

Chemical Analysis Report

NE-DIST-2017-11-15-01

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

Event Description: **LSJR Bmap**
Request ID: **RQ-2017-11-13-25**
Customer: **NE-DIST**
Project ID: **SMP**

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Certified by: Thekkekalathil Chandrasekhar, Chemist Administrator Date Certified: 07-DEC-2017 13:23



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: TROUT RIVER @ OLD KINGS RD

Collection Date/Time: 11/14/2017 11:00

Field ID: G2NE0761

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1946455	EPA 8321B	Sucralose**	0.14		ug/L	P335617	
	USGS O-2060-01	2,4-D	0.0020	U	ug/L	P335331	
		Diuron	8.0E-04	U	ug/L	P335331	MS
		Fenuron	0.0080	U	ug/L	P335331	
		Imidacloprid	8.0E-04	U	ug/L	P335331	
		Bentazon	8.0E-04	U	ug/L	P335331	
		Linuron	0.0040	U	ug/L	P335331	
		Acetaminophen**	0.0080	U	ug/L	P335331	
		MCP	0.0020	U	ug/L	P335331	MS
		Carbamazepine**	4.0E-04	U	ug/L	P335331	
		Triclopyr**	0.0040	U	ug/L	P335331	MS
		Primidone**	0.0040	U	ug/L	P335331	
		Fluridone**	0.0012	I	ug/L	P335331	

Ref. Method and Comment:

USGS O-2060-01: Fenuron was detected in the method blank slightly above the MDL.

Sample Location: TROUT RIVER @ DINSMORE BT. RMP

Collection Date/Time: 11/14/2017 10:40

Field ID: G2NE0130

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1946456	EPA 8321B	Sucralose**	0.27		ug/L	P335952	
	USGS O-2060-01	2,4-D	0.013		ug/L	P335331	
		Diuron	8.4E-04	I	ug/L	P335331	MS
		Fenuron	0.0080	U	ug/L	P335331	
		Imidacloprid	0.0076		ug/L	P335331	
		Bentazon	0.0022	I	ug/L	P335331	
		Linuron	0.0040	U	ug/L	P335331	
		Acetaminophen**	0.0080	U	ug/L	P335331	
		MCP	0.0020	U	ug/L	P335331	MS
		Carbamazepine**	4.0E-04	U	ug/L	P335331	
		Triclopyr**	0.0040	U	ug/L	P335331	MS
		Primidone**	0.0040	U	ug/L	P335331	
		Fluridone**	9.5E-04	I	ug/L	P335331	

Ref. Method and Comment:

USGS O-2060-01: Fenuron was detected in the method blank slightly above the MDL.

Sample Location: MONCRIEF CREEK @ 21ST

Collection Date/Time: 11/14/2017 11:25

Field ID: G2NE0905

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1946457	EPA 8321B	Sucralose**	0.42		ug/L	P335617	
	USGS O-2060-01	2,4-D	0.0040	I	ug/L	P335331	
		Diuron	0.043		ug/L	P335331	MS
		Fenuron	0.0080	U	ug/L	P335331	
		Imidacloprid	0.036		ug/L	P335331	

Field ID: G2NE0905

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1946457	USGS O-2060-01	Bentazon	0.0054		ug/L	P335331	
		Linuron	0.0040	U	ug/L	P335331	
		Acetaminophen**	0.050		ug/L	P335331	
		MCP	0.0020	U	ug/L	P335331	MS
		Carbamazepine**	4.6E-04	I	ug/L	P335331	
		Triclopyr**	0.0040	U	ug/L	P335331	MS
		Primidone**	0.0040	U	ug/L	P335331	
		Fluridone**	4.6E-04	I	ug/L	P335331	

Ref. Method and Comment:
USGS O-2060-01: Fenuron was detected in the method blank slightly above the MDL.

Sample Location: MONCRIEF CREEK @ MONCRIEF

Collection Date/Time: 11/14/2017 12:05

Field ID: G2NE0734

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1946458	EPA 8321B	Sucralose**	0.18		ug/L	P335617	
	USGS O-2060-01	2,4-D	0.0020	U	ug/L	P335331	
		Diuron	0.0060		ug/L	P335331	MS
		Fenuron	0.0080	U	ug/L	P335331	
		Imidacloprid	0.012		ug/L	P335331	
		Bentazon	0.0028	I	ug/L	P335331	
		Linuron	0.0040	U	ug/L	P335331	
		Acetaminophen**	0.0080	U	ug/L	P335331	
		MCP	0.0020	U	ug/L	P335331	MS
		Carbamazepine**	6.8E-04	I	ug/L	P335331	
		Triclopyr**	0.0040	U	ug/L	P335331	MS
		Primidone**	0.0040	U	ug/L	P335331	
		Fluridone**	4.0E-04	U	ug/L	P335331	

Ref. Method and Comment:
USGS O-2060-01: Fenuron was detected in the method blank slightly above the MDL.

Sample Location: MONCRIEF CREEK @ 33rd ST

Collection Date/Time: 11/14/2017 11:45

Field ID: G2NE0323

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1946416	EPA 180.1 Rev. 2.0	Turbidity	7.3	A	NTU	P335361	
	EPA 300.0 Rev. 2.1	Chloride	22		mg Cl/L	P335409	
		Sulfate	57		mg SO4/L	P335411	
		Color (true)	19		PCU	P335394	
	SM 2320 B-97	Total Alkalinity	154		mg CaCO3/L	P335627	
	SM 2540 C-97	TDS	291		mg/L	P335830	
	SM 2540 D-97	TSS	8	I	mg/L	P335837	
	SM 4500 F-C-97	Fluoride	0.25		mg F/L	P335631	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.027		mg N/L	P336209	
		Kjeldahl Nitrogen	0.59		mg N/L	P335947	
1946417	EPA 353.2 Rev. 2.0	NO2NO3-N	0.033		mg N/L	P335889	
	EPA 365.1 Rev. 2.0	Total-P	0.058		mg P/L	P335670	

Field ID: G2NE0323

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1946417	SM 5310 B-00	Organic Carbon	6.3		mg C/L	P335862	
1946418	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.005	I	mg P/L	P335390	
1946454	EPA 8321B	Sucralose**	0.25		ug/L	P335617	
	USGS O-2060-01	2,4-D	0.0020	U	ug/L	P335331	
		Diuron	0.012		ug/L	P335331	MS
		Fenuron	0.0080	U	ug/L	P335331	
		Imidacloprid	0.016		ug/L	P335331	
		Bentazon	0.0036		ug/L	P335331	
		Linuron	0.0040	U	ug/L	P335331	
		Acetaminophen**	0.0080	U	ug/L	P335331	
		MCPD	0.0020	U	ug/L	P335331	MS
		Carbamazepine**	4.0E-04	U	ug/L	P335331	
		Triclopyr**	0.0040	U	ug/L	P335331	MS
		Primidone**	0.0040	U	ug/L	P335331	
		Fluridone**	8.2E-04	I	ug/L	P335331	
1946459	EPA 200.7 Rev. 4.4	Calcium	64.7		mg/L	P335662	
		Iron	640		ug/L	P335662	
		Magnesium	11.2		mg/L	P335662	
		Potassium	2.6		mg/L	P335662	
		Sodium	19.0		mg/L	P335662	
		Zinc	5.6	I	ug/L	P335662	
	EPA 200.8 Rev. 5.4	Arsenic	1.38		ug/L	P335662	
		Cadmium	0.020	U	ug/L	P335662	
		Chromium	0.40	U	ug/L	P335662	
		Copper	1.13		ug/L	P335662	
		Lead	0.89		ug/L	P335662	
		Nickel	0.76	I	ug/L	P335662	
		Silver	0.010	U	ug/L	P335662	

Ref. Method and Comment:

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

SM 4500 F-C-97: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

SM 5310 B-00: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

USGS O-2060-01: Fenuron was detected in the method blank slightly above the MDL.

Sample Location: TERRAPIN CREEK @ BLASSIUS

Collection Date/Time: 11/14/2017 09:50

Field ID: G2NE0497

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1946410	EPA 180.1 Rev. 2.0	Turbidity	5.6		NTU	P335360	
	EPA 300.0 Rev. 2.1	Chloride	35		mg Cl/L	P335409	
		Sulfate	33		mg SO4/L	P335411	
	SM 2120 B	Color (true)	55		PCU	P335394	
	SM 2320 B-97	Total Alkalinity	54		mg CaCO3/L	P335627	
	SM 2540 C-97	TDS	163		mg/L	P335829	
	SM 2540 D-97	TSS	4	I	mg/L	P335836	
	SM 4500 F-C-97	Fluoride	0.095	I	mg F/L	P335631	

Field ID: G2NE0497

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1946412	EPA 350.1 Rev. 2.0	Ammonia-N	0.049		mg N/L	P336209	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.54		mg N/L	P335947	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.099		mg N/L	P335889	
	EPA 365.1 Rev. 2.0	Total-P	0.068		mg P/L	P335670	
	SM 5310 B-00	Organic Carbon	7.1		mg C/L	P335862	
1946414	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.026		mg P/L	P335390	
1946452	EPA 8321B	Sucralose**	0.067		ug/L	P335143	
	USGS O-2060-01	2,4-D	0.0023	I	ug/L	P335331	
		Diuron	0.0027	I	ug/L	P335331	MS
		Fenuron	0.010	U	ug/L	P335331	
		Imidacloprid	0.078		ug/L	P335331	
		Bentazon	0.022		ug/L	P335331	
		Linuron	0.0050	U	ug/L	P335331	
		Acetaminophen**	0.010	U	ug/L	P335331	
		MCP	0.0020	U	ug/L	P335331	MS
		Carbamazepine**	5.0E-04	U	ug/L	P335331	
		Triclopyr**	0.0040	U	ug/L	P335331	MS
		Primidone**	0.0050	U	ug/L	P335331	
		Fluridone**	0.46		ug/L	P335331	

Ref. Method and Comment:

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

SM 4500 F-C-97: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

SM 5310 B-00: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

USGS O-2060-01: Fenuron was detected in the method blank slightly above the MDL.

Sample Location: NW TRIB OPEN CR. @ HODGES BLVD

Collection Date/Time: 11/14/2017 09:05

Field ID: G2NE0856

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1946411	EPA 180.1 Rev. 2.0	Turbidity	3.4		NTU	P335360	
	EPA 300.0 Rev. 2.1	Chloride	38		mg Cl/L	P335409	
		Sulfate	68		mg SO4/L	P335411	
		Color (true)	53	A	PCU	P335395	
	SM 2320 B-97	Total Alkalinity	68		mg CaCO3/L	P335627	
	SM 2540 C-97	TDS	255	A	mg/L	P335830	
	SM 2540 D-97	TSS	3	IA	mg/L	P335837	
	SM 4500 F-C-97	Fluoride	0.098	I	mg F/L	P335631	
1946413	EPA 350.1 Rev. 2.0	Ammonia-N	0.098		mg N/L	P336209	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.64		mg N/L	P335947	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.31		mg N/L	P335889	
	EPA 365.1 Rev. 2.0	Total-P	0.054		mg P/L	P335670	
	SM 5310 B-00	Organic Carbon	11		mg C/L	P335862	
1946415	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.023		mg P/L	P335390	
1946453	EPA 8321B	Sucralose**	0.55		ug/L	P335617	
	USGS O-2060-01	2,4-D	0.0067	IQ	ug/L	P336263	
		Diuron	8.0E-04	U	ug/L	P335331	MS

Field ID: G2NE0856

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1946453	USGS O-2060-01	Fenuron	0.0080	U	ug/L	P335331	
		Imidacloprid	8.0E-04	U	ug/L	P335331	
		Bentazon	0.043	Q	ug/L	P336263	
		Linuron	0.0040	U	ug/L	P335331	
		Acetaminophen**	0.0080	U	ug/L	P335331	
		MCP	0.0020	UQ	ug/L	P336263	
		Carbamazepine**	4.0E-04	U	ug/L	P335331	
		Triclopyr**	0.0040	UQ	ug/L	P336263	
		Primidone**	0.0040	U	ug/L	P335331	
		Fluridone**	0.0046		ug/L	P335331	

Ref. Method and Comment:

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

SM 4500 F-C-97: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

SM 5310 B-00: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

USGS O-2060-01: Sample required re-extraction beyond normal holding time due to reagent performance inconsistencies.

USGS O-2060-01: Fenuron was detected in the method blank slightly above the MDL.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P335360

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P335361

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P335662

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: P335662

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P335409

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P335411

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P336209

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P335947

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P335889

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P335670

Component	Result	Code	Units
Total-P	0.005	U	mg P/L

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P335390

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

Reference Method: EPA 8321B
Batch ID: P335143

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: EPA 8321B
Batch ID: P335617

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B
Batch ID: P335952

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: SM 2120 B
Batch ID: P335394

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B
Batch ID: P335395

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P335627

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

Reference Method: SM 2540 C-97
Batch ID: P335829

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P335830

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P335836

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P335837

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P335631

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Quality Assurance Report Method Blank Results

Reference Method: SM 5310 B-00
 Batch ID: P335862

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

Reference Method: USGS O-2060-01
 Batch ID: P335331

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	8.0E-04	U	ug/L
Fenuron	0.023	I	ug/L
Fluridone	4.0E-04	U	ug/L
Imidacloprid	8.0E-04	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: USGS O-2060-01
 Batch ID: P336263

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
Bentazon	8.0E-04	U	ug/L
MCP	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 200.7 Rev. 4.4
 Batch ID: P335662

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	103		P	85 - 115
Iron	104		P	85 - 115
Magnesium	103		P	85 - 115
Potassium	98.8		P	85 - 115
Sodium	101		P	85 - 115
Zinc	99.3		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
 Batch ID: P335662

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Arsenic	101		P	85 - 115
Cadmium	97.6		P	85 - 115
Chromium	96.6		P	85 - 115
Copper	99.6		P	85 - 115
Lead	91.3		P	85 - 115

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P335662

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Nickel	99.9		P	85 - 115
Silver	98.4		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P335409

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P335411

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P336209

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P335947

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P335889

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P335670

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	98.8		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P335390

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	97.9		P	90 - 110

Reference Method: EPA 8321B
Batch ID: P335143

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	122		P	40 - 150

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P335617

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	118		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P335952

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	80.4		P	40 - 150

Reference Method: SM 2320 B-97
Batch ID: P335627

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	95 - 108

Reference Method: SM 4500 F-C-97
Batch ID: P335631

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	101		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P335862

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

Reference Method: USGS O-2060-01
Batch ID: P335331

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	67.8	71.5	P/P	40 - 150
Acetaminophen	112	115	P/P	30 - 150
Bentazon	61.6	62.1	P/P	30 - 150
Carbamazepine	129	130	P/P	40 - 150
Diuron	105	104	P/P	40 - 150
Fenuron	115	119	P/P	40 - 150
Fluridone	129	133	P/P	40 - 150
Imidacloprid	101	106	P/P	40 - 160
Linuron	101	108	P/P	40 - 150
MCPP	71.6	76.1	P/P	40 - 150
Primidone	102	97.6	P/P	40 - 150
Triclopyr	72.4	79.7	P/P	40 - 150

Reference Method: USGS O-2060-01
Batch ID: P336263

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	113		P	40 - 150
Bentazon	83.2		P	30 - 150
MCPP	111		P	40 - 150
Triclopyr	107		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P335662

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1945810	Calcium	101		P	80 - 120
1945810	Iron	103		P	80 - 120
1945810	Magnesium	103		P	80 - 120
1945810	Potassium	95.4		P	80 - 120
1945810	Sodium	97.8		P	80 - 120
1945810	Zinc	98.4		P	80 - 120
1946215	Calcium	103		P	80 - 120
1946215	Iron	101	104	P/P	80 - 120
1946215	Magnesium	101		P	80 - 120
1946215	Potassium	96.7	100	P/P	80 - 120
1946215	Sodium	98.2	102	P/P	80 - 120
1946215	Zinc	95.6	97.1	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P335662

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1945810	Arsenic	104		P	80 - 120
1945810	Cadmium	103		P	80 - 120
1945810	Chromium	100		P	80 - 120
1945810	Copper	101		P	80 - 120
1945810	Lead	92.1		P	80 - 120
1945810	Nickel	101		P	80 - 120
1945810	Silver	102		P	80 - 120
1946215	Arsenic	102	99.6	P/P	80 - 120
1946215	Cadmium	101	98.7	P/P	80 - 120
1946215	Chromium	97.3	95.7	P/P	80 - 120
1946215	Copper	95.4	94.0	P/P	80 - 120
1946215	Lead	92.4	91.6	P/P	80 - 120
1946215	Nickel	98.7	95.9	P/P	80 - 120
1946215	Silver	102	99.3	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P335409

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1946320	Chloride	98.9		P	90 - 110
1946491	Chloride	96.2		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P335411

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1946320	Sulfate	102		P	90 - 110
1946491	Sulfate	100		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P336209

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1946412	Ammonia-N	105	104	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P335947

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1946378	Kjeldahl Nitrogen	101	103	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P335889

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1946358	NO2NO3-N	101		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P335670

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1946377	Total-P	100	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P335390

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1946200	O-Phosphate-P	94.9	99.9	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P335143

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1946400	Sucralose	115	142	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P335617

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1946711	Sucralose	110	113	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P335952

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1948654	Sucralose	89.0	97.8	P/P	40 - 150

Reference Method: USGS O-2060-01
Batch ID: P335331

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1946407	2,4-D	52.7	52.8	P/P	40 - 150
1946407	Acetaminophen	54.3	50.8	P/P	30 - 150
1946407	Bentazon	39.8	34.5	P/P	30 - 150
1946407	Carbamazepine	40.3	40.0	P/P	40 - 150
1946407	Diuron	33.9	34.2	F/F	40 - 150
1946407	Fenuron	48.4	45.8	P/P	40 - 150
1946407	Fluridone	43.7	44.1	P/P	40 - 150
1946407	Imidacloprid	105	105	P/P	40 - 160
1946407	Linuron	49.0	49.4	P/P	40 - 150
1946407	MCP	39.5	35.1	F/F	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: USGS O-2060-01
 Batch ID: P335331

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1946407	Primidone	47.9	52.9	P/P	40 - 150
1946407	Triclopyr	35.4	30.0	F/F	40 - 150

Reference Method: USGS O-2060-01
 Batch ID: P336263

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1947129	2,4-D	75.9	83.8	P/P	40 - 150
1947129	Bentazon	49.7	57.0	P/P	30 - 150
1947129	MCP	64.8	68.5	P/P	40 - 150
1947129	Triclopyr	54.0	68.8	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P335360

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1946349	Turbidity	4.13	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P335361

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1946416	Turbidity	2.19	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
 Batch ID: P335662

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1946215	Calcium	1.40	Spike	P	0 - 20
1946215	Iron	2.48	Spike	P	0 - 20
1946215	Magnesium	2.16	Spike	P	0 - 20
1946215	Potassium	2.50	Spike	P	0 - 20
1946215	Sodium	1.90	Spike	P	0 - 20
1946215	Zinc	1.52	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
 Batch ID: P335662

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1946215	Arsenic	1.86	Spike	P	0 - 20
1946215	Cadmium	1.86	Spike	P	0 - 20
1946215	Chromium	1.63	Spike	P	0 - 20
1946215	Copper	1.53	Spike	P	0 - 20
1946215	Lead	0.878	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P335662

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1946215	Nickel	2.82	Spike	P	0 - 20
1946215	Silver	2.35	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P335409

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1946491	Chloride	1.40	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P335411

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1946491	Sulfate	1.18	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P336209

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1946412	Ammonia-N	0.213	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P335947

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1946378	Kjeldahl Nitrogen	0.948	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P335889

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1946358	NO2NO3-N	0.251	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P335670

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1946377	Total-P	1.66	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P335390

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1946200	O-Phosphate-P	4.10	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P335143

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1946400	Sucralose	4.04	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P335617

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1946711	Sucralose	2.17	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P335952

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1948654	Sucralose	8.15	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P335394

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1946375	Color (true)	0.778	Sample	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P335395

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1946411	Color (true)	2.51	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P335627

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1946582	Total Alkalinity	0.331	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P335829

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1946350	TDS	6.35	Sample	P	0 - 10

Reference Method: SM 2540 C-97
Batch ID: P335830

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1946411	TDS	7.84	Sample	P	0 - 10

Quality Assurance Report Precision

Reference Method: SM 4500 F-C-97
Batch ID: P335631

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1946582	Fluoride	0.927	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P335862

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1946366	Organic Carbon	0.456	Spike	P	0 - 20

Reference Method: USGS O-2060-01
Batch ID: P335331

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1946407	2,4-D	0.227	Spike	P	0 - 30
1946407	Acetaminophen	6.63	Spike	P	0 - 30
1946407	Bentazon	9.69	Spike	P	0 - 30
1946407	Carbamazepine	0.523	Spike	P	0 - 30
1946407	Diuron	0.910	Spike	P	0 - 30
1946407	Fenuron	5.69	Spike	P	0 - 30
1946407	Fluridone	0.645	Spike	P	0 - 30
1946407	Imidacloprid	0.0	Spike	P	0 - 30
1946407	Linuron	0.792	Spike	P	0 - 30
1946407	MCP	11.7	Spike	P	0 - 30
1946407	Primidone	8.57	Spike	P	0 - 30
1946407	Triclopyr	16.4	Spike	P	0 - 30
LFB	2,4-D	5.28	LCS	P	0 - 30
LFB	Acetaminophen	3.13	LCS	P	0 - 30
LFB	Bentazon	0.816	LCS	P	0 - 30
LFB	Carbamazepine	0.134	LCS	P	0 - 30
LFB	Diuron	0.649	LCS	P	0 - 30
LFB	Fenuron	3.21	LCS	P	0 - 30
LFB	Fluridone	2.70	LCS	P	0 - 30
LFB	Imidacloprid	4.81	LCS	P	0 - 30
LFB	Linuron	6.36	LCS	P	0 - 30
LFB	MCP	6.00	LCS	P	0 - 30
LFB	Primidone	3.98	LCS	P	0 - 30
LFB	Triclopyr	9.60	LCS	P	0 - 30

Reference Method: USGS O-2060-01
Batch ID: P336263

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1947129	2,4-D	9.89	Spike	P	0 - 30
1947129	Bentazon	13.7	Spike	P	0 - 30
1947129	MCP	5.52	Spike	P	0 - 30
1947129	Triclopyr	24.0	Spike	P	0 - 30

* 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: 1946452
Field Sample ID: G2NE0497

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	53.6	P	30 - 160
EPA 8321B	Carbamazepine-d10	37.9	P	30 - 160
EPA 8321B	Diuron-d6	32.3	P	30 - 160
EPA 8321B	Primidone-d5	39.5	P	30 - 160
EPA 8321B	Sucralose-d6	115	P	40 - 160
USGS O-2060-01	2,4-D-d3	33.2	P	30 - 160
USGS O-2060-01	Acetaminophen-d4	53.6	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	37.9	P	30 - 160
USGS O-2060-01	Diuron-d6	32.3	P	30 - 160
USGS O-2060-01	Primidone-d5	39.5	P	30 - 160
USGS O-2060-01	Sucralose-d6	115	P	40 - 160

Lab Sample ID: 1946453
Field Sample ID: G2NE0856

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	38.9	P	30 - 160
EPA 8321B	Carbamazepine-d10	43.9	P	30 - 160
EPA 8321B	Diuron-d6	37.8	P	30 - 160
EPA 8321B	Primidone-d5	37.9	P	30 - 160
EPA 8321B	Sucralose-d6	142	P	40 - 160
USGS O-2060-01	2,4-D-d3	73.5	P	30 - 160
USGS O-2060-01	Acetaminophen-d4	38.9	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	43.9	P	30 - 160
USGS O-2060-01	Diuron-d6	37.8	P	30 - 160
USGS O-2060-01	Primidone-d5	37.9	P	30 - 160
USGS O-2060-01	Sucralose-d6	142	P	40 - 160

Lab Sample ID: 1946454
Field Sample ID: G2NE0323

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	88.5	P	30 - 160
EPA 8321B	Carbamazepine-d10	81.0	P	30 - 160
EPA 8321B	Diuron-d6	55.0	P	30 - 160
EPA 8321B	Primidone-d5	87.7	P	30 - 160
EPA 8321B	Sucralose-d6	145	P	40 - 160
USGS O-2060-01	2,4-D-d3	38.8	P	30 - 160
USGS O-2060-01	Acetaminophen-d4	88.5	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	81.0	P	30 - 160
USGS O-2060-01	Diuron-d6	55.0	P	30 - 160
USGS O-2060-01	Primidone-d5	87.7	P	30 - 160
USGS O-2060-01	Sucralose-d6	145	P	40 - 160

Lab Sample ID: 1946455
Field Sample ID: G2NE0761

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	122	P	30 - 160
EPA 8321B	Carbamazepine-d10	63.2	P	30 - 160
EPA 8321B	Diuron-d6	43.6	P	30 - 160
EPA 8321B	Primidone-d5	53.9	P	30 - 160

Quality Assurance Report Surrogates

Lab Sample ID: 1946455
Field Sample ID: G2NE0761

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	104	P	40 - 160
USGS O-2060-01	2,4-D-d3	40.5	P	30 - 160
USGS O-2060-01	Acetaminophen-d4	122	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	63.2	P	30 - 160
USGS O-2060-01	Diuron-d6	43.6	P	30 - 160
USGS O-2060-01	Primidone-d5	53.9	P	30 - 160
USGS O-2060-01	Sucralose-d6	104	P	40 - 160

Lab Sample ID: 1946456
Field Sample ID: G2NE0130

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	124	P	30 - 160
EPA 8321B	Carbamazepine-d10	61.4	P	30 - 160
EPA 8321B	Diuron-d6	43.2	P	30 - 160
EPA 8321B	Primidone-d5	58.8	P	30 - 160
EPA 8321B	Sucralose-d6	121	P	40 - 160
USGS O-2060-01	2,4-D-d3	43.2	P	30 - 160
USGS O-2060-01	Acetaminophen-d4	124	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	61.4	P	30 - 160
USGS O-2060-01	Diuron-d6	43.2	P	30 - 160
USGS O-2060-01	Primidone-d5	58.8	P	30 - 160
USGS O-2060-01	Sucralose-d6	121	P	40 - 160

Lab Sample ID: 1946457
Field Sample ID: G2NE0905

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	88.4	P	30 - 160
EPA 8321B	Carbamazepine-d10	80.3	P	30 - 160
EPA 8321B	Diuron-d6	53.5	P	30 - 160
EPA 8321B	Primidone-d5	91.6	P	30 - 160
EPA 8321B	Sucralose-d6	154	P	40 - 160
USGS O-2060-01	2,4-D-d3	41.8	P	30 - 160
USGS O-2060-01	Acetaminophen-d4	88.4	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	80.3	P	30 - 160
USGS O-2060-01	Diuron-d6	53.5	P	30 - 160
USGS O-2060-01	Primidone-d5	91.6	P	30 - 160
USGS O-2060-01	Sucralose-d6	154	P	40 - 160

Lab Sample ID: 1946458
Field Sample ID: G2NE0734

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	83.2	P	30 - 160
EPA 8321B	Carbamazepine-d10	84.6	P	30 - 160
EPA 8321B	Diuron-d6	53.6	P	30 - 160
EPA 8321B	Primidone-d5	82.1	P	30 - 160
EPA 8321B	Sucralose-d6	114	P	40 - 160
USGS O-2060-01	2,4-D-d3	42.3	P	30 - 160
USGS O-2060-01	Acetaminophen-d4	83.2	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	84.6	P	30 - 160

Quality Assurance Report Surrogates

Lab Sample ID: 1946458
Field Sample ID: G2NE0734

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
USGS O-2060-01	Diuron-d6	53.6	P	30 - 160
USGS O-2060-01	Primidone-d5	82.1	P	30 - 160
USGS O-2060-01	Sucralose-d6	114	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A80230
Included Lab Sample IDs: 1946410, 1946411, 1946416

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	99.2	99.8	P/P	90 - 110
Sulfate	99.4	100	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A80289
Included Lab Sample IDs: 1946410, 1946411, 1946416

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A80298
Included Lab Sample IDs: 1946414, 1946415, 1946418

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	100	98.6	P/P	90 - 110

Reference Method: SM 2120 B
Run ID: A80299
Included Lab Sample IDs: 1946410, 1946411, 1946416

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	102	103	P/P	85 - 115
Color (true)	103	103	P/P	85 - 115

Reference Method: SM 2320 B-97
Run ID: A80383
Included Lab Sample IDs: 1946410, 1946411, 1946416

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

Reference Method: SM 4500 F-C-97
Run ID: A80383
Included Lab Sample IDs: 1946410, 1946411, 1946416

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	105	105	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A80448

Included Lab Sample IDs: 1946459

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	100	100	P/P	90 - 110
Iron	101	99.4	P/P	90 - 110
Magnesium	101	99.0	P/P	90 - 110
Potassium	98.4	96.9	P/P	90 - 110
Sodium	97.4	97.3	P/P	90 - 110
Zinc	98.5	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A80452

Included Lab Sample IDs: 1946412, 1946413, 1946417

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.6	101	P/P	90 - 110

Reference Method: USGS O-2060-01

Run ID: A80455

Included Lab Sample IDs: 1946452, 1946453

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetaminophen	106	98.0	P/P	60 - 150
Carbamazepine	107	101	P/P	60 - 150
Diuron	107	105	P/P	60 - 150
Fenuron	104	104	P/P	60 - 150
Fluridone	110	111	P/P	60 - 160
Fluridone	112	110	P/P	60 - 160
Imidacloprid	102	87.0	P/P	60 - 150
Linuron	110	107	P/P	60 - 150
Primidone	101	87.6	P/P	60 - 150

Reference Method: USGS O-2060-01

Run ID: A80485

Included Lab Sample IDs: 1946454, 1946455, 1946456, 1946457, 1946458

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	97.2	91.1	P/P	50 - 150
Acetaminophen	93.2	91.8	P/P	60 - 150
Bentazon	129	114	P/P	50 - 150
Carbamazepine	108	102	P/P	60 - 150
Diuron	100	93.0	P/P	60 - 150
Fenuron	89.4	82.6	P/P	60 - 150
Fluridone	114	112	P/P	60 - 160
Imidacloprid	83.1	83.8	P/P	60 - 150
Linuron	107	100	P/P	60 - 150
MCPP	105	97.8	P/P	50 - 150
Primidone	87.1	88.4	P/P	60 - 150
Triclopyr	109	95.6	P/P	50 - 160

Quality Assurance Report Calibration Verification

Reference Method: SM 5310 B-00

Run ID: A80498

Included Lab Sample IDs: 1946412, 1946413, 1946417

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	99.6	100	P/P	90 - 110

Reference Method: USGS O-2060-01

Run ID: A80505

Included Lab Sample IDs: 1946452

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	97.5	95.6	P/P	50 - 150
Bentazon	107	94.4	P/P	50 - 150
MCP	107	99.0	P/P	50 - 150
Triclopyr	102	97.0	P/P	50 - 150

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A80510

Included Lab Sample IDs: 1946412, 1946413, 1946417

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO ₂ NO ₃ -N	99.5	99.5	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A80536

Included Lab Sample IDs: 1946453, 1946454, 1946457

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	73.2	73.8	P/P	60 - 150
Sucralose	73.8	75.9	P/P	60 - 150

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A80550

Included Lab Sample IDs: 1946459

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	95.9	94.3	P/P	90 - 110
Cadmium	94.1	94.0	P/P	90 - 110
Chromium	94.4	94.2	P/P	90 - 110
Copper	96.9	95.8	P/P	90 - 110
Lead	93.4	94.4	P/P	90 - 110
Nickel	96.1	95.9	P/P	90 - 110
Silver	105	104	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A80568

Included Lab Sample IDs: 1946452, 1946455, 1946456, 1946458

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	105	107	P/P	60 - 150
Sucralose	85.2	74.5	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A80627

Included Lab Sample IDs: 1946412, 1946413, 1946417

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	100	101	P/P	90 - 110
Ammonia-N	101	99.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A80668

Included Lab Sample IDs: 1946412, 1946413, 1946417

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	105	P/P	90 - 110

Reference Method: USGS O-2060-01

Run ID: A80693

Included Lab Sample IDs: 1946453

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	92.3	91.6	P/P	50 - 150
Bentazon	110	102	P/P	50 - 150
MCP	103	95.4	P/P	50 - 150
Triclopyr	92.6	93.3	P/P	50 - 150

* 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			Precision	
				LCS			SMP	MS
EPA 180.1 Rev. 2.0	Turbidity						4.13	
	Turbidity						2.19	
EPA 200.7 Rev. 4.4	Calcium	103	101	103				1.40
	Iron	104	103	101	104			2.48
	Magnesium	103	103	101				2.16
	Potassium	98.8	95.4	96.7	100			2.50
	Sodium	101	97.8	98.2	102			1.90
	Zinc	99.3	98.4	95.6	97.1			1.52
EPA 200.8 Rev. 5.4	Arsenic	101	104	102	99.6			1.86
	Cadmium	97.6	103	101	98.7			1.86
	Chromium	96.6	100	97.3	95.7			1.63
	Copper	99.6	101	95.4	94.0			1.53
	Lead	91.3	92.1	92.4	91.6			0.878
	Nickel	99.9	101	98.7	95.9			2.82
	Silver	98.4	102	102	99.3			2.35
EPA 300.0 Rev. 2.1	Chloride	101	96.2	98.9			1.40	
	Sulfate	101	100	102			1.18	
EPA 350.1 Rev. 2.0	Ammonia-N	99.9	105	104				0.213
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	104	101	103				0.948
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	104	101					0.251
EPA 365.1 Rev. 2.0	Total-P	98.8	100	102				1.66

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery		Precision	
						LCS	MS
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	97.9		94.9	99.9		4.10
EPA 8321B	Sucralose	122		115	142		4.04
	Sucralose	118		110	113		2.17
	Sucralose	80.4		89.0	97.8		8.15
SM 2120 B	Color (true)					0.778	
	Color (true)					2.51	
SM 2320 B-97	Total Alkalinity	103				0.331	
SM 2540 C-97	TDS					6.35	
	TDS					7.84	
SM 4500 F-C-97	Fluoride	101					0.927
SM 5310 B-00	Organic Carbon	101					0.456
USGS O-2060-01	2,4-D	67.8	71.5	52.7	52.8	5.28	0.227
	2,4-D	113		75.9	83.8		9.89
	Acetaminophen	112	115	54.3	50.8	3.13	6.63
	Bentazon	61.6	62.1	39.8	34.5	0.816	9.69
	Bentazon	83.2		49.7	57.0		13.7
	Carbamazepine	129	130	40.3	40.0	0.134	0.523
	Diuron	105	104	33.9	34.2	0.649	0.910
	Fenuron	115	119	48.4	45.8	3.21	5.69
	Fluridone	129	133	43.7	44.1	2.70	0.645
	Imidacloprid	101	106	105	105	4.81	0.0
	Linuron	101	108	49.0	49.4	6.36	0.792
	MCPP	71.6	76.1	39.5	35.1	6.00	11.7
	MCPP	111		64.8	68.5		5.52
	Primidone	102	97.6	47.9	52.9	3.98	8.57
	Triclopyr	72.4	79.7	35.4	30.0	9.60	16.4
	Triclopyr	107		54.0	68.8		24.0

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1946410, 1946411, 1946416
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	1946459
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	1946459
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1946410, 1946411, 1946416
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1946410, 1946411, 1946416
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1946412, 1946413, 1946417
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1946412, 1946413, 1946417
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1946412, 1946413, 1946417
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1946412, 1946413, 1946417
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1946414, 1946415, 1946418
EPA 8321B / E31780	Analysis of sucralose in water matrices by HPLC/MS/MS	1946452, 1946453, 1946454, 1946455, 1946456, 1946457, 1946458
SM 2120 B / E31780	True Color measured at 450 nm	1946410, 1946411, 1946416
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	1946410, 1946411, 1946416

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1946410, 1946411, 1946416
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1946410, 1946411, 1946416
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1946410, 1946411, 1946416
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1946412, 1946413, 1946417
USGS O-2060-01 / E31780	Chlorinated (phenoxy acid) herbicides in water matrices by HPLC/MS/MS	1946452, 1946453, 1946454, 1946455, 1946456, 1946457, 1946458
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1946452, 1946453, 1946454, 1946455, 1946456, 1946457, 1946458

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 180.1 Rev. 2.0	11/15/2017			11/15/2017 16:32	DeAsia Armster	1946410, 1946411, 1946416
EPA 200.7 Rev. 4.4	11/15/2017	11/20/2017	Elliott D. Healy	11/21/2017	Betina Topolski	1946459
EPA 200.8 Rev. 5.4	11/15/2017	11/20/2017	Elliott D. Healy	11/28/2017	Robert K Palmer	1946459
EPA 300.0 Rev. 2.1	11/15/2017			11/16/2017	Julia Storbeck	1946410, 1946411, 1946416
EPA 350.1 Rev. 2.0	11/15/2017			11/30/2017	Sofia Elnemr	1946412, 1946413, 1946417
EPA 351.2 Rev. 2.0	11/15/2017	11/28/2017	Adrian Shelby	12/01/2017	Tanya Welborn	1946412, 1946413, 1946417
EPA 353.2 Rev. 2.0	11/15/2017			11/27/2017	Lauren Bottorf	1946412, 1946413, 1946417
EPA 365.1 Rev. 2.0	11/15/2017	11/21/2017	Adrian Shelby	11/21/2017	Lipi Saha	1946412, 1946413, 1946417
EPA 365.1 Rev. 2.0 dissolved	11/15/2017			11/15/2017 14:55	Megan Treadwell	1946414
	11/15/2017			11/15/2017 14:56	Megan Treadwell	1946415
	11/15/2017			11/15/2017 14:57	Megan Treadwell	1946418
EPA 8321B	11/15/2017	11/22/2017	Mohammad Ghaffari	11/23/2017	Mohammad Ghaffari	1946453
	11/15/2017	11/22/2017	Mohammad Ghaffari	11/24/2017	Mohammad Ghaffari	1946454, 1946457
	11/15/2017	11/22/2017	Mohammad Ghaffari	11/29/2017	Mohammad Ghaffari	1946452, 1946455, 1946458
	11/15/2017	11/29/2017	Juyoung Kim	11/30/2017	Juyoung Kim	1946456
SM 2120 B	11/15/2017			11/15/2017 16:03	Tanya Welborn	1946410
	11/15/2017			11/15/2017 16:04	Tanya Welborn	1946416
	11/15/2017			11/15/2017 16:09	Tanya Welborn	1946411
SM 2320 B-97	11/15/2017			11/18/2017	Dale L. Simmons	1946410, 1946411, 1946416
SM 2540 C-97	11/15/2017			11/20/2017	Yijie Li	1946410, 1946411, 1946416
SM 2540 D-97	11/15/2017			11/20/2017	Yijie Li	1946410, 1946411, 1946416
SM 4500 F-C-97	11/15/2017			11/18/2017	Dale L. Simmons	1946410, 1946411, 1946416
SM 5310 B-00	11/15/2017			11/22/2017	Ping Hua	1946412, 1946413, 1946417
USGS O-2060-01	11/15/2017	11/17/2017	Hoor Shaik	11/21/2017	Julie Michelle Frank	1946452, 1946453
	11/15/2017	11/17/2017	Hoor Shaik	11/21/2017	Mohammad Ghaffari	1946454, 1946455, 1946456, 1946457, 1946458
	11/15/2017	11/17/2017	Hoor Shaik	11/23/2017	Julie Michelle Frank	1946452
	11/15/2017	12/04/2017	Hoor Shaik	12/04/2017	Julie Michelle Frank	1946453