Chemical Analysis Report

TLH-ROC-2019-04-11-02

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

Event Description: **Run 3**
Request ID: **RQ-2019-02-18-27**
Customer: **TLH-ROC**
Project ID: **SMP**

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2600 Blair Stone Rd
Tallahassee, FL 32399
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Certified by: Colin Wright, Program Administrator

Date Certified: 02-MAY-2019 12:26

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: Nutrients and Pesticides.

Scientific notation may be used in reporting very large or small values. Values reported using scientific notation will take the form of the following example: 1.3E+03, which is equivalent to 1.3×10^3 or 1300.

Unless otherwise noted, analytical values for soil and sediment samples are reported on a dry weight basis, and analytical values for waste and tissue samples are reported on a wet weight basis.

Results for TNI accredited tests met requirements established by The NELAC Institute. A double asterisk (**) is used to indicate an analyte/matrix/method for which the laboratory is not TNI accredited by the Florida Department of Health Environmental Laboratory Certification Program or where accreditation for that field of testing is not applicable.

Any significant anomalies or deviations from established protocols are documented in Non-Conformance Reports, which, where appropriate, are included within this analytical report. Additional comments related to specific analytical tests may be included as remarks following the analytical results for each sample. Such comments and remarks are for informational purposes only and are not intended to convey judgement about the usability of the reported data.

A quality control report on the performance of the test method for the submitted samples is included. Uncertainty associated with the analytical results contained in this report can be estimated from the reported quality assurance results and from published quality control acceptance limits for each analytical test. Matrix quality control results (matrix spike recoveries and matrix sample precision) pertain only to the matrix sample tested and do not necessarily reflect test method performance for other samples.

Typical matrix quality control (QC) measurements may include matrix spike recovery, matrix spike duplicate recovery, matrix spike precision and matrix sample precision. Not all matrix QC results may be available or reportable; where they are not an explanation is provided. Typical reasons for unavailable QC results include, but are not limited to, a) insufficient matrix sample to perform some or all QC measurements; b) analyte concentration in the sample replicated was too low for a meaningful measurement of precision and c) analyte concentration in the matrix sample spiked was too high (relative to the amount of analyte spiked) for a meaningful measurement of recovery. Where matrix QC results are unavailable, other method performance metrics (e.g., LCS recovery, LCS precision, surrogate recovery) may be used to assess performance of the method. Comments explaining any missing QC measurements are not intended to convey any adverse conclusions about the quality of the reported data.

Precision is reported as relative percent difference unless otherwise noted.

Quality Control codes as defined below may be used in this report to indicate results that are associated with one or more quality control elements which did not fall within established test method criteria. Such results may be qualified as estimates using a J qualifier as required by 62-160 F.A.C. Explanations are included in the report for any results that were reported as estimates for other reasons.

QC Codes used in this report may include:

LCS – Recovery for the batch Laboratory Control Sample (LCS) was outside existing control limits;
MS – Recovery for the batch matrix spike (MS) was outside existing control limits;
CCV – Recovery for a continuing calibration verification (CCV) standard was outside existing control limits;
SUR – Recovery of a surrogate (SUR) for associated analytes was outside existing control limits;
RPD – The precision, measured as relative percent difference (RPD), of batch replicate measurements was outside existing control limits;
RSD – The precision, measured as relative standard deviation (RSD), of batch replicate measurements was outside existing control limits;
SMP – Sample - used precision derived from replicate analyses of a sample;

The following data qualifiers are used, where applicable, in this report as specified in 62-160 F.A.C.

A - Value reported is the mean of two or more determinations.
B - Results based on colony counts outside the acceptable range.
I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
J - Estimated value and/or the analysis did not meet established quality control criteria.
K - Actual value is known to be less than value given.
L - Actual value is known to be greater than value given.
N - Presumptive evidence of presence of material.
O - Sampled, but analysis lost or not performed.
Q - Sample held beyond normal holding time.
T - Value reported is less than the criterion of detection.
U - Material was analyzed for but not detected. The reported value is the method detection limit for the sample analyzed.
V - Analyte was detected in both sample and method blank.
X - Too few individuals to calculate SCI value.
Y - The laboratory analysis was from an unpreserved or improperly preserved sample. The data may not be accurate.
Z - Colonies were too numerous to count (TNTC).

Quality control information from overflow laboratories may not be included in this report. Please refer to the associated report from the overflow laboratory for additional information.

Sample Location: SWEETWATER BRANCH @ CODY CHURCH RD Collection Date/Time: 04/11/2019 09:35

Field ID: G1TLHR0040 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2077691	EPA 180.1 Rev. 2.0	Turbidity	3.7		NTU	P362076	
	EPA 300.0 Rev. 2.1	Chloride	4.6		mg Cl/L	P362381	
		Sulfate	0.38	I	mg SO4/L	P362383	
	SM 2120 B	Color (true)	110		PCU	P362064	
	SM 2320 B-97	Total Alkalinity	7.4		mg CaCO3/L	P362572	
	SM 2540 C-97	TDS	40		mg/L	P362631	
	SM 2540 D-97	TSS	2	U	mg/L	P362206	
	SM 4500 F-C-97	Fluoride	0.057	I	mg F/L	P362577	
2077694	EPA 350.1 Rev. 2.0	Ammonia-N	0.016		mg N/L	P362563	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.38		mg N/L	P362481	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.027		mg N/L	P362495	
	EPA 365.1 Rev. 2.0	Total-P	0.088		mg P/L	P362429	
	SM 5310 B-00	Organic Carbon	8.0		mg C/L	P362314	
2077697	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.057		mg P/L	P362056	
2077724	EPA 8321B	2,4-D	0.0020	U	ug/L	P361970	
		Acesulfame K**	0.10	U	ug/L	P362188	MS
		AMPA**	0.10	U	ug/L	P362188	
		Sucralose**	0.015	I	ug/L	P362188	
		Acetaminophen**	0.0080	U	ug/L	P361970	
		Endothall**	0.25	U	ug/L	P362188	
		Glufosinate**	0.10	U	ug/L	P362188	
		Bentazon	8.0E-04	U	ug/L	P361970	
		Glyphosate**	0.10	U	ug/L	P362188	
		Carbamazepine**	8.0E-04	U	ug/L	P361970	
		Diuron	0.0020	U	ug/L	P361970	
		Fenuron	0.016	U	ug/L	P361970	
		Fluridone**	8.0E-04	U	ug/L	P361970	
		Imazapyr**	0.0040	U	ug/L	P361970	
		Hydrocodone**	0.0020	U	ug/L	P361970	
		Ibuprofen**	0.020	U	ug/L	P361970	
		Imidacloprid	0.0020	UJ	ug/L	P361970	MS
		Linuron	0.0040	U	ug/L	P361970	
		MCPP	0.0020	U	ug/L	P361970	
		Naproxen**	0.0080	U	ug/L	P361970	
		Primidone**	0.0040	U	ug/L	P361970	
		Pyraclostrobin**	0.0020	U	ug/L	P361970	
		Triclopyr**	0.0040	U	ug/L	P361970	

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: Refer to the narrative for an explanation of QC Codes.

Sample Location: MOORE BRANCH @ CODY CHURCH RD **Collection Date/Time: 04/11/2019 10:00**

Field ID: G1TLHR0041 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2077692	EPA 180.1 Rev. 2.0	Turbidity	2.2		NTU	P362076	
	EPA 300.0 Rev. 2.1	Chloride	5.0		mg Cl/L	P362381	
		Sulfate	0.58	I	mg SO4/L	P362383	
	SM 2120 B	Color (true)	130		PCU	P362064	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P362572	
	SM 2540 C-97	TDS	35		mg/L	P362632	
	SM 2540 D-97	TSS	3	I	mg/L	P362207	
	SM 4500 F-C-97	Fluoride	0.037	I	mg F/L	P362577	
2077695	EPA 350.1 Rev. 2.0	Ammonia-N	0.018		mg N/L	P362563	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.37		mg N/L	P362481	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.009	I	mg N/L	P362495	
	EPA 365.1 Rev. 2.0	Total-P	0.079		mg P/L	P362430	
	SM 5310 B-00	Organic Carbon	8.6		mg C/L	P362314	
2077698	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.048		mg P/L	P362056	
2077725	EPA 8321B	2,4-D	0.0020	U	ug/L	P361970	
		Acesulfame K**	0.10	U	ug/L	P362188	MS
		AMPA**	0.10	U	ug/L	P362188	
		Sucralose**	0.010	U	ug/L	P362188	
		Acetaminophen**	0.0080	U	ug/L	P361970	
		Endothall**	0.25	U	ug/L	P362188	
		Glufosinate**	0.10	U	ug/L	P362188	
		Bentazon	8.0E-04	U	ug/L	P361970	
		Glyphosate**	0.10	U	ug/L	P362188	
		Carbamazepine**	8.0E-04	U	ug/L	P361970	
		Diuron	0.0062	I	ug/L	P361970	
		Fenuron	0.016	U	ug/L	P361970	
		Fluridone**	8.0E-04	U	ug/L	P361970	
		Imazapyr**	0.0040	U	ug/L	P361970	
		Hydrocodone**	0.0020	U	ug/L	P361970	
		Ibuprofen**	0.020	U	ug/L	P361970	
		Imidacloprid	0.0020	U	ug/L	P361970	MS
		Linuron	0.0040	U	ug/L	P361970	
		MCPP	0.0020	U	ug/L	P361970	
		Naproxen**	0.0080	U	ug/L	P361970	
		Primidone**	0.0040	U	ug/L	P361970	
		Pyraclostrobin**	0.0020	U	ug/L	P361970	
		Triclopyr**	0.0040	U	ug/L	P361970	

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: BAILEY MILL CREEK @ WILSON RD. **Collection Date/Time: 04/11/2019 11:05**

Field ID: G1TLHR0081 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2077700	EPA 180.1 Rev. 2.0	Turbidity	6.8		NTU	P362076	
	EPA 300.0 Rev. 2.1	Chloride	5.1		mg Cl/L	P362381	
		Sulfate	0.22	I	mg SO4/L	P362383	
	SM 2120 B	Color (true)	150		PCU	P362064	
	SM 2320 B-97	Total Alkalinity	53		mg CaCO3/L	P362572	
	SM 2540 C-97	TDS	104		mg/L	P362632	
	SM 2540 D-97	TSS	16		mg/L	P362207	
	SM 4500 F-C-97	Fluoride	0.077	I	mg F/L	P362577	
2077702	EPA 350.1 Rev. 2.0	Ammonia-N	0.033		mg N/L	P362563	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.82		mg N/L	P362481	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.022		mg N/L	P362495	
	EPA 365.1 Rev. 2.0	Total-P	0.12		mg P/L	P362430	
	SM 5310 B-00	Organic Carbon	16		mg C/L	P362314	
2077704	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.044		mg P/L	P362056	

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: SPRING CREEK @ US98 **Collection Date/Time: 04/11/2019 12:30**

Field ID: G1TLHR0084 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2077701	EPA 180.1 Rev. 2.0	Turbidity	1.9		NTU	P362076	
	EPA 300.0 Rev. 2.1	Chloride	6.2		mg Cl/L	P362381	
		Sulfate	12		mg SO4/L	P362383	
	SM 2120 B	Color (true)	71		PCU	P362064	
	SM 2320 B-97	Total Alkalinity	191		mg CaCO3/L	P362572	
	SM 2540 C-97	TDS	229	A	mg/L	P362632	
	SM 2540 D-97	TSS	2	UA	mg/L	P362207	
	SM 4500 F-C-97	Fluoride	0.19		mg F/L	P362577	
2077703	EPA 350.1 Rev. 2.0	Ammonia-N	0.026		mg N/L	P362565	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.21		mg N/L	P362582	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.068		mg N/L	P362495	
	EPA 365.1 Rev. 2.0	Total-P	0.13		mg P/L	P362430	
	SM 5310 B-00	Organic Carbon	6.7		mg C/L	P362314	
2077705	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.10		mg P/L	P362056	

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: WOODS CREEK @ OSTEEN RD **Collection Date/Time: 04/11/2019 12:50**

Field ID: G1TLHR0067 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2077693	EPA 180.1 Rev. 2.0	Turbidity	1.6		NTU	P362076	
	EPA 300.0 Rev. 2.1	Chloride	6.3		mg Cl/L	P362381	
		Sulfate	3.2		mg SO4/L	P362383	
	SM 2120 B	Color (true)	130		PCU	P362064	
	SM 2320 B-97	Total Alkalinity	162		mg CaCO3/L	P362572	
	SM 2540 C-97	TDS	206		mg/L	P362632	
	SM 2540 D-97	TSS	2	I	mg/L	P362207	
	SM 4500 F-C-97	Fluoride	0.17		mg F/L	P362577	
2077696	EPA 350.1 Rev. 2.0	Ammonia-N	0.010		mg N/L	P362563	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.24		mg N/L	P362481	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.14		mg N/L	P362495	
	EPA 365.1 Rev. 2.0	Total-P	0.15		mg P/L	P362430	
	SM 5310 B-00	Organic Carbon	11		mg C/L	P362314	
2077699	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.12		mg P/L	P362056	
2077726	EPA 8321B	2,4-D	0.0020	U	ug/L	P361970	
		Acesulfame K**	0.10	U	ug/L	P362188	MS
		AMPA**	0.10	U	ug/L	P362188	
		Sucralose**	0.018	I	ug/L	P362188	
		Acetaminophen**	0.0080	U	ug/L	P361970	
		Endothall**	0.25	U	ug/L	P362188	
		Glufosinate**	0.10	U	ug/L	P362188	
		Bentazon	8.0E-04	U	ug/L	P361970	
		Glyphosate**	0.10	U	ug/L	P362188	
		Carbamazepine**	8.0E-04	U	ug/L	P361970	
		Diuron	0.0020	U	ug/L	P361970	
		Fenuron	0.016	U	ug/L	P361970	
		Fluridone**	8.0E-04	U	ug/L	P361970	
		Imazapyr**	0.0056	I	ug/L	P361970	
		Hydrocodone**	0.0020	U	ug/L	P361970	
		Ibuprofen**	0.020	U	ug/L	P361970	
		Imidacloprid	0.0020	U	ug/L	P361970	MS
		Linuron	0.0040	U	ug/L	P361970	
		MCPP	0.0020	U	ug/L	P361970	
		Naproxen**	0.0080	U	ug/L	P361970	
		Primidone**	0.0040	U	ug/L	P361970	
		Pyraclostrobin**	0.0020	U	ug/L	P361970	
		Triclopyr**	0.0040	U	ug/L	P361970	

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: GULF OF MEXICO (ECONFINA RIVER) **Collection Date/Time: 04/11/2019 14:05**

Field ID: G1TLHR0043 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2077706	EPA 180.1 Rev. 2.0	Turbidity	4.3		NTU	P362076	
	EPA 300.0	Bromide	39		mg Br/L	P362586	
	SM 2320 B-97	Total Alkalinity	134		mg CaCO3/L	P362573	
	SM 2540 D-97	TSS	11		mg/L	P362500	
	SM 4500 F-C-97	Fluoride	0.74		mg F/L	P362578	
2077707	EPA 350.1 Rev. 2.0	Ammonia-N	0.011		mg N/L	P362564	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.59		mg N/L	P362263	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P362646	
	EPA 365.1 Rev. 2.0	Total-P	0.029		mg P/L	P362249	
	SM 5310 B-00	Organic Carbon	11		mg C/L	P362201	
2077708	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P362055	

Ref. Method and Comment:
EPA 300.0: Bromide: Batch matrix spike recoveries for one of two spiked samples are unavailable because of high analyte concentration in the QC sample.
SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Quality Assurance Report
Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P362076

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0
Batch ID: P362586

Component	Result	Code	Units
Bromide	0.013	U	mg Br/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P362381

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P362383

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P362563

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P362564

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P362565

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P362263

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P362481

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

Quality Assurance Report
Method Blank Results

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P362582

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P362495

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P362646

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P362249

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P362429

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P362430

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P362055

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P362056

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

Reference Method: EPA 8321B
Batch ID: P361970

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
Acetaminophen	0.0080	U	ug/L
Bentazon	8.0E-04	U	ug/L
Carbamazepine	8.0E-04	U	ug/L

Quality Assurance Report
Method Blank Results

Reference Method: EPA 8321B
Batch ID: P361970

Component	Result	Code	Units
Diuron	0.0020	U	ug/L
Fenuron	0.016	U	ug/L
Fluridone	8.0E-04	U	ug/L
Hydrocodone	0.0020	U	ug/L
Ibuprofen	0.020	U	ug/L
Imazapyr	0.0040	U	ug/L
Imidacloprid	0.0020	U	ug/L
Linuron	0.0040	U	ug/L
MCPP	0.0020	U	ug/L
Naproxen	0.0080	U	ug/L
Primidone	0.0040	U	ug/L
Pyraclostrobin	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: EPA 8321B
Batch ID: P362188

Component	Result	Code	Units
Acesulfame K	0.10	U	ug/L
AMPA	0.10	U	ug/L
Endothall	0.25	U	ug/L
Glufosinate	0.10	U	ug/L
Glyphosate	0.10	U	ug/L
Sucralose	0.010	U	ug/L

Reference Method: SM 2120 B
Batch ID: P362064

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P362572

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

Reference Method: SM 2320 B-97
Batch ID: P362573

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

Reference Method: SM 2540 C-97
Batch ID: P362631

Component	Result	Code	Units
TDS	15	U	mg/L

Quality Assurance Report
Method Blank Results

Reference Method: SM 2540 C-97
Batch ID: P362632

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P362206

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P362207

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P362500

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P362577

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P362578

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P362201

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

Reference Method: SM 5310 B-00
Batch ID: P362314

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

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 300.0
Batch ID: P362586

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P362381

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P362383

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P362563

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P362564

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P362565

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P362263

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: P362481

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P362582

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

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P362495

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	99.5		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P362646

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P362249

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P362429

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P362430

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P362055

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P362056

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

Reference Method: EPA 8321B
Batch ID: P361970

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	56.2		P	40 - 150
Acetaminophen	78.8		P	30 - 150
Bentazon	98.9		P	30 - 150
Carbamazepine	90.4		P	40 - 150
Diuron	78.0		P	40 - 150
Fenuron	107		P	40 - 150
Fluridone	117		P	40 - 150
Hydrocodone	85.3		P	40 - 150
Ibuprofen	92.2		P	40 - 150
Imazapyr	75.2		P	40 - 150

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P361970

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Imidacloprid	96.3		P	40 - 150
Linuron	79.2		P	40 - 150
MCPP	72.0		P	40 - 150
Naproxen	60.5		P	40 - 150
Primidone	77.1		P	40 - 150
Pyraclostrobin	72.8		P	40 - 150
Triclopyr	40.5		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P362188

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	130		P	40 - 150
AMPA	118		P	40 - 150
Endothall	99.8		P	40 - 150
Glufosinate	122		P	40 - 150
Glyphosate	116		P	40 - 140
Sucralose	95.7		P	40 - 150

Reference Method: SM 2120 B
Batch ID: P362064

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.9		P	85 - 115

Reference Method: SM 2320 B-97
Batch ID: P362572

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.7		P	98 - 106

Reference Method: SM 2320 B-97
Batch ID: P362573

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	101		P	98 - 106

Reference Method: SM 4500 F-C-97
Batch ID: P362577

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.3		P	92 - 103

Reference Method: SM 4500 F-C-97
Batch ID: P362578

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

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-00
Batch ID: P362201

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.6		P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P362314

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	99.9		P	85 - 115

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 300.0
Batch ID: P362586

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2076447	Bromide	102	100	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P362381

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2077681	Chloride	102		P	90 - 110
2077766	Chloride	98.4		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P362383

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2077681	Sulfate	102		P	90 - 110
2077766	Sulfate	99.7		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P362563

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2077684	Ammonia-N	101	103	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P362564

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2077707	Ammonia-N	103	105	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P362565

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2077703	Ammonia-N	101	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P362263

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2077381	Kjeldahl Nitrogen	107	108	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P362481

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2077665	Kjeldahl Nitrogen	101	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P362582

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2077759	Kjeldahl Nitrogen	109	100	P/P	90 - 110

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P362495

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2077683	NO2NO3-N	102	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P362646

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2077399	NO2NO3-N	99.3	98.3	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P362249

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2076264	Total-P	90.2	93.1	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P362429

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2077684	Total-P	97.3	97.3	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P362430

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2077703	Total-P	98.6	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P362055

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2077708	O-Phosphate-P	93.0	94.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P362056

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2077685	O-Phosphate-P	94.8	95.4	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P361970

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2077724	2,4-D	81.2	72.2	P/P	40 - 150
2077724	Acetaminophen	96.4	93.7	P/P	30 - 150
2077724	Bentazon	69.9	61.9	P/P	30 - 150
2077724	Carbamazepine	96.8	83.7	P/P	40 - 150
2077724	Diuron	80.2	75.4	P/P	40 - 150
2077724	Fenuron	115	96.6	P/P	40 - 150
2077724	Fluridone	115	95.7	P/P	40 - 150
2077724	Hydrocodone	95.2	82.9	P/P	40 - 150
2077724	Ibuprofen	99.7	97.0	P/P	40 - 150
2077724	Imazapyr	109	82.0	P/P	40 - 150

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P361970

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2077724	Imidacloprid	185	161	F/F	40 - 150
2077724	Linuron	84.6	74.4	P/P	40 - 150
2077724	MCPP	106	92.1	P/P	40 - 150
2077724	Naproxen	75.4	65.2	P/P	40 - 150
2077724	Primidone	64.8	75.3	P/P	40 - 150
2077724	Pyraclostrobin	80.5	84.5	P/P	40 - 150
2077724	Triclopyr	62.6	60.5	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P362188

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2077462	Acesulfame K	168	125	F/P	40 - 150
2077462	AMPA	62.2	73.4	P/P	40 - 150
2077462	Endothall	97.8	103	P/P	40 - 150
2077462	Glufosinate	103	110	P/P	40 - 150
2077462	Glyphosate	86.4	84.6	P/P	40 - 140
2077462	Sucralose	104	98.0	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P362577

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2077663	Fluoride	101	100	P/P	89 - 106

Reference Method: SM 4500 F-C-97
Batch ID: P362578

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2074865	Fluoride	100	100	P/P	89 - 106

Reference Method: SM 5310 B-00
Batch ID: P362201

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2076799	Organic Carbon	96.8	96.1	P/P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P362314

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2077683	Organic Carbon	102	103	P/P	85 - 115

Quality Assurance Report
Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P362076

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2078141	Turbidity	0.569	Sample	P	0 - 20

Reference Method: EPA 300.0
Batch ID: P362586

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2076447	Bromide	1.41	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P362381

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2077766	Chloride	0.0664	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P362383

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2077766	Sulfate	0.442	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P362563

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2077684	Ammonia-N	1.86	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P362564

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2077707	Ammonia-N	1.16	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P362565

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2077703	Ammonia-N	0.473	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P362263

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2077381	Kjeldahl Nitrogen	0.485	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P362481

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2077665	Kjeldahl Nitrogen	0.0136	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P362582

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2077759	Kjeldahl Nitrogen	4.51	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P362495

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2077683	NO2NO3-N	0.491	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P362646

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2077399	NO2NO3-N	0.979	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P362249

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2076264	Total-P	3.22	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P362429

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2077684	Total-P	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P362430

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2077703	Total-P	4.16	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P362055

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2077708	O-Phosphate-P	1.71	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P362056

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2077685	O-Phosphate-P	0.631	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P361970

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2077724	2,4-D	11.7	Spike	P	0 - 30
2077724	Acetaminophen	2.76	Spike	P	0 - 30
2077724	Bentazon	12.1	Spike	P	0 - 30
2077724	Carbamazepine	14.6	Spike	P	0 - 30
2077724	Diuron	6.06	Spike	P	0 - 30
2077724	Fenuron	17.8	Spike	P	0 - 30
2077724	Fluridone	18.6	Spike	P	0 - 30
2077724	Hydrocodone	13.8	Spike	P	0 - 30
2077724	Ibuprofen	2.73	Spike	P	0 - 30
2077724	Imazapyr	28.5	Spike	P	0 - 30
2077724	Imidacloprid	13.7	Spike	P	0 - 30
2077724	Linuron	12.8	Spike	P	0 - 30
2077724	MCPP	13.8	Spike	P	0 - 30
2077724	Naproxen	14.5	Spike	P	0 - 30
2077724	Primidone	15.1	Spike	P	0 - 30
2077724	Pyraclostrobin	4.89	Spike	P	0 - 30
2077724	Triclopyr	3.40	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P362188

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2077462	Acesulfame K	25.8	Spike	P	0 - 30
2077462	AMPA	4.51	Spike	P	0 - 30
2077462	Endothall	5.45	Spike	P	0 - 30
2077462	Glufosinate	6.91	Spike	P	0 - 30
2077462	Glyphosate	0.537	Spike	P	0 - 30
2077462	Sucralose	4.33	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P362064

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2077681	Color (true)	2.56	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P362572

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2077663	Total Alkalinity	0.559	Sample	P	0 - 2.8

Quality Assurance Report
Precision

Reference Method: SM 2320 B-97
Batch ID: P362573

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2074865	Total Alkalinity	0.486	Sample	P	0 - 2.8

Reference Method: SM 2540 C-97
Batch ID: P362631

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2077640	TDS	0.191	Sample	P	0 - 10

Reference Method: SM 2540 C-97
Batch ID: P362632

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2077701	TDS	0.873	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P362577

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2077663	Fluoride	0.470	Spike	P	0 - 2.5

Reference Method: SM 4500 F-C-97
Batch ID: P362578

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2074865	Fluoride	0.0	Spike	P	0 - 2.5

Reference Method: SM 5310 B-00
Batch ID: P362201

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2076799	Organic Carbon	0.659	Spike	P	0 - 20

Reference Method: SM 5310 B-00
Batch ID: P362314

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2077683	Organic Carbon	0.814	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: 2077724
Field Sample ID: G1TLHR0040

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	80.7	P	30 - 160
EPA 8321B	Acetaminophen-d4	105	P	30 - 160
EPA 8321B	Carbamazepine-d10	98.1	P	30 - 160
EPA 8321B	Diuron-d6	82.3	P	30 - 160
EPA 8321B	Endothall-d6	116	P	30 - 160
EPA 8321B	Endothall-d6	116	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	117	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	117	P	30 - 160
EPA 8321B	Ibuprofen-d3	115	P	30 - 160
EPA 8321B	Primidone-d5	89.2	P	30 - 160
EPA 8321B	Sucralose-d6	85.3	P	30 - 160
EPA 8321B	Sucralose-d6	85.3	P	30 - 160

Lab Sample ID: 2077725
Field Sample ID: G1TLHR0041

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	75.0	P	30 - 160
EPA 8321B	Acetaminophen-d4	87.6	P	30 - 160
EPA 8321B	Carbamazepine-d10	81.0	P	30 - 160
EPA 8321B	Diuron-d6	79.8	P	30 - 160
EPA 8321B	Endothall-d6	116	P	30 - 160
EPA 8321B	Endothall-d6	116	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	118	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	118	P	30 - 160
EPA 8321B	Ibuprofen-d3	91.1	P	30 - 160
EPA 8321B	Primidone-d5	87.1	P	30 - 160
EPA 8321B	Sucralose-d6	89.0	P	30 - 160
EPA 8321B	Sucralose-d6	89.0	P	30 - 160

Lab Sample ID: 2077726
Field Sample ID: G1TLHR0067

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	83.1	P	30 - 160
EPA 8321B	Acetaminophen-d4	93.8	P	30 - 160
EPA 8321B	Carbamazepine-d10	85.5	P	30 - 160
EPA 8321B	Diuron-d6	86.3	P	30 - 160
EPA 8321B	Endothall-d6	110	P	30 - 160
EPA 8321B	Endothall-d6	110	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	123	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	123	P	30 - 160
EPA 8321B	Ibuprofen-d3	114	P	30 - 160
EPA 8321B	Primidone-d5	69.8	P	30 - 160
EPA 8321B	Sucralose-d6	94.9	P	30 - 160
EPA 8321B	Sucralose-d6	94.9	P	30 - 160

Quality Assurance Report
Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A90670
Included Lab Sample IDs: 2077697, 2077698, 2077699, 2077704, 2077705, 2077708

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	96.5	97.0	P/P	90 - 110
O-Phosphate-P	97.0	96.6	P/P	90 - 110
O-Phosphate-P	98.5	97.3	P/P	90 - 110

Reference Method: SM 2120 B
Run ID: A90677
Included Lab Sample IDs: 2077691, 2077692, 2077693, 2077700, 2077701

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

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A90679
Included Lab Sample IDs: 2077691, 2077692, 2077693, 2077700, 2077701, 2077706

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

Reference Method: SM 5310 B-00
Run ID: A90738
Included Lab Sample IDs: 2077707

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.0	99.5	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A90760
Included Lab Sample IDs: 2077691, 2077692, 2077693, 2077700, 2077701

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	101	102	P/P	90 - 110
Chloride	101	101	P/P	90 - 110
Sulfate	102	103	P/P	90 - 110
Sulfate	102	102	P/P	90 - 110

Reference Method: SM 5310 B-00
Run ID: A90771
Included Lab Sample IDs: 2077694, 2077695, 2077696, 2077702, 2077703

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	105	106	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A90785
Included Lab Sample IDs: 2077707

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	98.0	102	P/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: EPA 8321B
Run ID: A90788
Included Lab Sample IDs: 2077724, 2077725, 2077726

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	126	132	P/P	60 - 160
Glufosinate	113	114	P/P	60 - 160
Glyphosate	110	115	P/P	60 - 160

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A90798
Included Lab Sample IDs: 2077707

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

Reference Method: EPA 300.0
Run ID: A90809
Included Lab Sample IDs: 2077706

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Bromide	101	104	P/P	90 - 110

Reference Method: EPA 8321B
Run ID: A90825
Included Lab Sample IDs: 2077724, 2077725, 2077726

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	129	143	P/P	60 - 160
Endothall	96.3	112	P/P	60 - 160

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A90845
Included Lab Sample IDs: 2077694, 2077695, 2077696, 2077702, 2077703

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	99.0	99.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A90847
Included Lab Sample IDs: 2077694, 2077695, 2077696, 2077702, 2077703

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	103	103	P/P	90 - 110
Total-P	104	103	P/P	90 - 110

Reference Method: EPA 8321B
Run ID: A90848
Included Lab Sample IDs: 2077724, 2077725, 2077726

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	84.8	82.8	P/P	50 - 150
2,4-D	94.6	84.8	P/P	50 - 150
Acetaminophen	98.3	90.0	P/P	60 - 160
Acetaminophen	99.4	98.3	P/P	60 - 160
Bentazon	112	119	P/P	50 - 160

Quality Assurance Report
Calibration Verification

Reference Method: EPA 8321B
Run ID: A90848
Included Lab Sample IDs: 2077724, 2077725, 2077726

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Bentazon	114	112	P/P	50 - 160
Carbamazepine	104	105	P/P	60 - 150
Carbamazepine	105	103	P/P	60 - 150
Diuron	101	98.1	P/P	60 - 150
Diuron	98.1	101	P/P	60 - 150
Fenuron	104	99.3	P/P	60 - 150
Fenuron	100	104	P/P	60 - 150
Fluridone	98.5	98.5	P/P	60 - 160
Fluridone	98.5	90.4	P/P	60 - 160
Hydrocodone	92.5	82.1	P/P	60 - 150
Hydrocodone	95.0	92.5	P/P	60 - 150
Ibuprofen	155	151	P/P	50 - 160
Ibuprofen	158	155	P/P	50 - 160
Imazapyr	119	109	P/P	50 - 150
Imazapyr	91.0	119	P/P	50 - 150
Imidacloprid	97.1	99.6	P/P	60 - 150
Imidacloprid	99.6	92.0	P/P	60 - 150
Linuron	95.3	97.7	P/P	60 - 150
Linuron	97.7	105	P/P	60 - 150
MCPP	89.4	96.0	P/P	50 - 150
MCPP	89.9	89.4	P/P	50 - 150
Naproxen	78.3	75.0	P/P	50 - 160
Naproxen	79.5	78.3	P/P	50 - 160
Primidone	82.4	99.0	P/P	60 - 150
Primidone	99.0	86.2	P/P	60 - 150
Pyraclostrobin	104	83.9	P/P	60 - 150
Pyraclostrobin	106	104	P/P	60 - 150
Triclopyr	98.7	98.8	P/P	50 - 150
Triclopyr	98.8	98.7	P/P	50 - 150

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A90870
Included Lab Sample IDs: 2077694, 2077695, 2077696, 2077702, 2077703, 2077707

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

Reference Method: SM 2320 B-97
Run ID: A90871
Included Lab Sample IDs: 2077691, 2077692, 2077693, 2077700, 2077701, 2077706

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	100	98.5	P/P	90 - 110
Total Alkalinity	98.5	102	P/P	90 - 110
Total Alkalinity	99.8	102	P/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: SM 4500 F-C-97
Run ID: A90871
Included Lab Sample IDs: 2077691, 2077692, 2077693, 2077700, 2077701, 2077706

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

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A90897
Included Lab Sample IDs: 2077694, 2077695, 2077696, 2077702

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	99.8	99.2	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A90918
Included Lab Sample IDs: 2077707

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

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A90919
Included Lab Sample IDs: 2077703

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	106	P/P	90 - 110

Reference Method: EPA 8321B
Run ID: A90984
Included Lab Sample IDs: 2077724, 2077725, 2077726

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	98.3	99.7	P/P	60 - 160
Sucralose	99.7	102	P/P	60 - 160

* 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					0.569	
EPA 300.0	Bromide	103	102	100			1.41
EPA 300.0 Rev. 2.1	Chloride	101	98.4	102		0.0664	
	Sulfate	101	99.7	102		0.442	
EPA 350.1 Rev. 2.0	Ammonia-N	103	101	103			1.86
	Ammonia-N	102	103	105			1.16
	Ammonia-N	100	101	102			0.473
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	104	107	108			0.485
	Kjeldahl Nitrogen	96.9	101	101			0.0136
	Kjeldahl Nitrogen	108	109	100			4.51
EPA 353.2 Rev. 2.0	NO2NO3-N	99.5	102	102			0.491
	NO2NO3-N	100	99.3	98.3			0.979
EPA 365.1 Rev. 2.0	Total-P	103	90.2	93.1			3.22
	Total-P	104	97.3	97.3			0.0
	Total-P	103	98.6	104			4.16
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.1	93.0	94.6			1.71
	O-Phosphate-P	98.7	94.8	95.4			0.631
EPA 8321B	2,4-D	56.2	81.2	72.2			11.7
	Acesulfame K	130	168	125			25.8
	Acetaminophen	78.8	96.4	93.7			2.76
	AMPA	118	62.2	73.4			4.51
	Bentazon	98.9	69.9	61.9			12.1
	Carbamazepine	90.4	96.8	83.7			14.6
	Diuron	78.0	80.2	75.4			6.06
	Endothall	99.8	97.8	103			5.45
	Fenuron	107	115	96.6			17.8
	Fluridone	117	115	95.7			18.6
	Glufosinate	122	103	110			6.91
	Glyphosate	116	86.4	84.6			0.537
	Hydrocodone	85.3	95.2	82.9			13.8
	Ibuprofen	92.2	99.7	97.0			2.73
	Imazapyr	75.2	109	82.0			28.5
	Imidacloprid	96.3	185	161			13.7
	Linuron	79.2	84.6	74.4			12.8
	MCPP	72.0	106	92.1			13.8
	Naproxen	60.5	75.4	65.2			14.5
	Primidone	77.1	64.8	75.3			15.1
	Pyraclostrobin	72.8	80.5	84.5			4.89
	Sucralose	95.7	104	98.0			4.33
	Triclopyr	40.5	62.6	60.5			3.40
SM 2120 B	Color (true)	99.9				2.56	
SM 2320 B-97	Total Alkalinity	99.7				0.559	
	Total Alkalinity	101				0.486	
SM 2540 C-97	TDS					0.191	
	TDS					0.873	
SM 4500 F-C-97	Fluoride	99.3	101	100			0.470
	Fluoride	101	100	100			0.0
SM 5310 B-00	Organic Carbon	97.6	96.8	96.1			0.659
	Organic Carbon	99.9	102	103			0.814

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2077691, 2077692, 2077693, 2077700, 2077701, 2077706
EPA 300.0 / E31780	Bromide in aqueous matrices	2077706
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2077691, 2077692, 2077693, 2077700, 2077701
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2077691, 2077692, 2077693, 2077700, 2077701
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2077694, 2077695, 2077696, 2077702, 2077703, 2077707
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2077694, 2077695, 2077696, 2077702, 2077703, 2077707
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2077694, 2077695, 2077696, 2077702, 2077703, 2077707
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2077694, 2077695, 2077696, 2077702, 2077703, 2077707
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2077697, 2077698, 2077699, 2077704, 2077705, 2077708
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2077724, 2077725, 2077726
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2077724, 2077725, 2077726
SM 2120 B / E31780	True Color measured at 450 nm	2077691, 2077692, 2077693, 2077700, 2077701
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	2077691, 2077692, 2077693, 2077700, 2077701, 2077706
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2077691, 2077692, 2077693, 2077700, 2077701
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2077691, 2077692, 2077693, 2077700, 2077701, 2077706
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2077691, 2077692, 2077693, 2077700, 2077701, 2077706
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2077694, 2077695, 2077696, 2077702, 2077703, 2077707

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	04/11/2019			04/12/2019 16:21	Adrian Shelby	2077691, 2077692, 2077693, 2077700, 2077701, 2077706
EPA 300.0	04/11/2019			04/18/2019 18:56	Lipi Saha	2077706
EPA 300.0 Rev. 2.1	04/11/2019			04/17/2019 16:01	Lipi Saha	2077691
	04/11/2019			04/17/2019 16:13	Lipi Saha	2077692
	04/11/2019			04/17/2019 16:49	Lipi Saha	2077693
	04/11/2019			04/17/2019 17:01	Lipi Saha	2077700
	04/11/2019			04/17/2019 17:14	Lipi Saha	2077701
EPA 350.1 Rev. 2.0	04/11/2019			04/18/2019 11:53	Ping Hua	2077694
	04/11/2019			04/18/2019 11:55	Ping Hua	2077695
	04/11/2019			04/18/2019 11:56	Ping Hua	2077696
	04/11/2019			04/18/2019 11:58	Ping Hua	2077702
	04/11/2019			04/18/2019 12:11	Ping Hua	2077707
	04/11/2019			04/18/2019 12:38	Ping Hua	2077703
EPA 351.2 Rev. 2.0	04/11/2019	04/16/2019 12:00	Adrian Shelby	04/17/2019 10:26	Joseph Suarez	2077707
	04/11/2019	04/19/2019 11:00	Adrian Shelby	04/22/2019 16:04	Joseph Suarez	2077694
	04/11/2019	04/19/2019 11:00	Adrian Shelby	04/22/2019 16:06	Joseph Suarez	2077695
	04/11/2019	04/19/2019 11:00	Adrian Shelby	04/22/2019 16:08	Joseph Suarez	2077696
	04/11/2019	04/19/2019 11:00	Adrian Shelby	04/22/2019 16:09	Joseph Suarez	2077702
	04/11/2019	04/22/2019 11:30	Adrian Shelby	04/23/2019 09:36	Joseph Suarez	2077703
EPA 353.2 Rev. 2.0	04/11/2019			04/19/2019 10:46	Beverly Y. Sanders	2077694
	04/11/2019			04/19/2019 10:47	Beverly Y. Sanders	2077695
	04/11/2019			04/19/2019 10:49	Beverly Y. Sanders	2077696
	04/11/2019			04/19/2019 10:50	Beverly Y. Sanders	2077702
	04/11/2019			04/19/2019 10:51	Beverly Y. Sanders	2077703
	04/11/2019			04/23/2019 10:15	Beverly Y. Sanders	2077707
EPA 365.1 Rev. 2.0	04/11/2019	04/16/2019 13:55	Sima Feizi	04/17/2019 20:57	Rosalyn Ballman	2077707
	04/11/2019	04/18/2019 13:40	Sima Feizi	04/19/2019 12:37	Rosalyn Ballman	2077694
	04/11/2019	04/18/2019 13:40	Sima Feizi	04/19/2019 12:44	Rosalyn Ballman	2077703
	04/11/2019	04/18/2019 13:40	Sima Feizi	04/19/2019 12:47	Rosalyn Ballman	2077695
	04/11/2019	04/18/2019 13:40	Sima Feizi	04/19/2019 12:51	Rosalyn Ballman	2077696
	04/11/2019	04/18/2019 13:40	Sima Feizi	04/19/2019 12:52	Rosalyn Ballman	2077702
EPA 365.1 Rev. 2.0 dissolved	04/11/2019			04/12/2019 12:59	Jhamieka S. Greenwood	2077708
	04/11/2019			04/12/2019 13:28	Jhamieka S. Greenwood	2077699
	04/11/2019			04/12/2019 13:29	Jhamieka S. Greenwood	2077705
	04/11/2019			04/12/2019 13:38	Jhamieka S. Greenwood	2077697
	04/11/2019			04/12/2019 13:39	Jhamieka S. Greenwood	2077698, 2077704
EPA 8321B	04/11/2019	04/12/2019 14:00	Hoor Shaik	04/20/2019 09:13	Juyoung Kim	2077725
	04/11/2019	04/12/2019 14:00	Hoor Shaik	04/20/2019 12:40	Juyoung Kim	2077724
	04/11/2019	04/12/2019 14:00	Hoor Shaik	04/20/2019 14:24	Juyoung Kim	2077726

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	04/11/2019	04/16/2019 14:30	Rebecca Ware	04/16/2019 15:38	Rebecca Ware	2077724
	04/11/2019	04/16/2019 14:30	Rebecca Ware	04/16/2019 15:52	Rebecca Ware	2077725
	04/11/2019	04/16/2019 14:30	Rebecca Ware	04/16/2019 16:06	Rebecca Ware	2077726
	04/11/2019	04/16/2019 14:30	Rebecca Ware	04/17/2019 09:50	Rebecca Ware	2077724
	04/11/2019	04/16/2019 14:30	Rebecca Ware	04/17/2019 09:58	Rebecca Ware	2077725
	04/11/2019	04/16/2019 14:30	Rebecca Ware	04/17/2019 10:06	Rebecca Ware	2077726
	04/11/2019	04/16/2019 14:30	Rebecca Ware	04/25/2019 00:59	Rebecca Ware	2077724
	04/11/2019	04/16/2019 14:30	Rebecca Ware	04/25/2019 01:46	Rebecca Ware	2077725
	04/11/2019	04/16/2019 14:30	Rebecca Ware	04/25/2019 01:58	Rebecca Ware	2077726
SM 2120 B	04/11/2019			04/12/2019 15:05	Blanca Fach	2077691
	04/11/2019			04/12/2019 15:06	Blanca Fach	2077692, 2077693
	04/11/2019			04/12/2019 15:07	Blanca Fach	2077700
	04/11/2019			04/12/2019 15:08	Blanca Fach	2077701
SM 2320 B-97	04/11/2019			04/19/2019 11:52	Samantha Davila	2077691
	04/11/2019			04/19/2019 12:46	Samantha Davila	2077692
	04/11/2019			04/19/2019 12:59	Samantha Davila	2077693
	04/11/2019			04/19/2019 13:12	Samantha Davila	2077700
	04/11/2019			04/19/2019 13:25	Samantha Davila	2077701
	04/11/2019			04/19/2019 19:34	Samantha Davila	2077706
SM 2540 C-97	04/11/2019			04/12/2019 18:11	Mariam Hanna	2077691, 2077692, 2077693, 2077700, 2077701
SM 2540 D-97	04/11/2019			04/12/2019 18:23	Mariam Hanna	2077691, 2077692, 2077693, 2077700, 2077701
	04/11/2019			04/15/2019 16:30	Mariam Hanna	2077706
SM 4500 F-C-97	04/11/2019			04/19/2019 11:52	Samantha Davila	2077691
	04/11/2019			04/19/2019 12:46	Samantha Davila	2077692
	04/11/2019			04/19/2019 12:59	Samantha Davila	2077693
	04/11/2019			04/19/2019 13:12	Samantha Davila	2077700
	04/11/2019			04/19/2019 13:25	Samantha Davila	2077701
	04/11/2019			04/19/2019 16:31	Samantha Davila	2077706
SM 5310 B-00	04/11/2019			04/16/2019 05:58	Julia Storbeck	2077707
	04/11/2019			04/16/2019 23:53	Julia Storbeck	2077694
	04/11/2019			04/17/2019 00:05	Julia Storbeck	2077695
	04/11/2019			04/17/2019 00:17	Julia Storbeck	2077696
	04/11/2019			04/17/2019 00:29	Julia Storbeck	2077702
	04/11/2019			04/17/2019 00:41	Julia Storbeck	2077703