

Chemical Analysis Report

NE-DIST-2018-09-05-01

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

Event Description: **LSJR Downtown Fresh**
Request ID: **RQ-2018-09-03-32**
Customer: **NE-DIST**
Project ID: **SMP**

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Date Certified: 26-SEP-2018 11:48



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: Blockhouse 100m abv Irma Rd.

Collection Date/Time: 09/04/2018 09:20

Field ID: G2NE1159

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2021670	EPA 180.1 Rev. 2.0	Turbidity	45		NTU	P351158	
	EPA 300.0 Rev. 2.1	Chloride	19		mg Cl/L	P351467	
		Sulfate	10		mg SO4/L	P351469	
	SM 2120 B	Color (true)	96		PCU	P351170	
	SM 2320 B-97	Total Alkalinity	47		mg CaCO3/L	P351404	
	SM 2540 C-97	TDS	135		mg/L	P351548	
	SM 2540 D-97	TSS	35		mg/L	P351721	
	SM 4500 F-C-97	Fluoride	0.092	I	mg F/L	P351411	
2021672	EPA 350.1 Rev. 2.0	Ammonia-N	0.078		mg N/L	P351282	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.96		mg N/L	P351171	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.068		mg N/L	P351311	
	EPA 365.1 Rev. 2.0	Total-P	0.19		mg P/L	P351200	
	SM 5310 B-00	Organic Carbon	15		mg C/L	P351439	
2021674	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.052		mg P/L	P351135	
2021686	EPA 8321B	2,4-D	0.050		ug/L	P351097	MS
		Bentazon	0.0061		ug/L	P351097	
		MCP	0.0047	I	ug/L	P351097	MS
		Triclopyr**	0.0040	U	ug/L	P351097	MS
		Imidacloprid	0.020		ug/L	P351097	
		Diuron	0.0020	U	ug/L	P351097	
		Pyraclostrobin**	0.0020	U	ug/L	P351097	
		Primidone**	0.0040	U	ug/L	P351097	
		Linuron	0.0040	U	ug/L	P351097	
		Acetaminophen**	0.0080	U	ug/L	P351097	
		Fenuron	0.016	U	ug/L	P351097	MS
		Imazapyr**	0.34		ug/L	P351097	
		Carbamazepine**	0.018		ug/L	P351097	
		Fluridone**	5.4E-04	I	ug/L	P351097	
		Hydrocodone**	8.0E-04	U	ug/L	P351097	
		Naproxen**	0.0080	U	ug/L	P351097	
		Ibuprofen**	0.020	U	ug/L	P351097	
		Sucralose**	0.27		ug/L	P350994	
		Acesulfame K**	0.10	U	ug/L	P350994	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Sulfate: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

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

Sample Location: Blockhouse CR @ Duval Rd

Collection Date/Time: 09/04/2018 09:50

Field ID: 20030746

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2021688	EPA 8321B	2,4-D	0.056		ug/L	P351097	MS
		Bentazon	0.0046		ug/L	P351097	
		MCP	0.0029	I	ug/L	P351097	MS
		Triclopyr**	0.0040	U	ug/L	P351097	MS
		Imidacloprid	0.016		ug/L	P351097	
		Diuron	0.0020	U	ug/L	P351097	
		Pyraclostrobin**	0.0020	U	ug/L	P351097	
		Primidone**	0.0040	U	ug/L	P351097	
		Linuron	0.0040	U	ug/L	P351097	
		Acetaminophen**	0.0080	U	ug/L	P351097	
		Fenuron	0.016	U	ug/L	P351097	MS
		Imazapyr**	0.22		ug/L	P351258	
		Carbamazepine**	8.0E-04	U	ug/L	P351097	
		Fluridone**	4.0E-04	U	ug/L	P351258	
		Hydrocodone**	8.0E-04	U	ug/L	P351097	
		Naproxen**	0.0080	U	ug/L	P351097	
		Ibuprofen**	0.020	U	ug/L	P351097	
		Sucralose**	0.13		ug/L	P350994	
		Acesulfame K**	0.10	U	ug/L	P350994	

Ref. Method and Comment:

EPA 8321B: Insufficient sample available to perform matrix spikes for some parameters.

Sample Location: Blockhouse CR @ Duval Rd

Collection Date/Time: 09/04/2018 10:00

Field ID: 20030746 DUP

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2021689	EPA 8321B	2,4-D	0.067		ug/L	P351097	MS
		Bentazon	0.0053		ug/L	P351097	
		MCPP	0.0034	I	ug/L	P351097	MS
		Triclopyr**	0.0040	U	ug/L	P351097	MS
		Imidacloprid	0.017		ug/L	P351097	
		Diuron	0.0020	U	ug/L	P351097	
		Pyraclostrobin**	0.0020	U	ug/L	P351097	
		Primidone**	0.0040	U	ug/L	P351097	
		Linuron	0.0040	U	ug/L	P351097	
		Acetaminophen**	0.0080	U	ug/L	P351097	
		Fenuron	0.016	U	ug/L	P351097	MS
		Imazapyr**	0.22		ug/L	P351258	
		Carbamazepine**	8.0E-04	U	ug/L	P351097	
		Fluridone**	4.4E-04	U	ug/L	P351258	
		Hydrocodone**	8.0E-04	U	ug/L	P351097	
		Naproxen**	0.0080	U	ug/L	P351097	
		Ibuprofen**	0.020	U	ug/L	P351097	
		Sucralose**	0.11		ug/L	P350994	
		Acesulfame K**	0.10	U	ug/L	P350994	

Ref. Method and Comment:

EPA 8321B: Insufficient sample available to perform matrix spikes for some parameters.

Sample Location: Hogans CR at Broad St.

Collection Date/Time: 09/04/2018 12:15

Field ID: 20030729

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2021671	EPA 180.1 Rev. 2.0	Turbidity	3.6		NTU	P351158	
	EPA 300.0 Rev. 2.1	Chloride	13		mg Cl/L	P351467	
		Sulfate	32		mg SO4/L	P351469	
		Color (true)	34		PCU	P351166	
	SM 2320 B-97	Total Alkalinity	113		mg CaCO3/L	P351404	
	SM 2540 C-97	TDS	193		mg/L	P351548	
	SM 2540 D-97	TSS	4	I	mg/L	P351721	
	SM 4500 F-C-97	Fluoride	0.18		mg F/L	P351411	
2021673	EPA 350.1 Rev. 2.0	Ammonia-N	0.23		mg N/L	P351282	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.64		mg N/L	P351171	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.17		mg N/L	P351311	
	EPA 365.1 Rev. 2.0	Total-P	0.12		mg P/L	P351200	
	SM 5310 B-00	Organic Carbon	6.0		mg C/L	P351439	
2021675	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.060		mg P/L	P351135	
2021687	EPA 8321B	2,4-D	0.10		ug/L	P351097	MS
		Bentazon	0.031		ug/L	P351097	
		MCP	0.0020	U	ug/L	P351097	MS
		Triclopyr**	0.0040	U	ug/L	P351097	MS
		Imidacloprid	0.074		ug/L	P351097	
		Diuron	0.0050	I	ug/L	P351097	
		Pyraclostrobin**	0.0020	U	ug/L	P351097	
		Primidone**	0.0040	U	ug/L	P351097	
		Linuron	0.0040	U	ug/L	P351097	
		Acetaminophen**	0.21		ug/L	P351097	
		Fenuron	0.016	U	ug/L	P351097	MS
		Imazapyr**	0.21		ug/L	P351097	
		Carbamazepine**	8.0E-04	U	ug/L	P351097	
		Fluridone**	0.0010	I	ug/L	P351097	
		Hydrocodone**	8.0E-04	U	ug/L	P351097	
		Naproxen**	0.0080	U	ug/L	P351097	
		Ibuprofen**	0.020	U	ug/L	P351097	
		Sucralose**	0.089		ug/L	P350994	
		Acesulfame K**	0.10	U	ug/L	P350994	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Sulfate: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

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

Sample Location: Trout River at Garden St

Collection Date/Time: 09/04/2018 10:40

Field ID: 20030751

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2021731	EPA 180.1 Rev. 2.0	Turbidity	7.6		NTU	P351159	
	EPA 300.0 Rev. 2.1	Chloride	13		mg Cl/L	P351467	
		Sulfate	4.4		mg SO4/L	P351469	
		Color (true)	390		PCU	P351167	
	SM 2320 B-97	Total Alkalinity	8.1		mg CaCO3/L	P351404	
	SM 2540 C-97	TDS	107		mg/L	P351549	
	SM 2540 D-97	TSS	8	I	mg/L	P351722	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P351411	
2021733	EPA 350.1 Rev. 2.0	Ammonia-N	0.019		mg N/L	P351283	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.0		mg N/L	P351172	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.045		mg N/L	P351313	
	EPA 365.1 Rev. 2.0	Total-P	0.16		mg P/L	P351201	
	SM 5310 B-00	Organic Carbon	34		mg C/L	P351439	
2021735	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.12		mg P/L	P351135	
2021751	EPA 200.7 Rev. 4.4	Calcium	8.16		mg/L	P351199	
		Iron	990		ug/L	P351199	
		Magnesium	1.61		mg/L	P351199	
		Potassium	1.6		mg/L	P351199	
		Sodium	8.7		mg/L	P351199	
		Zinc	12	I	ug/L	P351199	
	EPA 200.8 Rev. 5.4	Arsenic	0.88		ug/L	P351199	
		Cadmium	0.020	U	ug/L	P351199	
		Chromium	0.91	I	ug/L	P351199	
		Copper	1.35		ug/L	P351199	
		Lead	1.22		ug/L	P351199	
		Nickel	0.81		ug/L	P351199	
		Silver	0.022	I	ug/L	P351199	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Sulfate: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

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

EPA 200.8 Rev. 5.4: The lead result was confirmed in the undigested sample on 09/20/2018.

Sample Location: Trout River at Ramallah Rd

Collection Date/Time: 09/04/2018 11:15

Field ID: 20030752

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2021732	EPA 180.1 Rev. 2.0	Turbidity	6.7		NTU	P351159	
	EPA 300.0 Rev. 2.1	Chloride	12		mg Cl/L	P351467	
		Sulfate	4.4		mg SO4/L	P351469	
		Color (true)	460		PCU	P351168	
	SM 2320 B-97	Total Alkalinity	3.7		mg CaCO3/L	P351404	
	SM 2540 C-97	TDS	107		mg/L	P351549	
	SM 2540 D-97	TSS	7	I	mg/L	P351722	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P351411	
2021734	EPA 350.1 Rev. 2.0	Ammonia-N	0.023		mg N/L	P351283	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.3		mg N/L	P351172	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.024		mg N/L	P351313	
	EPA 365.1 Rev. 2.0	Total-P	0.17		mg P/L	P351202	
	SM 5310 B-00	Organic Carbon	40		mg C/L	P351440	
2021736	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.13		mg P/L	P351135	
2021752	EPA 200.7 Rev. 4.4	Calcium	7.09		mg/L	P351199	
		Iron	1.11E+03		ug/L	P351199	
		Magnesium	1.59		mg/L	P351199	
		Potassium	1.7		mg/L	P351199	
		Sodium	8.1		mg/L	P351199	
		Zinc	12	I	ug/L	P351199	
	EPA 200.8 Rev. 5.4	Arsenic	0.89		ug/L	P351199	
		Cadmium	0.020	U	ug/L	P351199	
		Chromium	0.90	I	ug/L	P351199	
		Copper	1.38		ug/L	P351199	
		Lead	1.46		ug/L	P351199	
		Nickel	0.80		ug/L	P351199	
		Silver	0.023	I	ug/L	P351199	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Sulfate: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

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

EPA 200.8 Rev. 5.4: The lead result was confirmed in the undigested sample on 09/20/2018.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P351158

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P351159

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P351199

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: P351199

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: P351467

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P351469

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P351282

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P351283

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P351171

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P351172

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P351311

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P351313

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P351200

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P351201

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P351202

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P351135

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B
Batch ID: P350994

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

Reference Method: EPA 8321B
Batch ID: P351097

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	0.016	U	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: P351258

Component	Result	Code	Units
Fluridone	4.0E-04	U	ug/L
Imazapyr	0.0040	U	ug/L

Reference Method: SM 2120 B
Batch ID: P351166

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B
Batch ID: P351167

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B
Batch ID: P351168

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Quality Assurance Report

Method Blank Results

Reference Method: SM 2120 B
Batch ID: P351170

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P351404

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

Reference Method: SM 2540 C-97
Batch ID: P351548

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P351549

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P351721

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P351722

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P351411

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P351439

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

Reference Method: SM 5310 B-00
Batch ID: P351440

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: P351199

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	111		P	85 - 115
Iron	109		P	85 - 115
Magnesium	114		P	85 - 115
Potassium	111		P	85 - 115
Sodium	112		P	85 - 115
Zinc	104		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P351199

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Arsenic	101		P	85 - 115
Cadmium	103		P	85 - 115
Chromium	106		P	85 - 115
Copper	96.7		P	85 - 115
Lead	104		P	85 - 115
Nickel	98.7		P	85 - 115
Silver	104		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P351467

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P351469

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	96.2		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P351282

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P351283

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P351171

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P351172

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P351311

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P351313

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P351200

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P351201

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P351202

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P351135

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

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: EPA 8321B
Batch ID: P351097

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	110		P	40 - 150
Acetaminophen	83.2		P	30 - 150
Bentazon	105		P	30 - 150

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P351097

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Carbamazepine	122		P	40 - 150
Diuron	100		P	40 - 150
Fenuron	97.0		P	40 - 150
Fluridone	97.4		P	40 - 150
Hydrocodone	78.7		P	40 - 150
Ibuprofen	84.7		P	40 - 150
Imazapyr	120		P	40 - 150
Imidacloprid	115		P	40 - 160
Linuron	75.9		P	40 - 150
MCPP	111		P	40 - 150
Naproxen	103		P	40 - 150
Primidone	101		P	40 - 150
Pyraclostrobin	81.7		P	40 - 150
Triclopyr	103		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P351258

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluridone	103	114	P/P	40 - 150
Imazapyr	75.7	80.1	P/P	40 - 150

Reference Method: SM 2120 B
Batch ID: P351166

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	96.7		P	85 - 115

Reference Method: SM 2120 B
Batch ID: P351167

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	98.3		P	85 - 115

Reference Method: SM 2120 B
Batch ID: P351168

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

Reference Method: SM 2120 B
Batch ID: P351170

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

Reference Method: SM 2320 B-97
Batch ID: P351404

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P351411

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.2		P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P351439

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	94.2		P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P351440

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	94.0		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P351199

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2021575	Calcium	113		P	80 - 120
2021575	Iron	111		P	80 - 120
2021575	Magnesium	117		P	80 - 120
2021575	Potassium	108		P	80 - 120
2021575	Sodium	111		P	80 - 120
2021575	Zinc	105		P	80 - 120
2022031	Calcium	112	111	P/P	80 - 120
2022031	Iron	111	110	P/P	80 - 120
2022031	Magnesium	114	114	P/P	80 - 120
2022031	Potassium	109	107	P/P	80 - 120
2022031	Sodium	108	107	P/P	80 - 120
2022031	Zinc	106	103	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P351199

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2021575	Arsenic	104		P	80 - 120
2021575	Cadmium	106		P	80 - 120
2021575	Chromium	111		P	80 - 120
2021575	Copper	99.7		P	80 - 120
2021575	Lead	106		P	80 - 120
2021575	Nickel	102		P	80 - 120
2021575	Silver	105		P	80 - 120
2022031	Arsenic	99.9	100	P/P	80 - 120
2022031	Cadmium	103	105	P/P	80 - 120
2022031	Chromium	111	107	P/P	80 - 120
2022031	Copper	96.4	96.6	P/P	80 - 120
2022031	Lead	105	104	P/P	80 - 120
2022031	Nickel	100	97.8	P/P	80 - 120
2022031	Silver	104	104	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P351467

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2021539	Chloride	104		P	90 - 110
2021705	Chloride	92.4		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P351469

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2021539	Sulfate	103		P	90 - 110
2021705	Sulfate	90.5		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P351282

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2021569	Ammonia-N	96.8	99.1	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P351283

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2021718	Ammonia-N	95.7	93.7	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P351171

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2021713	Kjeldahl Nitrogen	97.9	98.7	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P351172

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2021788	Kjeldahl Nitrogen	103	97.1	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P351311

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2021569	NO2NO3-N	100	103	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P351313

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2021946	NO2NO3-N	99.2		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P351200

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2021673	Total-P	101	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P351201

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2021712	Total-P	101	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P351202

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2021788	Total-P	101	96.3	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P351135

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2021675	O-Phosphate-P	97.1	97.3	P/P	90 - 110

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: EPA 8321B
Batch ID: P351097

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2022149	2,4-D	185	187	F/F	40 - 150
2022149	Acetaminophen	81.7	89.4	P/P	30 - 150
2022149	Bentazon	80.0	83.8	P/P	30 - 150
2022149	Carbamazepine	67.6	75.7	P/P	40 - 150
2022149	Diuron	49.7	58.5	P/P	40 - 150
2022149	Fenuron	31.5	35.0	F/F	40 - 150
2022149	Fluridone	90.3	83.9	P/P	40 - 150
2022149	Hydrocodone	61.5	58.8	P/P	40 - 150
2022149	Ibuprofen	87.4	75.4	P/P	40 - 150
2022149	Imazapyr	86.0	91.1	P/P	40 - 150
2022149	Imidacloprid	51.2	92.5	P/P	40 - 160
2022149	Linuron	57.0	64.4	P/P	40 - 150
2022149	MCP	181	186	F/F	40 - 150
2022149	Naproxen	149	149	P/P	40 - 150
2022149	Primidone	42.0	44.0	P/P	40 - 150
2022149	Pyraclostrobin	82.3	91.2	P/P	40 - 150
2022149	Triclopyr	221	235	F/F	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P351411

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2022229	Fluoride	97.6	97.6	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P351439

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2021542	Organic Carbon	97.2	96.6	P/P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P351440

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2021734	Organic Carbon	98.8		P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P351158

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2021702	Turbidity	2.71	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P351159

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2021709	Turbidity	0.566	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P351199

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2022031	Calcium	0.437	Spike	P	0 - 20
2022031	Iron	0.815	Spike	P	0 - 20
2022031	Magnesium	0.155	Spike	P	0 - 20
2022031	Potassium	1.75	Spike	P	0 - 20
2022031	Sodium	0.873	Spike	P	0 - 20
2022031	Zinc	3.54	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P351199

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2022031	Arsenic	0.356	Spike	P	0 - 20
2022031	Cadmium	2.33	Spike	P	0 - 20
2022031	Chromium	3.66	Spike	P	0 - 20
2022031	Copper	0.165	Spike	P	0 - 20
2022031	Lead	0.626	Spike	P	0 - 20
2022031	Nickel	2.19	Spike	P	0 - 20
2022031	Silver	0.0735	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P351467

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2021539	Chloride	2.16	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P351282

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2021569	Ammonia-N	2.25	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P351283

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2021718	Ammonia-N	1.37	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P351171

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2021713	Kjeldahl Nitrogen	0.696	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P351172

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2021788	Kjeldahl Nitrogen	3.12	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P351311

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2021569	NO2NO3-N	2.96	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P351313

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2021946	NO2NO3-N	1.32	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P351200

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2021673	Total-P	0.834	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P351201

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2021712	Total-P	3.04	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P351202

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2021788	Total-P	4.46	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P351135

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2021675	O-Phosphate-P	0.128	Spike	P	0 - 20

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: EPA 8321B
Batch ID: P351097

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2022149	2,4-D	0.753	Spike	P	0 - 30
2022149	Acetaminophen	8.99	Spike	P	0 - 30
2022149	Bentazon	4.22	Spike	P	0 - 30
2022149	Carbamazepine	11.3	Spike	P	0 - 30
2022149	Diuron	3.60	Spike	P	0 - 30
2022149	Fenuron	10.4	Spike	P	0 - 30
2022149	Fluridone	6.89	Spike	P	0 - 30
2022149	Hydrocodone	4.40	Spike	P	0 - 30
2022149	Ibuprofen	14.8	Spike	P	0 - 30
2022149	Imazapyr	5.40	Spike	P	0 - 30
2022149	Imidacloprid	12.4	Spike	P	0 - 30
2022149	Linuron	12.2	Spike	P	0 - 30
2022149	MCP	2.54	Spike	P	0 - 30
2022149	Naproxen	0.467	Spike	P	0 - 30
2022149	Primidone	4.63	Spike	P	0 - 30
2022149	Pyraclostrobin	10.3	Spike	P	0 - 30
2022149	Triclopyr	6.23	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P351258

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
LFB	Fluridone	9.32	LCS	P	0 - 30
LFB	Imazapyr	5.56	LCS	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P351166

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2021702	Color (true)	0.705	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2120 B
Batch ID: P351167

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2021709	Color (true)	6.85	Sample	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P351168

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2022036	Color (true)	7.98	Sample	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P351170

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2021568	Color (true)	9.19	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P351404

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2022229	Total Alkalinity	0.574	Sample	P	0 - 1.6

Reference Method: SM 2540 C-97
Batch ID: P351548

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2021706	TDS	0.0	Sample	P	0 - 10

Reference Method: SM 2540 C-97
Batch ID: P351549

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2021709	TDS	6.13	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P351411

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2022229	Fluoride	0.0	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
Batch ID: P351439

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2021542	Organic Carbon	0.355	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 5310 B-00
Batch ID: P351440

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2021734	Organic Carbon	0.298	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: 2021686
Field Sample ID: G2NE1159

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	104	P	30 - 160
EPA 8321B	Acetaminophen-d4	114	P	30 - 160
EPA 8321B	Carbamazepine-d10	80.7	P	30 - 160
EPA 8321B	Diuron-d6	71.8	P	30 - 160
EPA 8321B	Endothall-d6	133	P	40 - 160
EPA 8321B	Ibuprofen-d3	86.4	P	30 - 160
EPA 8321B	Primidone-d5	56.5	P	30 - 160
EPA 8321B	Sucralose-d6	122	P	40 - 160

Lab Sample ID: 2021687
Field Sample ID: 20030729

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	92.0	P	30 - 160
EPA 8321B	Acetaminophen-d4	113	P	30 - 160
EPA 8321B	Carbamazepine-d10	69.1	P	30 - 160
EPA 8321B	Diuron-d6	60.9	P	30 - 160
EPA 8321B	Endothall-d6	119	P	40 - 160
EPA 8321B	Ibuprofen-d3	75.5	P	30 - 160
EPA 8321B	Primidone-d5	64.3	P	30 - 160
EPA 8321B	Sucralose-d6	114	P	40 - 160

Lab Sample ID: 2021688
Field Sample ID: 20030746

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	124	P	30 - 160
EPA 8321B	Acetaminophen-d4	94.3	P	30 - 160
EPA 8321B	Carbamazepine-d10	67.1	P	30 - 160
EPA 8321B	Diuron-d6	60.4	P	30 - 160
EPA 8321B	Endothall-d6	133	P	40 - 160
EPA 8321B	Ibuprofen-d3	85.2	P	30 - 160
EPA 8321B	Primidone-d5	39.5	P	30 - 160
EPA 8321B	Sucralose-d6	95.9	P	40 - 160

Lab Sample ID: 2021689
Field Sample ID: 20030746 DUP

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	150	P	30 - 160
EPA 8321B	Acetaminophen-d4	106	P	30 - 160
EPA 8321B	Carbamazepine-d10	75.0	P	30 - 160
EPA 8321B	Diuron-d6	69.5	P	30 - 160
EPA 8321B	Endothall-d6	136	P	40 - 160
EPA 8321B	Ibuprofen-d3	97.0	P	30 - 160
EPA 8321B	Primidone-d5	55.2	P	30 - 160
EPA 8321B	Sucralose-d6	118	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A86300

Included Lab Sample IDs: 2021674, 2021675, 2021735, 2021736

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	100	101	P/P	90 - 110
O-Phosphate-P	101	100	P/P	90 - 110
O-Phosphate-P	99.9	100	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A86302

Included Lab Sample IDs: 2021686, 2021687, 2021688, 2021689

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	102	94.9	P/P	60 - 160
Acesulfame K	94.9	116	P/P	60 - 160

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A86309

Included Lab Sample IDs: 2021670, 2021671, 2021731, 2021732

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

Reference Method: SM 2120 B

Run ID: A86310

Included Lab Sample IDs: 2021670, 2021671, 2021731, 2021732

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	96.8	97.4	P/P	90 - 115
Color (true)	98.2	99.1	P/P	90 - 115
Color (true)	99.1	99.6	P/P	90 - 115

Reference Method: EPA 8321B

Run ID: A86330

Included Lab Sample IDs: 2021686, 2021687, 2021688, 2021689

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	84.2	89.2	P/P	60 - 160
Sucralose	89.2	93.8	P/P	60 - 160

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A86336

Included Lab Sample IDs: 2021672, 2021673, 2021733, 2021734

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	100	100	P/P	90 - 110
Total-P	100	101	P/P	90 - 110
Total-P	102	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A86347

Included Lab Sample IDs: 2021672, 2021673, 2021733, 2021734

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A86347

Included Lab Sample IDs: 2021672, 2021673, 2021733, 2021734

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	100	103	P/P	90 - 110
Kjeldahl Nitrogen	96.7	99.4	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A86348

Included Lab Sample IDs: 2021672, 2021673, 2021733, 2021734

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	100	100	P/P	90 - 110
Ammonia-N	98.5	97.0	P/P	90 - 110
Ammonia-N	99.5	98.7	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A86354

Included Lab Sample IDs: 2021672, 2021673, 2021733, 2021734

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

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A86361

Included Lab Sample IDs: 2021751, 2021752

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	103	104	P/P	90 - 110
Iron	103	103	P/P	90 - 110
Magnesium	104	104	P/P	90 - 110
Potassium	106	107	P/P	90 - 110
Sodium	104	105	P/P	90 - 110
Zinc	102	101	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A86372

Included Lab Sample IDs: 2021686, 2021687, 2021688, 2021689

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	93.1	106	P/P	50 - 150
Acetaminophen	112	88.6	P/P	60 - 160
Bentazon	108	127	P/P	50 - 160
Carbamazepine	92.4	87.0	P/P	60 - 160
Diuron	113	110	P/P	60 - 150
Fenuron	96.9	98.8	P/P	60 - 150
Fluridone	117	114	P/P	60 - 160
Hydrocodone	98.2	96.4	P/P	60 - 150
Ibuprofen	92.6	89.7	P/P	50 - 160
Imazapyr	127	99.7	P/P	50 - 150
Imidacloprid	89.4	91.9	P/P	60 - 150
Linuron	104	109	P/P	60 - 150
MCP	94.4	94.9	P/P	50 - 150
Naproxen	109	138	P/P	50 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A86372

Included Lab Sample IDs: 2021686, 2021687, 2021688, 2021689

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Primidone	96.9	91.4	P/P	60 - 150
Pyraclostrobin	92.1	95.4	P/P	60 - 150
Triclopyr	98.7	105	P/P	50 - 160

Reference Method: EPA 8321B

Run ID: A86393

Included Lab Sample IDs: 2021688, 2021689

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluridone	109	113	P/P	60 - 160
Imazapyr	94.0	103	P/P	50 - 150

Reference Method: SM 2320 B-97

Run ID: A86400

Included Lab Sample IDs: 2021670, 2021671, 2021731, 2021732

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

Reference Method: SM 4500 F-C-97

Run ID: A86400

Included Lab Sample IDs: 2021670, 2021671, 2021731, 2021732

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.5	99.0	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A86406

Included Lab Sample IDs: 2021672, 2021673, 2021733, 2021734

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	92.8	93.8	P/P	90 - 110
Organic Carbon	93.8	93.0	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A86418

Included Lab Sample IDs: 2021670, 2021671, 2021731, 2021732

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	103	99.7	P/P	90 - 110
Chloride	99.6	103	P/P	90 - 110
Sulfate	102	98.9	P/P	90 - 110
Sulfate	98.9	102	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A86537

Included Lab Sample IDs: 2021751, 2021752

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	95.5	94.9	P/P	90 - 110
Cadmium	96.0	97.2	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A86537

Included Lab Sample IDs: 2021751, 2021752

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chromium	101	101	P/P	90 - 110
Copper	93.3	93.3	P/P	90 - 110
Lead	103	104	P/P	90 - 110
Nickel	93.9	93.8	P/P	90 - 110
Silver	98.9	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							2.71	
	Turbidity							0.566	
EPA 200.7 Rev. 4.4	Calcium	111		113	112	111			0.437
	Iron	109		111	110	111			0.815
	Magnesium	114		117	114	114			0.155
	Potassium	111		108	109	107			1.75
	Sodium	112		111	108	107			0.873
	Zinc	104		105	106	103			3.54
EPA 200.8 Rev. 5.4	Arsenic	101		104	99.9	100			0.356
	Cadmium	103		106	103	105			2.33
	Chromium	106		111	111	107			3.66
	Copper	96.7		99.7	96.4	96.6			0.165
	Lead	104		106	105	104			0.626
	Nickel	98.7		102	100	97.8			2.19
	Silver	104		105	104	104			0.0735
EPA 300.0 Rev. 2.1	Chloride	96.8		104	92.4			2.16	
	Sulfate	96.2		103	90.5				
EPA 350.1 Rev. 2.0	Ammonia-N	101		96.8	99.1				2.25
	Ammonia-N	101		95.7	93.7				1.37
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	104		97.9	98.7				0.696
	Kjeldahl Nitrogen	98.2		103	97.1				3.12
EPA 353.2 Rev. 2.0	NO2NO3-N	100		100	103				2.96
	NO2NO3-N	101		99.2					1.32
EPA 365.1 Rev. 2.0	Total-P	102		101	103				0.834
	Total-P	101		101	104				3.04
	Total-P	100		101	96.3				4.46
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.2		97.1	97.3				0.128
EPA 8321B	2,4-D	110		185	187				0.753
	Acesulfame K	93.9		64.1	63.3				1.25
	Acetaminophen	83.2		81.7	89.4				8.99
	Bentazon	105		80.0	83.8				4.22
	Carbamazepine	122		67.6	75.7				11.3
	Diuron	100		49.7	58.5				3.60
	Fenuron	97.0		31.5	35.0				10.4
	Fluridone	97.4		90.3	83.9				6.89
	Fluridone	103	114				9.32		
	Hydrocodone	78.7		61.5	58.8				4.40
	Ibuprofen	84.7		87.4	75.4				14.8
	Imazapyr	120		86.0	91.1				5.40
	Imazapyr	75.7	80.1				5.56		
	Imidacloprid	115		51.2	92.5				12.4
	Linuron	75.9		57.0	64.4				12.2
	MCPP	111		181	186				2.54
	Naproxen	103		149	149				0.467
	Primidone	101		42.0	44.0				4.63
	Pyraclostrobin	81.7		82.3	91.2				10.3
	Sucralose	81.3		68.7	78.8				12.2
	Triclopyr	103		221	235				6.23
SM 2120 B	Color (true)	96.7						0.705	
	Color (true)	98.3						6.85	
	Color (true)	100						7.98	
	Color (true)	100						9.19	
SM 2320 B-97	Total Alkalinity	103						0.574	
SM 2540 C-97	TDS							0.0	

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		LCS	Precision	MS
						SMP	
SM 2540 C-97	TDS					6.13	
SM 4500 F-C-97	Fluoride	98.2	97.6	97.6			0.0
SM 5310 B-00	Organic Carbon	94.2	97.2	96.6			0.355
	Organic Carbon	94.0	98.8				0.298

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2021670, 2021671, 2021731, 2021732
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2021751, 2021752
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2021751, 2021752
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2021670, 2021671, 2021731, 2021732
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2021670, 2021671, 2021731, 2021732
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2021672, 2021673, 2021733, 2021734
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2021672, 2021673, 2021733, 2021734
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2021672, 2021673, 2021733, 2021734
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2021672, 2021673, 2021733, 2021734
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2021674, 2021675, 2021735, 2021736
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2021686, 2021687, 2021688, 2021689
SM 2120 B / E31780	True Color measured at 450 nm	2021670, 2021671, 2021731, 2021732
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	2021670, 2021671, 2021731, 2021732
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2021670, 2021671, 2021731, 2021732
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2021670, 2021671, 2021731, 2021732
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2021670, 2021671, 2021731, 2021732
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2021672, 2021673, 2021733, 2021734

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	09/05/2018			09/05/2018 16:03	Megan Treadwell	2021670, 2021671, 2021731, 2021732
EPA 200.7 Rev. 4.4	09/05/2018	09/06/2018 17:15	Elliott D. Healy	09/07/2018 21:24	Martin Acosta	2021751
	09/05/2018	09/06/2018 17:15	Elliott D. Healy	09/07/2018 21:30	Martin Acosta	2021752
EPA 200.8 Rev. 5.4	09/05/2018	09/06/2018 17:15	Elliott D. Healy	09/14/2018 20:33	Allison Taylor	2021751
	09/05/2018	09/06/2018 17:15	Elliott D. Healy	09/14/2018 20:43	Allison Taylor	2021752
EPA 300.0 Rev. 2.1	09/05/2018			09/11/2018 04:06	Lipi Saha	2021670
	09/05/2018			09/11/2018 04:18	Lipi Saha	2021671
	09/05/2018			09/11/2018 06:41	Lipi Saha	2021731
	09/05/2018			09/11/2018 06:53	Lipi Saha	2021732
EPA 350.1 Rev. 2.0	09/05/2018			09/06/2018 12:34	Ping Hua	2021672
	09/05/2018			09/06/2018 13:10	Ping Hua	2021733
	09/05/2018			09/06/2018 13:12	Ping Hua	2021734
	09/05/2018			09/06/2018 13:53	Ping Hua	2021673
EPA 351.2 Rev. 2.0	09/05/2018	09/06/2018 10:00	Adrian Shelby	09/07/2018 11:37	Joseph Suarez	2021672
	09/05/2018	09/06/2018 10:00	Adrian Shelby	09/07/2018 11:39	Joseph Suarez	2021673
	09/05/2018	09/06/2018 10:00	Adrian Shelby	09/07/2018 12:08	Joseph Suarez	2021733
	09/05/2018	09/06/2018 10:00	Adrian Shelby	09/07/2018 12:10	Joseph Suarez	2021734
EPA 353.2 Rev. 2.0	09/05/2018			09/07/2018 14:48	Lauren Bottorf	2021672
	09/05/2018			09/07/2018 14:49	Lauren Bottorf	2021673
	09/05/2018			09/07/2018 15:27	Lauren Bottorf	2021733
	09/05/2018			09/07/2018 15:28	Lauren Bottorf	2021734
EPA 365.1 Rev. 2.0	09/05/2018	09/06/2018 13:35	Sima Feizi	09/07/2018 09:02	Beverly Y. Sanders	2021673
	09/05/2018	09/06/2018 13:35	Sima Feizi	09/07/2018 09:15	Beverly Y. Sanders	2021672
	09/05/2018	09/06/2018 13:35	Sima Feizi	09/07/2018 09:35	Beverly Y. Sanders	2021733
	09/05/2018	09/06/2018 13:35	Sima Feizi	09/07/2018 09:42	Beverly Y. Sanders	2021734
EPA 365.1 Rev. 2.0 dissolved	09/05/2018			09/05/2018 16:45	Julia Storbeck	2021675
	09/05/2018			09/05/2018 17:15	Julia Storbeck	2021735
	09/05/2018			09/05/2018 17:16	Julia Storbeck	2021736
	09/05/2018			09/05/2018 17:42	Julia Storbeck	2021674
EPA 8321B	09/05/2018	09/05/2018 11:20	Mohammad Ghaffari	09/05/2018 14:12	Mohammad Ghaffari	2021686
	09/05/2018	09/05/2018 11:20	Mohammad Ghaffari	09/05/2018 14:59	Mohammad Ghaffari	2021688
	09/05/2018	09/05/2018 11:20	Mohammad Ghaffari	09/05/2018 15:13	Mohammad Ghaffari	2021689
	09/05/2018	09/05/2018 11:20	Mohammad Ghaffari	09/05/2018 16:41	Mohammad Ghaffari	2021687
	09/05/2018	09/05/2018 11:20	Mohammad Ghaffari	09/06/2018 14:53	Mohammad Ghaffari	2021686
	09/05/2018	09/05/2018 11:20	Mohammad Ghaffari	09/06/2018 15:22	Mohammad Ghaffari	2021687
	09/05/2018	09/05/2018 11:20	Mohammad Ghaffari	09/06/2018 15:37	Mohammad Ghaffari	2021688
	09/05/2018	09/05/2018 11:20	Mohammad Ghaffari	09/06/2018 15:51	Mohammad Ghaffari	2021689
	09/05/2018	09/06/2018 09:00	Hoor Shaik	09/07/2018 17:48	Juyoung Kim	2021686
	09/05/2018	09/06/2018 09:00	Hoor Shaik	09/07/2018 18:22	Juyoung Kim	2021687
	09/05/2018	09/06/2018 09:00	Hoor Shaik	09/07/2018 18:57	Juyoung Kim	2021688

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	09/05/2018	09/06/2018 09:00	Hoor Shaik	09/07/2018 19:32	Juyoung Kim	2021689
	09/05/2018	09/06/2018 09:00	Hoor Shaik	09/08/2018 16:51	Juyoung Kim	2021686
	09/05/2018	09/06/2018 09:00	Hoor Shaik	09/08/2018 17:26	Juyoung Kim	2021687
	09/05/2018	09/06/2018 09:00	Hoor Shaik	09/08/2018 18:00	Juyoung Kim	2021688
	09/05/2018	09/06/2018 09:00	Hoor Shaik	09/08/2018 18:35	Juyoung Kim	2021689
	09/05/2018	09/10/2018 13:00	Hoor Shaik	09/10/2018 23:06	Juyoung Kim	2021688
	09/05/2018	09/10/2018 13:00	Hoor Shaik	09/10/2018 23:41	Juyoung Kim	2021689
SM 2120 B	09/05/2018			09/05/2018 13:42	DeAsia Armster	2021671
	09/05/2018			09/05/2018 14:12	DeAsia Armster	2021670
	09/05/2018			09/05/2018 14:26	DeAsia Armster	2021731
	09/05/2018			09/05/2018 14:27	DeAsia Armster	2021732
SM 2320 B-97	09/05/2018			09/11/2018 02:14	Dale L. Simmons	2021670
	09/05/2018			09/11/2018 02:25	Dale L. Simmons	2021671
	09/05/2018			09/11/2018 02:35	Dale L. Simmons	2021731
	09/05/2018			09/11/2018 02:45	Dale L. Simmons	2021732
SM 2540 C-97	09/05/2018			09/07/2018 15:06	Yijie Li	2021670, 2021671, 2021731, 2021732
SM 2540 D-97	09/05/2018			09/07/2018 15:06	Yijie Li	2021670, 2021671, 2021731, 2021732
SM 4500 F-C-97	09/05/2018			09/11/2018 02:14	Dale L. Simmons	2021670
	09/05/2018			09/11/2018 02:25	Dale L. Simmons	2021671
	09/05/2018			09/11/2018 02:35	Dale L. Simmons	2021731
	09/05/2018			09/11/2018 02:45	Dale L. Simmons	2021732
SM 5310 B-00	09/05/2018			09/10/2018 22:27	Megan Treadwell	2021672
	09/05/2018			09/10/2018 22:41	Megan Treadwell	2021673
	09/05/2018			09/11/2018 01:42	Megan Treadwell	2021733
	09/05/2018			09/11/2018 02:25	Megan Treadwell	2021734