

Chemical Analysis Report

NE-DIST-2018-03-02-01

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

Event Description: **LSJR East 1_2018**
Request ID: **RQ-2018-02-26-09**
Customer: **NE-DIST**
Project ID: **SMP**

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Certified by: Thekkekalathil Chandrasekhar, Chemist Administrator

Date Certified: 09-APR-2018 12:44



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: BIG POTTSBURG CR AT BELFORT RD

Collection Date/Time: 03/01/2018 14:10

Field ID: 20030064

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1971401	EPA 180.1 Rev. 2.0	Turbidity	3.7		NTU	P340900	
	EPA 300.0 Rev. 2.1	Chloride	30		mg Cl/L	P341419	
		Sulfate	33		mg SO4/L	P341424	
	SM 2120 B	Color (true)	69		PCU	P340896	
	SM 2320 B-97	Total Alkalinity	98		mg CaCO3/L	P341336	
	SM 2540 C-97	TDS	216		mg/L	P341464	
	SM 2540 D-97	TSS	3	I	mg/L	P341372	
	SM 4500 F-C-97	Fluoride	0.12		mg F/L	P341527	
1971403	EPA 350.1 Rev. 2.0	Ammonia-N	0.027		mg N/L	P341234	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.53		mg N/L	P340966	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.18		mg N/L	P340948	
	EPA 365.1 Rev. 2.0	Total-P	0.096		mg P/L	P340994	
	SM 5310 B-00	Organic Carbon	12		mg C/L	P341045	
1971405	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.061		mg P/L	P340892	
1971433	EPA 8321B	2,4-D	0.0044	I	ug/L	P340783	
		Sucralose**	0.071		ug/L	P340984	
		Bentazon	0.012		ug/L	P340783	MS
		MCP	0.0020	U	ug/L	P340783	MS
		Triclopyr**	0.0040	U	ug/L	P340783	
		Imidacloprid	0.016		ug/L	P340783	MS
		Diuron	0.014		ug/L	P340783	
		Primidone**	0.0040	U	ug/L	P340783	
		Linuron	0.0040	U	ug/L	P340783	
		Acetaminophen**	0.0080	U	ug/L	P340783	
		Fenuron	0.0080	U	ug/L	P340783	
		Imazapyr**	0.093		ug/L	P340783	
		Carbamazepine**	4.0E-04	U	ug/L	P340783	
		Fluridone**	0.021		ug/L	P340783	
		Calcium	46.1		mg/L	P340962	
1971436	EPA 200.7 Rev. 4.4	Iron	650		ug/L	P340962	
		Magnesium	8.70		mg/L	P340962	
		Potassium	1.9		mg/L	P340962	
		Sodium	17.6		mg/L	P340962	
		Zinc	5.0	U	ug/L	P340962	
		Arsenic	0.84		ug/L	P340962	
	EPA 200.8 Rev. 5.4	Cadmium	0.020	U	ug/L	P340962	
		Chromium	0.40	U	ug/L	P340962	
		Copper	1.02		ug/L	P342450	
		Lead	0.22		ug/L	P341739	
		Nickel	1.07		ug/L	P341739	
		Silver	0.010	U	ug/L	P340962	

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: BIG POTTSBURG CR ~ 200 M N BOWDEN RD

Collection Date/Time: 03/01/2018 14:50

Field ID: 20030068

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1971402	EPA 180.1 Rev. 2.0	Turbidity	3.0		NTU	P340900	
	EPA 300.0 Rev. 2.1	Chloride	32		mg Cl/L	P341419	
		Sulfate	32		mg SO4/L	P341424	
		Color (true)	65		PCU	P340896	
	SM 2320 B-97	Total Alkalinity	98		mg CaCO3/L	P341336	
	SM 2540 C-97	TDS	211		mg/L	P341464	
	SM 2540 D-97	TSS	4	I	mg/L	P341372	
	SM 4500 F-C-97	Fluoride	0.13		mg F/L	P341527	
1971404	EPA 350.1 Rev. 2.0	Ammonia-N	0.044		mg N/L	P341234	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.55		mg N/L	P340966	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.12		mg N/L	P340948	
	EPA 365.1 Rev. 2.0	Total-P	0.085		mg P/L	P340994	
	SM 5310 B-00	Organic Carbon	12		mg C/L	P341045	
1971406	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.056		mg P/L	P340892	
1971434	EPA 8321B	2,4-D	0.0043	I	ug/L	P340883	
		Sucralose**	0.41		ug/L	P340984	
		Bentazon	0.018		ug/L	P340883	MS
		MCP	0.0020	U	ug/L	P340883	MS
		Triclopyr**	0.0040	U	ug/L	P340883	MS
		Imidacloprid	0.019		ug/L	P340883	MS
		Diuron	0.012		ug/L	P340883	
		Primidone**	0.0040	U	ug/L	P340883	
		Linuron	0.0040	U	ug/L	P340883	
		Acetaminophen**	0.0080	U	ug/L	P340883	
		Fenuron	0.0080	U	ug/L	P340883	
		Imazapyr**	0.10		ug/L	P340883	MS
		Carbamazepine**	4.0E-04	U	ug/L	P340883	
		Fluridone**	0.017		ug/L	P340883	
		Calcium	44.6		mg/L	P340962	
		Iron	550		ug/L	P340962	
1971437	EPA 200.7 Rev. 4.4	Magnesium	8.64		mg/L	P340962	
		Potassium	2.1		mg/L	P340962	
		Sodium	18.7		mg/L	P340962	
		Zinc	5.0	U	ug/L	P340962	
		Arsenic	0.74		ug/L	P340962	
		Cadmium	0.020	U	ug/L	P340962	
	EPA 200.8 Rev. 5.4	Chromium	0.40	U	ug/L	P340962	
		Copper	0.90		ug/L	P342450	
		Lead	0.12	I	ug/L	P341739	
		Nickel	1.05		ug/L	P341739	
		Silver	0.010	U	ug/L	P340962	

Ref. Method and Comment:

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

EPA 8321B: Fenuron was detected in the method blank slightly above the MDL.

Field ID: 20030872

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1971395	EPA 180.1 Rev. 2.0	Turbidity	0.95		NTU	P340900	
	EPA 300.0 Rev. 2.1	Chloride	35		mg Cl/L	P341419	
		Sulfate	31		mg SO4/L	P341424	
	SM 2120 B	Color (true)	11		PCU	P340896	
	SM 2320 B-97	Total Alkalinity	36		mg CaCO3/L	P341336	
	SM 2540 C-97	TDS	174		mg/L	P341464	
	SM 2540 D-97	TSS	2	I	mg/L	P341372	
	SM 4500 F-C-97	Fluoride	0.038	I	mg F/L	P341527	
1971397	EPA 350.1 Rev. 2.0	Ammonia-N	0.078		mg N/L	P341234	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.29		mg N/L	P340966	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.36		mg N/L	P340947	
	EPA 365.1 Rev. 2.0	Total-P	0.035		mg P/L	P340994	
	SM 5310 B-00	Organic Carbon	2.7		mg C/L	P341045	
1971399	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.017		mg P/L	P340891	
1971431	EPA 8321B	2,4-D	0.011		ug/L	P340783	
		Sucralose**	0.048		ug/L	P340984	
		Bentazon	0.0063		ug/L	P340783	MS
		MCP	0.0024	I	ug/L	P340783	MS
		Triclopyr**	0.0040	U	ug/L	P340783	
		Imidacloprid	0.014		ug/L	P340783	MS
		Diuron	0.0020	U	ug/L	P340783	
		Primidone**	0.0040	U	ug/L	P340783	
		Linuron	0.0040	U	ug/L	P340783	
		Acetaminophen**	0.0080	U	ug/L	P340783	
		Fenuron	0.0080	U	ug/L	P340783	
		Imazapyr**	0.0040	U	ug/L	P340783	
		Carbamazepine**	4.0E-04	U	ug/L	P340783	
		Fluridone**	8.0E-04	U	ug/L	P340783	

Ref. Method and Comment:

SM 2540 C-97: The reported result is consistent with the laboratory conductivity, 272 umhos/cm.

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

Sample Location: GREENFIELD CREEK AT ATLANTIC BLVD

Collection Date/Time: 03/01/2018 09:30

Field ID: 20030657

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1971396	EPA 180.1 Rev. 2.0	Turbidity	2.6		NTU	P340900	
	EPA 300.0 Rev. 2.1	Chloride	41		mg Cl/L	P341419	
		Sulfate	54		mg SO4/L	P341424	
	SM 2120 B	Color (true)	52	A	PCU	P340896	
	SM 2320 B-97	Total Alkalinity	102		mg CaCO3/L	P341336	
	SM 2540 C-97	TDS	281		mg/L	P341464	
	SM 2540 D-97	TSS	3	I	mg/L	P341372	
	SM 4500 F-C-97	Fluoride	0.090	I	mg F/L	P341527	
1971398	EPA 350.1 Rev. 2.0	Ammonia-N	0.14		mg N/L	P341234	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.92		mg N/L	P340966	

Field ID: 20030657

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1971398	EPA 353.2 Rev. 2.0	NO2NO3-N	0.26		mg N/L	P340947	
	EPA 365.1 Rev. 2.0	Total-P	0.058		mg P/L	P340994	
	SM 5310 B-00	Organic Carbon	13		mg C/L	P341045	
1971400	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.029		mg P/L	P340891	
1971432	EPA 8321B	2,4-D	0.027		ug/L	P340783	
		Sucralose**	0.069		ug/L	P340984	
		Bentazon	0.018		ug/L	P340783	MS
		MCP	0.0020	U	ug/L	P340783	MS
		Triclopyr**	0.0040	U	ug/L	P340783	
		Imidacloprid	0.011		ug/L	P340783	MS
		Diuron	0.0068	I	ug/L	P340783	
		Primidone**	0.0040	U	ug/L	P340783	
		Linuron	0.0040	U	ug/L	P340783	
		Acetaminophen**	0.0080	U	ug/L	P340783	
		Fenuron	0.0080	U	ug/L	P340783	
		Imazapyr**	0.014	I	ug/L	P340783	
		Carbamazepine**	4.0E-04	U	ug/L	P340783	
		Fluridone**	0.083		ug/L	P340783	

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: GREENFIELD CR. AT HODGES RD

Collection Date/Time: 03/01/2018 10:00

Field ID: G2NE1145

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1971435	EPA 8321B	2,4-D	0.0034	I	ug/L	P340883	
		Sucralose**	0.14		ug/L	P340984	
		Bentazon	0.025		ug/L	P340883	MS
		MCP	0.0020	U	ug/L	P340883	MS
		Triclopyr**	0.0040	U	ug/L	P340883	MS
		Imidacloprid	0.0042	I	ug/L	P340883	MS
		Diuron	0.0061	I	ug/L	P340883	
		Primidone**	0.0040	U	ug/L	P340883	
		Linuron	0.0040	U	ug/L	P340883	
		Acetaminophen**	0.0080	U	ug/L	P340883	
		Fenuron	0.0080	U	ug/L	P340883	
		Imazapyr**	0.0073	I	ug/L	P340883	MS
		Carbamazepine**	4.0E-04	U	ug/L	P340883	
		Fluridone**	0.017		ug/L	P340883	

Ref. Method and Comment:
EPA 8321B: Fenuron was detected in the method blank slightly above the MDL.

Sample Location: PUNCHEON BR @ GATE PKWY N

Collection Date/Time: 03/01/2018 13:10

Field ID: 20030867

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
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Field ID: 20030867

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1971407	EPA 180.1 Rev. 2.0	Turbidity	4.4		NTU	P340900	
	EPA 300.0 Rev. 2.1	Chloride	31		mg Cl/L	P341419	
		Sulfate	25		mg SO4/L	P341424	
	SM 2120 B	Color (true)	110		PCU	P340896	
	SM 2320 B-97	Total Alkalinity	28		mg CaCO3/L	P341336	
	SM 2540 C-97	TDS	140		mg/L	P341464	
	SM 2540 D-97	TSS	4	I	mg/L	P341372	
	SM 4500 F-C-97	Fluoride	0.038	I	mg F/L	P341527	
1971409	EPA 350.1 Rev. 2.0	Ammonia-N	0.099		mg N/L	P341234	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.62		mg N/L	P340967	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.035		mg N/L	P340948	
	EPA 365.1 Rev. 2.0	Total-P	0.030		mg P/L	P340994	
	SM 5310 B-00	Organic Carbon	16		mg C/L	P341045	
1971411	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.005	I	mg P/L	P340892	

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: STRAWBERRY CR AT LONE STAR ROAD

Collection Date/Time: 03/01/2018 10:50

Field ID: 20030754

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1971408	EPA 180.1 Rev. 2.0	Turbidity	2.4		NTU	P340900	
	EPA 300.0 Rev. 2.1	Chloride	30		mg Cl/L	P341419	
		Sulfate	24		mg SO4/L	P341424	
	SM 2120 B	Color (true)	86		PCU	P340896	
	SM 2320 B-97	Total Alkalinity	30		mg CaCO3/L	P341336	
	SM 2540 C-97	TDS	158	A	mg/L	P341465	
	SM 2540 D-97	TSS	3	IA	mg/L	P341373	
	SM 4500 F-C-97	Fluoride	0.044	I	mg F/L	P341527	
1971410	EPA 350.1 Rev. 2.0	Ammonia-N	0.12		mg N/L	P341258	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.69		mg N/L	P340967	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.11		mg N/L	P340948	
	EPA 365.1 Rev. 2.0	Total-P	0.052		mg P/L	P340994	
	SM 5310 B-00	Organic Carbon	14		mg C/L	P341045	
1971412	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.025		mg P/L	P340892	

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: P340900

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Quality Assurance Report Method Blank Results

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P340962

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: P340962

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

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P341739

Component	Result	Code	Units
Lead	0.050	U	ug/L
Nickel	0.20	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P342450

Component	Result	Code	Units
Copper	0.20	U	ug/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P341419

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P341424

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P341234

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P341258

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: P340966

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P340967

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P340947

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P340948

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P340994

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P340891

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P340892

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

Reference Method: EPA 8321B
Batch ID: P340783

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	4.0E-04	U	ug/L
Diuron	0.0020	U	ug/L
Fenuron	0.0080	U	ug/L
Fluridone	8.0E-04	U	ug/L
Imazapyr	0.0040	U	ug/L
Imidacloprid	0.0020	U	ug/L
Linuron	0.0040	U	ug/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B
Batch ID: P340783

Component	Result	Code	Units
MCP	0.0020	U	ug/L
Primidone	0.0040	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: EPA 8321B
Batch ID: P340883

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	4.0E-04	U	ug/L
Diuron	0.0020	U	ug/L
Fenuron	0.021	I	ug/L
Fluridone	8.0E-04	U	ug/L
Imazapyr	0.0040	U	ug/L
Imidacloprid	0.0020	U	ug/L
Linuron	0.0040	U	ug/L
MCP	0.0020	U	ug/L
Primidone	0.0040	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: EPA 8321B
Batch ID: P340984

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: SM 2120 B
Batch ID: P340896

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P341336

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

Reference Method: SM 2540 C-97
Batch ID: P341464

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P341465

Component	Result	Code	Units
TDS	15	U	mg/L

Quality Assurance Report Method Blank Results

Reference Method: SM 2540 D-97
Batch ID: P341372

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P341373

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P341527

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P341045

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: P340962

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	99.4		P	85 - 115
Iron	107		P	85 - 115
Magnesium	103		P	85 - 115
Potassium	102		P	85 - 115
Sodium	99.6		P	85 - 115
Zinc	98.8		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P340962

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Arsenic	103		P	85 - 115
Cadmium	106		P	85 - 115
Chromium	103		P	85 - 115
Silver	103		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P341739

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Lead	100		P	85 - 115
Nickel	101		P	85 - 115

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P342450

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Copper	107		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P341419

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P341424

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P341234

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P341258

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	99.6		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P340966

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P340967

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P340947

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: P340948

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P340994

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	97.4		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P340891

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P340892

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

Reference Method: EPA 8321B

Batch ID: P340783

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	85.1		P	40 - 150
Acetaminophen	107		P	30 - 150
Bentazon	105		P	30 - 150
Carbamazepine	87.8		P	40 - 150
Diuron	72.3		P	40 - 150
Fenuron	112		P	40 - 150
Fluridone	79.2		P	40 - 150
Imazapyr	83.7		P	40 - 150
Imidacloprid	96.7		P	40 - 160
Linuron	76.3		P	40 - 150
MCP	77.2		P	40 - 150
Primidone	113		P	40 - 150
Triclopyr	78.4		P	40 - 150

Reference Method: EPA 8321B

Batch ID: P340883

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	81.0		P	40 - 150
Acetaminophen	91.3		P	30 - 150
Bentazon	103		P	30 - 150
Carbamazepine	78.8		P	40 - 150
Diuron	65.0		P	40 - 150
Fenuron	95.5		P	40 - 150
Fluridone	66.0		P	40 - 150
Imazapyr	63.3		P	40 - 150
Imidacloprid	89.3		P	40 - 160
Linuron	73.6		P	40 - 150
MCP	83.2		P	40 - 150
Primidone	100		P	40 - 150
Triclopyr	77.5		P	40 - 150

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P340984

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	100		P	40 - 150

Reference Method: SM 2320 B-97
Batch ID: P341336

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.0		P	95 - 108

Reference Method: SM 4500 F-C-97
Batch ID: P341527

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.6		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P341045

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: P340962

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1971143	Calcium	99.8		P	80 - 120
1971143	Iron	107		P	80 - 120
1971143	Magnesium	104		P	80 - 120
1971143	Potassium	101		P	80 - 120
1971143	Sodium	100		P	80 - 120
1971143	Zinc	99.9		P	80 - 120
1971385	Calcium	101		P	80 - 120
1971385	Iron	108	109	P/P	80 - 120
1971385	Magnesium	101		P	80 - 120
1971385	Potassium	101		P	80 - 120
1971385	Sodium	100		P	80 - 120
1971385	Zinc	93.8	99.7	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P340962

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1971143	Arsenic	102		P	80 - 120
1971143	Cadmium	106		P	80 - 120
1971143	Chromium	98.7		P	80 - 120
1971143	Silver	101		P	80 - 120
1971385	Arsenic	100	101	P/P	80 - 120
1971385	Cadmium	104	104	P/P	80 - 120
1971385	Chromium	96.3	97.5	P/P	80 - 120

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P340962

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1971385	Silver	102	101	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P341739

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1970810	Lead	100	101	P/P	80 - 120
1970810	Nickel	96.2	96.4	P/P	80 - 120
1970843	Lead	101		P	80 - 120
1970843	Nickel	94.1		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P342450

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1970842	Copper	99.0		P	80 - 120
1978259	Copper	96.9	101	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P341419

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1971300	Chloride	96.9		P	90 - 110
1971301	Chloride	97.6		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P341424

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1971300	Sulfate	97.4		P	90 - 110
1971301	Sulfate	98.2		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P341234

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1971304	Ammonia-N	100	103	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P341258

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1971458	Ammonia-N	97.7	98.9	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P340966

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1971356	Kjeldahl Nitrogen	95.9	92.3	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P340967

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1971457	Kjeldahl Nitrogen	95.9	100	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P340947

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1971303	NO2NO3-N	101	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P340948

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1971403	NO2NO3-N	102	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P340994

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1971356	Total-P	93.2	97.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P340891

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1971307	O-Phosphate-P	94.8	96.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P340892

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1971411	O-Phosphate-P	94.3	95.8	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P340783

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1971130	2,4-D	51.6	49.8	P/P	40 - 150
1971130	Acetaminophen	121	131	P/P	30 - 150
1971130	Bentazon	20.6	22.8	F/F	30 - 150
1971130	Carbamazepine	94.5	107	P/P	40 - 150
1971130	Diuron	67.2	78.2	P/P	40 - 150
1971130	Fenuron	97.9	104	P/P	40 - 150
1971130	Fluridone	69.2	74.1	P/P	40 - 150
1971130	Imazapyr	65.9	82.1	P/P	40 - 150
1971130	Imidacloprid	140	165	P/F	40 - 160
1971130	Linuron	77.3	78.2	P/P	40 - 150
1971130	MCPP	40.9	32.9	P/F	40 - 150
1971130	Primidone	107	122	P/P	40 - 150
1971130	Triclopyr	52.4	42.9	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P340883

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1972049	2,4-D	44.4	44.3	P/P	40 - 150
1972049	Acetaminophen	119	117	P/P	30 - 150
1972049	Bentazon	27.9	28.9	F/F	30 - 150
1972049	Carbamazepine	74.3	75.3	P/P	40 - 150
1972049	Diuron	55.3	56.0	P/P	40 - 150
1972049	Fenuron	67.5	74.7	P/P	40 - 150
1972049	Fluridone	59.9	59.9	P/P	40 - 150
1972049	Imazapyr	52.1	37.9	P/F	40 - 150
1972049	Imidacloprid	164	161	F/F	40 - 160
1972049	Linuron	77.1	72.0	P/P	40 - 150
1972049	MCP	30.8	31.9	F/F	40 - 150
1972049	Primidone	81.4	91.4	P/P	40 - 150
1972049	Triclopyr	40.0	45.0	F/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P340984

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1971431	Sucralose	98.3	104	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P341527

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1971311	Fluoride	96.0	96.0	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P341045

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1971306	Organic Carbon	94.0	95.6	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P340900

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1971359	Turbidity	6.11	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P340962

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1971385	Calcium	1.22	Spike	P	0 - 20
1971385	Iron	1.24	Spike	P	0 - 20
1971385	Magnesium	1.74	Spike	P	0 - 20
1971385	Potassium	1.70	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P340962

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1971385	Sodium	1.39	Spike	P	0 - 20
1971385	Zinc	6.12	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P340962

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1971385	Arsenic	0.990	Spike	P	0 - 20
1971385	Cadmium	0.0614	Spike	P	0 - 20
1971385	Chromium	1.20	Spike	P	0 - 20
1971385	Silver	0.496	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P341739

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1970810	Lead	0.547	Spike	P	0 - 20
1970810	Nickel	0.199	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P342450

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1978259	Copper	3.82	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P341419

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1971300	Chloride	3.92	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P341424

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1971300	Sulfate	5.09	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P341234

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1971304	Ammonia-N	2.02	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P341258

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1971458	Ammonia-N	0.973	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P340966

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1971356	Kjeldahl Nitrogen	2.67	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P340967

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1971457	Kjeldahl Nitrogen	2.46	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P340947

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1971303	NO2NO3-N	1.47	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P340948

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1971403	NO2NO3-N	0.258	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P340994

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1971356	Total-P	2.54	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P340891

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1971307	O-Phosphate-P	1.67	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P340892

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1971411	O-Phosphate-P	1.50	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P340783

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1971130	2,4-D	3.52	Spike	P	0 - 30
1971130	Acetaminophen	7.80	Spike	P	0 - 30
1971130	Bentazon	9.45	Spike	P	0 - 30
1971130	Carbamazepine	12.1	Spike	P	0 - 30
1971130	Diuron	15.2	Spike	P	0 - 30
1971130	Fenuron	5.63	Spike	P	0 - 30
1971130	Fluridone	6.94	Spike	P	0 - 30
1971130	Imazapyr	19.3	Spike	P	0 - 30
1971130	Imidacloprid	11.9	Spike	P	0 - 30
1971130	Linuron	1.06	Spike	P	0 - 30
1971130	MCP	21.5	Spike	P	0 - 30
1971130	Primidone	13.5	Spike	P	0 - 30
1971130	Triclopyr	19.8	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P340883

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1972049	2,4-D	0.162	Spike	P	0 - 30
1972049	Acetaminophen	2.37	Spike	P	0 - 30
1972049	Bentazon	2.71	Spike	P	0 - 30
1972049	Carbamazepine	1.32	Spike	P	0 - 30
1972049	Diuron	1.26	Spike	P	0 - 30
1972049	Fenuron	10.2	Spike	P	0 - 30
1972049	Fluridone	0.0788	Spike	P	0 - 30
1972049	Imazapyr	13.5	Spike	P	0 - 30
1972049	Imidacloprid	1.62	Spike	P	0 - 30
1972049	Linuron	6.78	Spike	P	0 - 30
1972049	MCP	3.48	Spike	P	0 - 30
1972049	Primidone	11.7	Spike	P	0 - 30
1972049	Triclopyr	11.9	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P340984

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1971431	Sucralose	5.28	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P340896

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1971396	Color (true)	4.90	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2320 B-97
Batch ID: P341336

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1971311	Total Alkalinity	0.476	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P341464

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1971302	TDS	5.05	Sample	P	0 - 10

Reference Method: SM 2540 C-97
Batch ID: P341465

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1971408	TDS	6.33	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P341527

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1971311	Fluoride	0.0	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P341045

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1971306	Organic Carbon	0.929	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: 1971431
Field Sample ID: 20030872

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	50.2	P	30 - 160
EPA 8321B	Acetaminophen-d4	101	P	30 - 160
EPA 8321B	Carbamazepine-d10	84.0	P	30 - 160
EPA 8321B	Diuron-d6	67.9	P	30 - 160
EPA 8321B	Primidone-d5	95.6	P	30 - 160
EPA 8321B	Sucralose-d6	100	P	40 - 160

Quality Assurance Report Surrogates

Lab Sample ID: 1971432
Field Sample ID: 20030657

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	45.6	P	30 - 160
EPA 8321B	Acetaminophen-d4	133	P	30 - 160
EPA 8321B	Carbamazepine-d10	79.8	P	30 - 160
EPA 8321B	Diuron-d6	67.6	P	30 - 160
EPA 8321B	Primidone-d5	101	P	30 - 160
EPA 8321B	Sucralose-d6	125	P	40 - 160

Lab Sample ID: 1971433
Field Sample ID: 20030064

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	53.8	P	30 - 160
EPA 8321B	Acetaminophen-d4	133	P	30 - 160
EPA 8321B	Carbamazepine-d10	82.4	P	30 - 160
EPA 8321B	Diuron-d6	68.2	P	30 - 160
EPA 8321B	Primidone-d5	101	P	30 - 160
EPA 8321B	Sucralose-d6	117	P	40 - 160

Lab Sample ID: 1971434
Field Sample ID: 20030068

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	48.3	P	30 - 160
EPA 8321B	Acetaminophen-d4	121	P	30 - 160
EPA 8321B	Carbamazepine-d10	71.5	P	30 - 160
EPA 8321B	Diuron-d6	64.7	P	30 - 160
EPA 8321B	Primidone-d5	103	P	30 - 160
EPA 8321B	Sucralose-d6	109	P	40 - 160

Lab Sample ID: 1971435
Field Sample ID: G2NE1145

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	49.4	P	30 - 160
EPA 8321B	Acetaminophen-d4	114	P	30 - 160
EPA 8321B	Carbamazepine-d10	69.6	P	30 - 160
EPA 8321B	Diuron-d6	59.5	P	30 - 160
EPA 8321B	Primidone-d5	88.6	P	30 - 160
EPA 8321B	Sucralose-d6	124	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A82409
Included Lab Sample IDs: 1971399, 1971400, 1971405, 1971406, 1971411, 1971412

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	100	100	P/P	90 - 110
O-Phosphate-P	101	100	P/P	90 - 110
O-Phosphate-P	99.0	99.9	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 2120 B

Run ID: A82410

Included Lab Sample IDs: 1971395, 1971396, 1971401, 1971402, 1971407, 1971408

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	99.3	99.3	P/P	85 - 115

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A82411

Included Lab Sample IDs: 1971395, 1971396, 1971401, 1971402, 1971407, 1971408

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A82428

Included Lab Sample IDs: 1971397, 1971398, 1971403, 1971404, 1971409, 1971410

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A82464

Included Lab Sample IDs: 1971398, 1971403, 1971404

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

Reference Method: SM 5310 B-00

Run ID: A82470

Included Lab Sample IDs: 1971397, 1971398, 1971403, 1971404, 1971409, 1971410

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.2	95.7	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A82472

Included Lab Sample IDs: 1971397, 1971409, 1971410

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A82477

Included Lab Sample IDs: 1971397, 1971398, 1971403, 1971404, 1971409, 1971410

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	105	99.0	P/P	90 - 110
Kjeldahl Nitrogen	107	105	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A82499

Included Lab Sample IDs: 1971431, 1971432, 1971433, 1971434, 1971435

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

Reference Method: EPA 8321B

Run ID: A82499

Included Lab Sample IDs: 1971431, 1971432, 1971433, 1971434, 1971435

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	100	100	P/P	60 - 150
Sucralose	100	100	P/P	60 - 150

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A82509

Included Lab Sample IDs: 1971395, 1971396, 1971401, 1971402, 1971407, 1971408

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	95.8	100	P/P	90 - 110
Sulfate	96.8	102	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A82510

Included Lab Sample IDs: 1971397, 1971398, 1971403, 1971404, 1971409

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

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A82512

Included Lab Sample IDs: 1971436, 1971437

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	103	102	P/P	90 - 110
Iron	104	102	P/P	90 - 110
Magnesium	105	103	P/P	90 - 110
Potassium	103	103	P/P	90 - 110
Sodium	102	101	P/P	90 - 110
Zinc	100	102	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A82515

Included Lab Sample IDs: 1971410

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

Reference Method: EPA 8321B

Run ID: A82534

Included Lab Sample IDs: 1971431, 1971432, 1971433

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	93.6	95.6	P/P	50 - 150
Acetaminophen	99.0	102	P/P	60 - 150
Bentazon	103	89.9	P/P	50 - 150
Carbamazepine	118	108	P/P	60 - 150
Diuron	118	104	P/P	60 - 150
Fenuron	99.8	99.0	P/P	60 - 150
Fluridone	108	120	P/P	60 - 160
Imazapyr	94.4	94.0	P/P	50 - 150
Imidacloprid	108	112	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A82534

Included Lab Sample IDs: 1971431, 1971432, 1971433

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Linuron	109	102	P/P	60 - 150
MCP	104	91.8	P/P	50 - 150
Primidone	110	116	P/P	60 - 150
Triclopyr	105	107	P/P	50 - 150

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A82540

Included Lab Sample IDs: 1971436, 1971437

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	98.3	97.8	P/P	90 - 110
Cadmium	99.2	99.0	P/P	90 - 110
Chromium	95.0	94.3	P/P	90 - 110
Silver	101	101	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A82543

Included Lab Sample IDs: 1971395, 1971396, 1971401, 1971402, 1971407, 1971408

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	99.4	96.7	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A82580

Included Lab Sample IDs: 1971434, 1971435

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	92.7	93.1	P/P	50 - 150
Acetaminophen	93.6	98.4	P/P	60 - 150
Bentazon	139	127	P/P	50 - 150
Carbamazepine	102	97.6	P/P	60 - 150
Diuron	102	88.6	P/P	60 - 150
Fenuron	94.7	95.6	P/P	60 - 150
Fluridone	109	109	P/P	60 - 160
Imazapyr	79.4	79.8	P/P	50 - 150
Imidacloprid	105	91.5	P/P	60 - 150
Linuron	112	107	P/P	60 - 150
MCP	94.3	99.2	P/P	50 - 150
Primidone	92.8	97.2	P/P	60 - 150
Triclopyr	83.7	96.4	P/P	50 - 150

Reference Method: SM 4500 F-C-97

Run ID: A82604

Included Lab Sample IDs: 1971395, 1971396, 1971401, 1971402, 1971407, 1971408

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.0	101	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A82878
Included Lab Sample IDs: 1971436, 1971437

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Lead	95.5	95.4	P/P	90 - 110
Nickel	94.2	94.6	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A83056
Included Lab Sample IDs: 1971436, 1971437

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Copper	102	103	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						6.11	
EPA 200.7 Rev. 4.4	Calcium	99.4	99.8	101				1.22
	Iron	107	107	108	109			1.24
	Magnesium	103	104	101				1.74
	Potassium	102	101	101				1.70
	Sodium	99.6	100	100				1.39
	Zinc	98.8	99.9	93.8	99.7			6.12
EPA 200.8 Rev. 5.4	Arsenic	103	102	100	101			0.990
	Cadmium	106	106	104	104			0.0614
	Chromium	103	98.7	96.3	97.5			1.20
	Copper	107	99.0	96.9	101			3.82
	Lead	100	100	101	101			0.547
	Nickel	101	96.2	96.4	94.1			0.199
	Silver	103	101	102	101			0.496
EPA 300.0 Rev. 2.1	Chloride	97.1	96.9	97.6			3.92	
	Sulfate	98.0	97.4	98.2			5.09	
EPA 350.1 Rev. 2.0	Ammonia-N	100	100	103				2.02
	Ammonia-N	99.6	97.7	98.9				0.973
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	104	95.9	92.3				2.67
	Kjeldahl Nitrogen	102	95.9	100				2.46
EPA 353.2 Rev. 2.0	NO2NO3-N	100	101	102				1.47
	NO2NO3-N	100	102	102				0.258
EPA 365.1 Rev. 2.0	Total-P	97.4	93.2	97.2				2.54
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	96.9	94.8	96.4				1.67
	O-Phosphate-P	102	94.3	95.8				1.50
EPA 8321B	2,4-D	85.1	51.6	49.8				3.52
	2,4-D	81.0	44.4	44.3				0.162
	Acetaminophen	107	121	131				7.80
	Acetaminophen	91.3	119	117				2.37
	Bentazon	105	20.6	22.8				9.45
	Bentazon	103	27.9	28.9				2.71

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
EPA 8321B	Carbamazepine	87.8	94.5	107		12.1
	Carbamazepine	78.8	74.3	75.3		1.32
	Diuron	72.3	67.2	78.2		15.2
	Diuron	65.0	55.3	56.0		1.26
	Fenuron	112	97.9	104		5.63
	Fenuron	95.5	67.5	74.7		10.2
	Fluridone	79.2	69.2	74.1		6.94
	Fluridone	66.0	59.9	59.9		0.0788
	Imazapyr	83.7	65.9	82.1		19.3
	Imazapyr	63.3	52.1	37.9		13.5
	Imidacloprid	96.7	140	165		11.9
	Imidacloprid	89.3	164	161		1.62
	Linuron	76.3	77.3	78.2		1.06
	Linuron	73.6	77.1	72.0		6.78
	MCPP	77.2	40.9	32.9		21.5
	MCPP	83.2	30.8	31.9		3.48
	Primidone	113	107	122		13.5
	Primidone	100	81.4	91.4		11.7
	Sucralose	100	98.3	104		5.28
	Triclopyr	78.4	52.4	42.9		19.8
	Triclopyr	77.5	40.0	45.0		11.9
SM 2120 B	Color (true)				4.90	
SM 2320 B-97	Total Alkalinity	99.0			0.476	
SM 2540 C-97	TDS				5.05	
	TDS				6.33	
SM 4500 F-C-97	Fluoride	97.6	96.0	96.0		0.0
SM 5310 B-00	Organic Carbon	95.6	94.0	95.6		0.929

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1971395, 1971396, 1971401, 1971402, 1971407, 1971408
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	1971436, 1971437
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	1971436, 1971437
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1971395, 1971396, 1971401, 1971402, 1971407, 1971408
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1971395, 1971396, 1971401, 1971402, 1971407, 1971408
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1971397, 1971398, 1971403, 1971404, 1971409, 1971410
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1971397, 1971398, 1971403, 1971404, 1971409, 1971410
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1971397, 1971398, 1971403, 1971404, 1971409, 1971410
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1971397, 1971398, 1971403, 1971404, 1971409, 1971410
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1971399, 1971400, 1971405, 1971406, 1971411, 1971412
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	1971431, 1971432, 1971433, 1971434, 1971435
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	1971431, 1971432, 1971433, 1971434, 1971435

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
SM 2120 B / E31780	True Color measured at 450 nm	1971395, 1971396, 1971401, 1971402, 1971407, 1971408
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1971395, 1971396, 1971401, 1971402, 1971407, 1971408
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1971395, 1971396, 1971401, 1971402, 1971407, 1971408
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1971395, 1971396, 1971401, 1971402, 1971407, 1971408
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1971395, 1971396, 1971401, 1971402, 1971407, 1971408
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1971397, 1971398, 1971403, 1971404, 1971409, 1971410

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	03/02/2018			03/02/2018 14:59	Tanya Welborn	1971395, 1971396, 1971401, 1971402, 1971407, 1971408
EPA 200.7 Rev. 4.4	03/02/2018	03/05/2018	Elliott D. Healy	03/08/2018	Betina Topolski	1971436, 1971437
EPA 200.8 Rev. 5.4	03/02/2018	03/05/2018	Elliott D. Healy	03/09/2018	Nadine Brooks	1971436, 1971437
	03/02/2018	03/19/2018	Elliott D. Healy	03/27/2018	Robert K Palmer	1971436, 1971437
	03/02/2018	03/29/2018	Elliott D. Healy	04/03/2018	Robert K Palmer	1971436, 1971437
EPA 300.0 Rev. 2.1	03/02/2018			03/08/2018	Julia Storbeck	1971395, 1971396, 1971401, 1971402, 1971407, 1971408
EPA 350.1 Rev. 2.0	03/02/2018			03/08/2018	Ping Hua	1971397, 1971398, 1971403, 1971404, 1971409, 1971410
EPA 351.2 Rev. 2.0	03/02/2018	03/06/2018	Adrian Shelby	03/07/2018	Joseph Suarez	1971397, 1971398, 1971403, 1971404, 1971409, 1971410
EPA 353.2 Rev. 2.0	03/02/2018			03/05/2018	Lauren Bottorf	1971397, 1971398, 1971403, 1971404, 1971409, 1971410
EPA 365.1 Rev. 2.0	03/02/2018	03/06/2018	Sima Feizi	03/07/2018	Beverly Y. Sanders	1971397, 1971398, 1971403, 1971404, 1971409, 1971410
EPA 365.1 Rev. 2.0 dissolved	03/02/2018			03/02/2018 15:15	Julia Storbeck	1971411
	03/02/2018			03/02/2018 15:42	Julia Storbeck	1971399
	03/02/2018			03/02/2018 15:43	Julia Storbeck	1971400
	03/02/2018			03/02/2018 15:48	Julia Storbeck	1971405
	03/02/2018			03/02/2018 15:49	Julia Storbeck	1971406, 1971412
EPA 8321B	03/02/2018	03/05/2018	Hoor Shaik	03/06/2018	Julie Michelle Frank	1971431, 1971432, 1971433
	03/02/2018	03/05/2018	Hoor Shaik	03/07/2018	Julie Michelle Frank	1971431, 1971432, 1971433
	03/02/2018	03/07/2018	Hoor Shaik	03/08/2018	Julie Michelle Frank	1971434, 1971435
	03/02/2018	03/07/2018	Hoor Shaik	03/09/2018	Julie Michelle Frank	1971434, 1971435
	03/02/2018	03/07/2018	Julie Michelle Frank	03/07/2018	Juyoung Kim	1971431, 1971432, 1971433, 1971434, 1971435
SM 2120 B	03/02/2018			03/02/2018 16:22	Tanya Welborn	1971395
	03/02/2018			03/02/2018 16:23	Tanya Welborn	1971396
	03/02/2018			03/02/2018 16:24	Tanya Welborn	1971401
	03/02/2018			03/02/2018 16:25	Tanya Welborn	1971402
	03/02/2018			03/02/2018 16:26	Tanya Welborn	1971407, 1971408
SM 2320 B-97	03/02/2018			03/09/2018	Lauren Bottorf	1971395, 1971396, 1971401, 1971402, 1971407, 1971408
SM 2540 C-97	03/02/2018			03/07/2018	Yijie Li	1971395, 1971396, 1971401, 1971402, 1971407, 1971408
SM 2540 D-97	03/02/2018			03/07/2018	Yijie Li	1971395, 1971396, 1971401, 1971402, 1971407, 1971408
SM 4500 F-C-97	03/02/2018			03/14/2018	Dale L. Simmons	1971395, 1971396, 1971401, 1971402, 1971407, 1971408
SM 5310 B-00	03/02/2018			03/06/2018	Megan Treadwell	1971397, 1971398, 1971403
	03/02/2018			03/07/2018	Megan Treadwell	1971404, 1971409, 1971410