45.9	P/P	40 - 150
2020945	Fenuron	44.4	40.2	P/P	40 - 150
2020945	Fluridone	60.6	59.1	P/P	40 - 150
2020945	Hydrocodone	95.7	89.5	P/P	40 - 150
2020945	Ibuprofen	77.2	84.0	P/P	40 - 150
2020945	Imazapyr	88.1	81.6	P/P	40 - 150
2020945	Imidacloprid	96.2	84.6	P/P	40 - 160
2020945	Linuron	55.3	53.4	P/P	40 - 150
2020945	MCP	109	114	P/P	40 - 150
2020945	Naproxen	119	107	P/P	40 - 150
2020945	Primidone	62.1	61.0	P/P	40 - 150
2020945	Pyraclostrobin	79.4	73.4	P/P	40 - 150
2020945	Triclopyr	118	124	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P350994

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

Reference Method: EPA 8321B
Batch ID: P350994

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2021271	Acesulfame K	64.1	63.3	P/P	40 - 150
2021271	Sucralose	68.7	78.8	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P351373

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2021242	Fluoride	100	99.1	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P351133

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2021186	Organic Carbon	94.8	92.1	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P351098

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2021241	Turbidity	2.25	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P351064

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2021276	Calcium	1.79	Spike	P	0 - 20
2021276	Iron	3.11	Spike	P	0 - 20
2021276	Magnesium	3.58	Spike	P	0 - 20
2021276	Potassium	2.96	Spike	P	0 - 20
2021276	Sodium	2.17	Spike	P	0 - 20
2021276	Zinc	0.545	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P351064

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2021276	Arsenic	1.88	Spike	P	0 - 20
2021276	Cadmium	0.697	Spike	P	0 - 20
2021276	Chromium	1.96	Spike	P	0 - 20
2021276	Copper	2.64	Spike	P	0 - 20
2021276	Lead	1.20	Spike	P	0 - 20
2021276	Nickel	2.46	Spike	P	0 - 20
2021276	Silver	0.208	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P351228

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2021064	Chloride	1.72	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P351230

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2021064	Sulfate	1.64	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P351213

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2021066	Ammonia-N	0.484	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P351214

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2021252	Ammonia-N	0.761	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P351045

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2021177	Kjeldahl Nitrogen	1.20	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P351307

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2021080	NO2NO3-N	2.36	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P351078

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2021245	Total-P	5.34	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P351039

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2021247	O-Phosphate-P	0.0930	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P350923

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2020945	2,4-D	6.51	Spike	P	0 - 30
2020945	Acetaminophen	0.965	Spike	P	0 - 30
2020945	Bentazon	12.5	Spike	P	0 - 30
2020945	Carbamazepine	15.0	Spike	P	0 - 30
2020945	Diuron	1.47	Spike	P	0 - 30
2020945	Fenuron	9.95	Spike	P	0 - 30
2020945	Fluridone	2.48	Spike	P	0 - 30
2020945	Hydrocodone	6.75	Spike	P	0 - 30
2020945	Ibuprofen	8.41	Spike	P	0 - 30
2020945	Imazapyr	6.95	Spike	P	0 - 30
2020945	Imidacloprid	12.8	Spike	P	0 - 30
2020945	Linuron	3.57	Spike	P	0 - 30
2020945	MCP	3.79	Spike	P	0 - 30
2020945	Naproxen	10.8	Spike	P	0 - 30
2020945	Primidone	1.79	Spike	P	0 - 30
2020945	Pyraclostrobin	7.90	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P350923

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2020945	Triclopyr	4.43	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P350994

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2021271	Acesulfame K	1.25	Spike	P	0 - 30
2021271	Sucralose	12.2	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P351035

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2021243	Color (true)	2.90	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P351369

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2021242	Total Alkalinity	0.607	Sample	P	0 - 1.6

Reference Method: SM 2540 C-97
Batch ID: P351407

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2021243	TDS	5.31	Sample	P	0 - 10

Reference Method: SM 2540 C-97
Batch ID: P351408

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2021284	TDS	2.67	Sample	P	0 - 10

Reference Method: SM 2540 D-97
Batch ID: P351378

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2021284	TSS	5.26	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P351373

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2021242	Fluoride	0.979	Spike	P	0 - 3.5

Quality Assurance Report Precision

Reference Method: SM 5310 B-00
Batch ID: P351133

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2021186	Organic Carbon	1.69	Spike	P	0 - 20

* Sample, spike and/or laboratory control sample precision (LCS) is reported.
Replicate spike precision may be reported when sample results are below quantifiable levels.

Quality Assurance Report Surrogates

Lab Sample ID: 2021271
Field Sample ID: 20030897

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	99.4	P	30 - 160
EPA 8321B	Acetaminophen-d4	153	P	30 - 160
EPA 8321B	Carbamazepine-d10	50.9	P	30 - 160
EPA 8321B	Diuron-d6	53.6	P	30 - 160
EPA 8321B	Endothall-d6	117	P	40 - 160
EPA 8321B	Endothall-d6	117	P	40 - 160
EPA 8321B	Ibuprofen-d3	71.3	P	30 - 160
EPA 8321B	Primidone-d5	85.8	P	30 - 160
EPA 8321B	Sucralose-d6	102	P	40 - 160
EPA 8321B	Sucralose-d6	102	P	40 - 160

Lab Sample ID: 2021272
Field Sample ID: 20030891

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	111	P	30 - 160
EPA 8321B	Acetaminophen-d4	132	P	30 - 160
EPA 8321B	Carbamazepine-d10	50.9	P	30 - 160
EPA 8321B	Diuron-d6	44.1	P	30 - 160
EPA 8321B	Endothall-d6	126	P	40 - 160
EPA 8321B	Endothall-d6	126	P	40 - 160
EPA 8321B	Ibuprofen-d3	68.2	P	30 - 160
EPA 8321B	Primidone-d5	76.2	P	30 - 160
EPA 8321B	Sucralose-d6	114	P	40 - 160
EPA 8321B	Sucralose-d6	114	P	40 - 160

Lab Sample ID: 2021273
Field Sample ID: 20030537

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	93.6	P	30 - 160
EPA 8321B	Acetaminophen-d4	138	P	30 - 160
EPA 8321B	Carbamazepine-d10	55.8	P	30 - 160
EPA 8321B	Diuron-d6	50.6	P	30 - 160
EPA 8321B	Endothall-d6	134	P	40 - 160
EPA 8321B	Endothall-d6	134	P	40 - 160
EPA 8321B	Ibuprofen-d3	65.4	P	30 - 160
EPA 8321B	Primidone-d5	81.5	P	30 - 160
EPA 8321B	Sucralose-d6	121	P	40 - 160
EPA 8321B	Sucralose-d6	121	P	40 - 160

Lab Sample ID: 2021274
Field Sample ID: 20030653

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	110	P	30 - 160
EPA 8321B	Acetaminophen-d4	127	P	30 - 160
EPA 8321B	Carbamazepine-d10	53.7	P	30 - 160
EPA 8321B	Diuron-d6	50.0	P	30 - 160
EPA 8321B	Endothall-d6	129	P	40 - 160
EPA 8321B	Endothall-d6	129	P	40 - 160
EPA 8321B	Ibuprofen-d3	81.4	P	30 - 160

Quality Assurance Report Surrogates

Lab Sample ID: 2021274
Field Sample ID: 20030653

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Primidone-d5	63.3	P	30 - 160
EPA 8321B	Sucralose-d6	115	P	40 - 160
EPA 8321B	Sucralose-d6	115	P	40 - 160

Lab Sample ID: 2021275
Field Sample ID: 20030753

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	94.3	P	30 - 160
EPA 8321B	Acetaminophen-d4	137	P	30 - 160
EPA 8321B	Carbamazepine-d10	57.4	P	30 - 160
EPA 8321B	Diuron-d6	51.4	P	30 - 160
EPA 8321B	Endothall-d6	169	F	40 - 160
EPA 8321B	Endothall-d6	169	F	40 - 160
EPA 8321B	Ibuprofen-d3	68.6	P	30 - 160
EPA 8321B	Primidone-d5	61.8	P	30 - 160
EPA 8321B	Sucralose-d6	126	P	40 - 160
EPA 8321B	Sucralose-d6	126	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: SM 2120 B

Run ID: A86248

Included Lab Sample IDs: 2021241, 2021242, 2021243, 2021250, 2021251

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	100	102	P/P	90 - 115
Color (true)	98.8	99.6	P/P	90 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A86249

Included Lab Sample IDs: 2021247, 2021248, 2021249, 2021254, 2021255

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.5	99.4	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A86253

Included Lab Sample IDs: 2021271, 2021272, 2021273, 2021274, 2021275

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	68.2	72.4	P/P	50 - 150
Acetaminophen	111	105	P/P	60 - 160
Bentazon	62.4	60.3	P/P	50 - 160
Carbamazepine	71.8	70.2	P/P	60 - 160
Diuron	63.2	72.6	P/P	60 - 150
Fenuron	97.0	90.1	P/P	60 - 150
Fluridone	72.9	72.6	P/P	60 - 160
Hydrocodone	99.0	108	P/P	60 - 150
Ibuprofen	138	113	P/P	50 - 160
Imazapyr	78.5	90.0	P/P	50 - 150
Imidacloprid	75.4	79.2	P/P	60 - 150
Linuron	83.9	74.0	P/P	60 - 150
MCPP	72.5	71.3	P/P	50 - 150
Naproxen	75.0	74.1	P/P	50 - 160
Primidone	92.9	88.9	P/P	60 - 150
Pyraclostrobin	93.3	97.3	P/P	60 - 150
Triclopyr	84.3	65.7	P/P	50 - 160

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A86283

Included Lab Sample IDs: 2021241, 2021242, 2021243, 2021250, 2021251

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	104	102	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A86284

Included Lab Sample IDs: 2021244, 2021245, 2021246, 2021252, 2021253

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	100	102	P/P	90 - 110
Total-P	103	100	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A86290

Included Lab Sample IDs: 2021244, 2021245, 2021246, 2021252, 2021253

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	103	102	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A86299

Included Lab Sample IDs: 2021244, 2021245, 2021246, 2021252, 2021253

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.0	94.6	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A86302

Included Lab Sample IDs: 2021271, 2021272, 2021273, 2021274, 2021275

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	102	94.9	P/P	60 - 160
Acesulfame K	96.5	102	P/P	60 - 160

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A86312

Included Lab Sample IDs: 2021241, 2021242, 2021243, 2021250, 2021251

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	103	108	P/P	90 - 110
Chloride	105	103	P/P	90 - 110
Sulfate	100	105	P/P	90 - 110
Sulfate	103	100	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A86318

Included Lab Sample IDs: 2021276, 2021277, 2021278

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	100	98.7	P/P	90 - 110
Calcium	99.4	100	P/P	90 - 110
Iron	101	99.6	P/P	90 - 110
Iron	101	101	P/P	90 - 110
Magnesium	100	99.7	P/P	90 - 110
Magnesium	99.7	98.9	P/P	90 - 110
Potassium	96.9	94.8	P/P	90 - 110
Potassium	97.9	96.9	P/P	90 - 110
Sodium	96.7	94.1	P/P	90 - 110
Sodium	97.3	96.7	P/P	90 - 110
Zinc	97.9	99.3	P/P	90 - 110
Zinc	99.3	99.7	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A86328

Included Lab Sample IDs: 2021244, 2021245, 2021246, 2021252, 2021253

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A86328

Included Lab Sample IDs: 2021244, 2021245, 2021246, 2021252, 2021253

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

Reference Method: EPA 8321B

Run ID: A86330

Included Lab Sample IDs: 2021271, 2021272, 2021273, 2021274, 2021275

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	84.2	89.2	P/P	60 - 160
Sucralose	86.2	84.2	P/P	60 - 160

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A86354

Included Lab Sample IDs: 2021244, 2021245, 2021246, 2021252, 2021253

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

Reference Method: SM 2320 B-97

Run ID: A86387

Included Lab Sample IDs: 2021241, 2021242, 2021243, 2021250, 2021251

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	100	103	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A86387

Included Lab Sample IDs: 2021241, 2021242, 2021243, 2021250, 2021251

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: A86465

Included Lab Sample IDs: 2021276, 2021277, 2021278

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	92.4	91.6	P/P	90 - 110
Cadmium	92.5	92.2	P/P	90 - 110
Chromium	91.4	91.8	P/P	90 - 110
Copper	91.9	92.5	P/P	90 - 110
Lead	104	104	P/P	90 - 110
Nickel	91.6	92.4	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A86535

Included Lab Sample IDs: 2021276, 2021277, 2021278

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Silver	96.6	96.8	P/P	90 - 110

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						2.25	
EPA 200.7 Rev. 4.4	Calcium	104	102	108				1.79
	Iron	107	108	112	108			3.11
	Magnesium	106	110	107				3.58
	Potassium	104	104	107	102			2.96
	Sodium	100	99.4	102				2.17
	Zinc	103	105	103	102			0.545
EPA 200.8 Rev. 5.4	Arsenic	103	101	103	101			1.88
	Cadmium	99.8	103	103	103			0.697
	Chromium	99.0	98.9	99.5	97.6			1.96
	Copper	100	95.4	94.7	92.2			2.64
	Lead	104	104	100	99.2			1.20
	Nickel	100	97.7	96.5	94.1			2.46
	Silver	103	103	101	102			0.208
EPA 300.0 Rev. 2.1	Chloride	109	102	108			1.72	
	Sulfate	106	101	108			1.64	
EPA 350.1 Rev. 2.0	Ammonia-N	93.8	103	104				0.484
	Ammonia-N	99.9	94.8	95.8				0.761
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	103	98.9	100				1.20
EPA 353.2 Rev. 2.0	NO2NO3-N	98.5	99.4	102				2.36
EPA 365.1 Rev. 2.0	Total-P	97.8	95.5	102				5.34
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	96.9	97.0	96.9				0.0930
EPA 8321B	2,4-D	67.7	99.8	107				6.51
	Acesulfame K	93.9	64.1	63.3				1.25
	Acetaminophen	113	127	126				0.965
	Bentazon	59.1	20.8	18.4				12.5
	Carbamazepine	70.4	56.4	48.5				15.0
	Diuron	65.8	46.5	45.9				1.47
	Fenuron	93.5	44.4	40.2				9.95
	Fluridone	86.7	60.6	59.1				2.48
	Hydrocodone	110	95.7	89.5				6.75
	Ibuprofen	72.9	84.0	77.2				8.41
	Imazapyr	91.0	88.1	81.6				6.95
	Imidacloprid	105	96.2	84.6				12.8
	Linuron	60.5	55.3	53.4				3.57
	MCP	73.5	114	109				3.79
	Naproxen	94.1	119	107				10.8
	Primidone	105	62.1	61.0				1.79
	Pyraclostrobin	72.9	79.4	73.4				7.90
	Sucralose	81.3	68.7	78.8				12.2
	Triclopyr	49.2	118	124				4.43
SM 2120 B	Color (true)	97.4					2.90	
SM 2320 B-97	Total Alkalinity	103					0.607	
SM 2540 C-97	TDS						5.31	
	TDS						2.67	
SM 2540 D-97	TSS						5.26	
SM 4500 F-C-97	Fluoride	101	100	99.1				0.979
SM 5310 B-00	Organic Carbon	95.6	94.8	92.1				1.69

Reference Method Descriptions

Method / DoH Cert #

Description

Associated Samples

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2021241, 2021242, 2021243, 2021250, 2021251
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2021276, 2021277, 2021278
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2021276, 2021277, 2021278
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2021241, 2021242, 2021243, 2021250, 2021251
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2021241, 2021242, 2021243, 2021250, 2021251
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2021244, 2021245, 2021246, 2021252, 2021253
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2021244, 2021245, 2021246, 2021252, 2021253
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2021244, 2021245, 2021246, 2021252, 2021253
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2021244, 2021245, 2021246, 2021252, 2021253
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2021247, 2021248, 2021249, 2021254, 2021255
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2021271, 2021272, 2021273, 2021274, 2021275
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2021271, 2021272, 2021273, 2021274, 2021275
SM 2120 B / E31780	True Color measured at 450 nm	2021241, 2021242, 2021243, 2021250, 2021251
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2021241, 2021242, 2021243, 2021250, 2021251
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2021241, 2021242, 2021243, 2021250, 2021251
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2021241, 2021242, 2021243, 2021250, 2021251
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2021241, 2021242, 2021243, 2021250, 2021251
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2021244, 2021245, 2021246, 2021252, 2021253

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	08/31/2018			08/31/2018 14:53	Megan Treadwell	2021241, 2021242, 2021243, 2021250, 2021251
EPA 200.7 Rev. 4.4	08/31/2018	09/04/2018 13:35	Elliott D. Healy	09/06/2018 12:38	Betina Topolski	2021276
	08/31/2018	09/04/2018 13:35	Elliott D. Healy	09/06/2018 13:26	Betina Topolski	2021277
	08/31/2018	09/04/2018 13:35	Elliott D. Healy	09/06/2018 13:33	Betina Topolski	2021278
EPA 200.8 Rev. 5.4	08/31/2018	09/04/2018 13:35	Elliott D. Healy	09/12/2018 19:08	Robert K Palmer	2021276
	08/31/2018	09/04/2018 13:35	Elliott D. Healy	09/12/2018 19:37	Robert K Palmer	2021277
	08/31/2018	09/04/2018 13:35	Elliott D. Healy	09/12/2018 19:47	Robert K Palmer	2021278
	08/31/2018	09/04/2018 13:35	Elliott D. Healy	09/14/2018 23:14	Robert K Palmer	2021276
	08/31/2018	09/04/2018 13:35	Elliott D. Healy	09/14/2018 23:33	Robert K Palmer	2021277
	08/31/2018	09/04/2018 13:35	Elliott D. Healy	09/14/2018 23:40	Robert K Palmer	2021278
EPA 300.0 Rev. 2.1	08/31/2018			09/06/2018 20:50	Lipi Saha	2021250
	08/31/2018			09/06/2018 23:02	Lipi Saha	2021241
	08/31/2018			09/06/2018 23:14	Lipi Saha	2021242
	08/31/2018			09/06/2018 23:26	Lipi Saha	2021243
	08/31/2018			09/06/2018 23:38	Lipi Saha	2021251
EPA 350.1 Rev. 2.0	08/31/2018			09/05/2018 13:29	Ping Hua	2021244
	08/31/2018			09/05/2018 13:31	Ping Hua	2021245
	08/31/2018			09/05/2018 13:43	Ping Hua	2021252
	08/31/2018			09/05/2018 13:47	Ping Hua	2021246
	08/31/2018			09/05/2018 13:49	Ping Hua	2021253
EPA 351.2 Rev. 2.0	08/31/2018	09/04/2018 12:00	Adrian Shelby	09/05/2018 11:49	Joseph Suarez	2021244
	08/31/2018	09/04/2018 12:00	Adrian Shelby	09/05/2018 11:50	Joseph Suarez	2021245
	08/31/2018	09/04/2018 12:00	Adrian Shelby	09/05/2018 11:52	Joseph Suarez	2021246
	08/31/2018	09/04/2018 12:00	Adrian Shelby	09/05/2018 11:53	Joseph Suarez	2021252
	08/31/2018	09/04/2018 12:00	Adrian Shelby	09/05/2018 11:55	Joseph Suarez	2021253
EPA 353.2 Rev. 2.0	08/31/2018			09/07/2018 13:35	Lauren Bottorf	2021244
	08/31/2018			09/07/2018 13:36	Lauren Bottorf	2021245
	08/31/2018			09/07/2018 13:37	Lauren Bottorf	2021246
	08/31/2018			09/07/2018 13:38	Lauren Bottorf	2021252
	08/31/2018			09/07/2018 13:39	Lauren Bottorf	2021253
EPA 365.1 Rev. 2.0	08/31/2018	09/04/2018 14:44	Sima Feizi	09/05/2018 09:49	Beverly Y. Sanders	2021245
	08/31/2018	09/04/2018 14:44	Sima Feizi	09/05/2018 09:54	Beverly Y. Sanders	2021244
	08/31/2018	09/04/2018 14:44	Sima Feizi	09/05/2018 09:55	Beverly Y. Sanders	2021246
	08/31/2018	09/04/2018 14:44	Sima Feizi	09/05/2018 09:58	Beverly Y. Sanders	2021252
	08/31/2018	09/04/2018 14:44	Sima Feizi	09/05/2018 10:00	Beverly Y. Sanders	2021253
EPA 365.1 Rev. 2.0 dissolved	08/31/2018			08/31/2018 15:40	Anthony C. Onicha	2021247
	08/31/2018			08/31/2018 15:43	Anthony C. Onicha	2021248
	08/31/2018			08/31/2018 15:44	Anthony C. Onicha	2021249
	08/31/2018			08/31/2018 15:45	Anthony C. Onicha	2021254, 2021255

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	08/31/2018	08/31/2018 13:30	Hoor Shaik	09/01/2018 17:12	Juyoung Kim	2021271
	08/31/2018	08/31/2018 13:30	Hoor Shaik	09/01/2018 17:46	Juyoung Kim	2021272
	08/31/2018	08/31/2018 13:30	Hoor Shaik	09/01/2018 18:21	Juyoung Kim	2021273
	08/31/2018	08/31/2018 13:30	Hoor Shaik	09/01/2018 18:55	Juyoung Kim	2021274
	08/31/2018	08/31/2018 13:30	Hoor Shaik	09/01/2018 19:30	Juyoung Kim	2021275
	08/31/2018	08/31/2018 13:30	Hoor Shaik	09/02/2018 05:54	Juyoung Kim	2021271
	08/31/2018	08/31/2018 13:30	Hoor Shaik	09/02/2018 06:28	Juyoung Kim	2021272
	08/31/2018	08/31/2018 13:30	Hoor Shaik	09/02/2018 07:03	Juyoung Kim	2021273
	08/31/2018	08/31/2018 13:30	Hoor Shaik	09/02/2018 07:38	Juyoung Kim	2021274
	08/31/2018	08/31/2018 13:30	Hoor Shaik	09/02/2018 08:12	Juyoung Kim	2021275
	08/31/2018	09/05/2018 11:20	Mohammad Ghaffari	09/05/2018 12:00	Mohammad Ghaffari	2021271
	08/31/2018	09/05/2018 11:20	Mohammad Ghaffari	09/05/2018 12:15	Mohammad Ghaffari	2021272
	08/31/2018	09/05/2018 11:20	Mohammad Ghaffari	09/05/2018 12:44	Mohammad Ghaffari	2021273
	08/31/2018	09/05/2018 11:20	Mohammad Ghaffari	09/05/2018 12:59	Mohammad Ghaffari	2021274
	08/31/2018	09/05/2018 11:20	Mohammad Ghaffari	09/05/2018 13:13	Mohammad Ghaffari	2021275
	08/31/2018	09/05/2018 11:20	Mohammad Ghaffari	09/06/2018 11:10	Mohammad Ghaffari	2021271
	08/31/2018	09/05/2018 11:20	Mohammad Ghaffari	09/06/2018 12:48	Mohammad Ghaffari	2021272
	08/31/2018	09/05/2018 11:20	Mohammad Ghaffari	09/06/2018 13:03	Mohammad Ghaffari	2021273
	08/31/2018	09/05/2018 11:20	Mohammad Ghaffari	09/06/2018 13:18	Mohammad Ghaffari	2021274
	08/31/2018	09/05/2018 11:20	Mohammad Ghaffari	09/06/2018 13:32	Mohammad Ghaffari	2021275
SM 2120 B	08/31/2018			08/31/2018 16:06	Julia Storbeck	2021243
	08/31/2018			08/31/2018 16:08	Julia Storbeck	2021241
	08/31/2018			08/31/2018 16:09	Julia Storbeck	2021242, 2021250
	08/31/2018			08/31/2018 16:49	Julia Storbeck	2021251
SM 2320 B-97	08/31/2018			09/07/2018 08:16	Dale L. Simmons	2021242
	08/31/2018			09/07/2018 09:06	Dale L. Simmons	2021241
	08/31/2018			09/07/2018 09:16	Dale L. Simmons	2021243
	08/31/2018			09/07/2018 09:26	Dale L. Simmons	2021250
	08/31/2018			09/07/2018 09:37	Dale L. Simmons	2021251
SM 2540 C-97	08/31/2018			09/05/2018 14:02	Yijie Li	2021241, 2021242, 2021243, 2021250, 2021251
SM 2540 D-97	08/31/2018			09/05/2018 14:02	Yijie Li	2021241, 2021242, 2021243, 2021250, 2021251
SM 4500 F-C-97	08/31/2018			09/07/2018 08:08	Dale L. Simmons	2021242
	08/31/2018			09/07/2018 09:06	Dale L. Simmons	2021241
	08/31/2018			09/07/2018 09:16	Dale L. Simmons	2021243
	08/31/2018			09/07/2018 09:26	Dale L. Simmons	2021250
	08/31/2018			09/07/2018 09:37	Dale L. Simmons	2021251
SM 5310 B-00	08/31/2018			09/05/2018 03:30	Megan Treadwell	2021244
	08/31/2018			09/05/2018 03:43	Megan Treadwell	2021245

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 5310 B-00	08/31/2018			09/05/2018 03:56	Megan Treadwell	2021246
	08/31/2018			09/05/2018 04:10	Megan Treadwell	2021252
	08/31/2018			09/05/2018 04:23	Megan Treadwell	2021253