

Chemical Analysis Report

TLH-ROC-2019-04-23-02

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

Event Description: **Run 8**
Request ID: **RQ-2019-01-21-11**
Customer: **TLH-ROC**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
2600 Blair Stone Rd
Tallahassee, FL 32399
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Certified by: Thekkekalathil Chandrasekhar, Chemist Administrator

Date Certified: 15-MAY-2019 11:39



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: AUCILLA RIVER @ MOUTH

Collection Date/Time: 04/23/2019 13:50

Field ID: G1TLHR0091

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2080226	EPA 180.1 Rev. 2.0	Turbidity	1.5		NTU	P362801	
	EPA 300.0	Bromide	19		mg Br/L	P362934	
	SM 2320 B-97	Total Alkalinity	124		mg CaCO3/L	P363131	
	SM 2540 D-97	TSS	3	IA	mg/L	P363415	
	SM 4500 F-C-97	Fluoride	0.42		mg F/L	P363132	
2080227	EPA 350.1 Rev. 2.0	Ammonia-N	0.008		mg N/L	P363032	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.48		mg N/L	P363615	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.024		mg N/L	P363155	
	EPA 365.1 Rev. 2.0	Total-P	0.040		mg P/L	P362940	
	SM 5310 B-00	Organic Carbon	9.0		mg C/L	P362923	
2080228	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.022		mg P/L	P362836	

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: AUCILLA RIVER @ MOUTH

Collection Date/Time: 04/23/2019 13:50

Field ID: G1TLHR0091

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2080232	EPA 8321B	2,4-D	0.0020	U	ug/L	P362672	
		Acesulfame K**	0.10	UJ	ug/L	P362741	SUR
		AMPA**	1.0	U	ug/L	P362741	
		Sucralose**	0.013	I	ug/L	P362741	
		Acetaminophen**	0.0080	U	ug/L	P362672	
		Endothall**	0.25	UJ	ug/L	P362741	SUR
		Glufosinate**	1.0	U	ug/L	P362741	
		Glyphosate**	1.0	U	ug/L	P362741	
		Bentazon	8.0E-04	U	ug/L	P362672	
		Carbamazepine**	8.0E-04	U	ug/L	P362672	
		Diuron	0.0020	U	ug/L	P362672	
		Fenuron	0.016	U	ug/L	P362672	
		Fluridone**	8.0E-04	U	ug/L	P362672	
		Imazapyr**	0.0097	I	ug/L	P362672	
		Hydrocodone**	0.0020	U	ug/L	P362672	
		Ibuprofen**	0.020	U	ug/L	P362672	
		Imidacloprid	0.0020	U	ug/L	P362672	MS
		Linuron	0.0040	U	ug/L	P362672	
		MCPP	0.0020	U	ug/L	P362672	
		Naproxen**	0.0080	U	ug/L	P362672	
		Primidone**	0.0040	U	ug/L	P362672	
		Pyraclostrobin**	0.0020	U	ug/L	P362672	
		Triclopyr**	0.0040	U	ug/L	P362672	

Ref. Method and Comment:

EPA 8321B: Refer to the narrative for an explanation of QC Codes. Surrogate spike recovery exceeding the control limits. Results confirmed in sample duplicate. Some MDLs are elevated due to required dilution of sample matrix.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P362801

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0
Batch ID: P362934

Component	Result	Code	Units
Bromide	0.013	U	mg Br/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P363032

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P363615

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P363155

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P362940

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P362836

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

Reference Method: EPA 8321B
Batch ID: P362672

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
Acetaminophen	0.0080	U	ug/L
Bentazon	8.0E-04	U	ug/L
Carbamazepine	8.0E-04	U	ug/L
Diuron	0.0020	U	ug/L
Fenuron	0.016	U	ug/L
Fluridone	8.0E-04	U	ug/L
Hydrocodone	0.0020	U	ug/L
Ibuprofen	0.020	U	ug/L
Imazapyr	0.0040	U	ug/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B
Batch ID: P362672

Component	Result	Code	Units
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: P362741

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 2320 B-97
Batch ID: P363131

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

Reference Method: SM 2540 D-97
Batch ID: P363415

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P363132

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P362923

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: P362934

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P363032

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P363615

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P363155

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P362940

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P362836

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

Reference Method: EPA 8321B
Batch ID: P362672

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	74.3		P	40 - 150
Acetaminophen	94.9		P	30 - 150
Bentazon	87.5		P	30 - 150
Carbamazepine	98.4		P	40 - 150
Diuron	88.9		P	40 - 150
Fenuron	114		P	40 - 150
Fluridone	107		P	40 - 150
Hydrocodone	107		P	40 - 150
Ibuprofen	64.7		P	40 - 150
Imazapyr	103		P	40 - 150
Imidacloprid	106		P	40 - 150
Linuron	78.2		P	40 - 150
MCPP	81.4		P	40 - 150
Naproxen	80.1		P	40 - 150
Primidone	63.3		P	40 - 150
Pyraclostrobin	69.5		P	40 - 150

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P362672

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Triclopyr	51.5		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P362741

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	104		P	40 - 150
AMPA	131		P	40 - 150
Endothall	107		P	40 - 150
Glufosinate	125		P	40 - 150
Glyphosate	121		P	40 - 140
Sucralose	95.3		P	40 - 150

Reference Method: SM 2320 B-97
Batch ID: P363131

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	100		P	98 - 106

Reference Method: SM 4500 F-C-97
Batch ID: P363132

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.6		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P362923

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	106		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0
Batch ID: P362934

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2080373	Bromide	101	99.7	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P363032

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2080020	Ammonia-N	104	103	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P363615

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2080104	Kjeldahl Nitrogen	98.1	95.1	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P363155

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2080020	NO2NO3-N	102	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P362940

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2080412	Total-P	96.5	96.9	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P362836

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2080228	O-Phosphate-P	96.4	98.4	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P362672

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2079939	2,4-D	73.8	77.8	P/P	40 - 150
2079939	Acetaminophen	102	114	P/P	30 - 150
2079939	Bentazon	69.3	74.6	P/P	30 - 150
2079939	Carbamazepine	92.9	98.8	P/P	40 - 150
2079939	Diuron	68.7	68.0	P/P	40 - 150
2079939	Fenuron	121	142	P/P	40 - 150
2079939	Fluridone	137	147	P/P	40 - 150
2079939	Hydrocodone	94.6	102	P/P	40 - 150
2079939	Ibuprofen	55.1	66.7	P/P	40 - 150
2079939	Imazapyr	75.8	101	P/P	40 - 150
2079939	Imidacloprid	143	155	P/F	40 - 150
2079939	Linuron	61.6	59.2	P/P	40 - 150
2079939	MCP	75.3	89.0	P/P	40 - 150
2079939	Naproxen	48.7	55.6	P/P	40 - 150
2079939	Primidone	88.5	81.7	P/P	40 - 150
2079939	Pyraclostrobin	75.5	81.7	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P362672

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2079939	Triclopyr	43.4	46.5	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P362741

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2080156	Acesulfame K	102	79.1	P/P	40 - 150
2080156	AMPA	61.2	66.5	P/P	40 - 150
2080156	Endothall	87.0	114	P/P	40 - 150
2080156	Glufosinate	95.6	97.2	P/P	40 - 150
2080156	Glyphosate	124	123	P/P	40 - 140
2080156	Sucralose	103	105	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P363132

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2080079	Fluoride	97.9	99.6	P/P	89 - 106

Reference Method: SM 5310 B-00
Batch ID: P362923

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2079986	Organic Carbon	103	102	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P362801

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2080259	Turbidity	2.06	Sample	P	0 - 20

Reference Method: EPA 300.0
Batch ID: P362934

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2080373	Bromide	1.58	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P363032

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2080020	Ammonia-N	1.26	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P363615

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2080104	Kjeldahl Nitrogen	2.55	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P363155

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2080020	NO2NO3-N	0.943	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P362940

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2080412	Total-P	0.307	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P362836

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2080228	O-Phosphate-P	1.67	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P362672

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2079939	2,4-D	5.20	Spike	P	0 - 30
2079939	Acetaminophen	11.2	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P362672

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2079939	Bentazon	7.39	Spike	P	0 - 30
2079939	Carbamazepine	6.15	Spike	P	0 - 30
2079939	Diuron	0.993	Spike	P	0 - 30
2079939	Fenuron	16.2	Spike	P	0 - 30
2079939	Fluridone	7.34	Spike	P	0 - 30
2079939	Hydrocodone	7.27	Spike	P	0 - 30
2079939	Ibuprofen	18.0	Spike	P	0 - 30
2079939	Imazapyr	26.6	Spike	P	0 - 30
2079939	Imidacloprid	8.02	Spike	P	0 - 30
2079939	Linuron	3.96	Spike	P	0 - 30
2079939	MCPP	16.6	Spike	P	0 - 30
2079939	Naproxen	13.3	Spike	P	0 - 30
2079939	Primidone	7.98	Spike	P	0 - 30
2079939	Pyraclostrobin	7.90	Spike	P	0 - 30
2079939	Triclopyr	7.05	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P362741

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2080156	Acesulfame K	25.0	Spike	P	0 - 30
2080156	AMPA	2.96	Spike	P	0 - 30
2080156	Endothall	26.8	Spike	P	0 - 30
2080156	Glufosinate	1.60	Spike	P	0 - 30
2080156	Glyphosate	0.186	Spike	P	0 - 30
2080156	Sucralose	2.19	Spike	P	0 - 30

Reference Method: SM 2320 B-97
Batch ID: P363131

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2080079	Total Alkalinity	0.508	Sample	P	0 - 2.8

Reference Method: SM 4500 F-C-97
Batch ID: P363132

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2080079	Fluoride	0.940	Spike	P	0 - 2.5

Reference Method: SM 5310 B-00
Batch ID: P362923

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2079986	Organic Carbon	0.890	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: 2080232

Field Sample ID: G1TLHR0091

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	84.6	P	30 - 160
EPA 8321B	Acetaminophen-d4	89.9	P	30 - 160
EPA 8321B	Carbamazepine-d10	101	P	30 - 160
EPA 8321B	Diuron-d6	91.4	P	30 - 160
EPA 8321B	Endothall-d6	482	F	30 - 160
EPA 8321B	Endothall-d6	482	F	30 - 160
EPA 8321B	Glyphosate 13C 15N	152	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	152	P	30 - 160
EPA 8321B	Ibuprofen-d3	68.3	P	30 - 160
EPA 8321B	Primidone-d5	76.7	P	30 - 160
EPA 8321B	Sucralose-d6	101	P	30 - 160
EPA 8321B	Sucralose-d6	101	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0
Run ID: A90903
Included Lab Sample IDs: 2080226

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Bromide	99.0	103	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A90974
Included Lab Sample IDs: 2080226

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	99.0	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A90987
Included Lab Sample IDs: 2080228

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	101	97.3	P/P	90 - 110

Reference Method: EPA 8321B
Run ID: A90991
Included Lab Sample IDs: 2080232

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	99.4	96.6	P/P	60 - 160

Reference Method: SM 5310 B-00
Run ID: A91035
Included Lab Sample IDs: 2080227

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

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A91070
Included Lab Sample IDs: 2080227

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

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A91076
Included Lab Sample IDs: 2080227

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

Reference Method: EPA 8321B
Run ID: A91087
Included Lab Sample IDs: 2080232

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	118	68.6	P/P	60 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A91091
Included Lab Sample IDs: 2080232

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	120	118	P/P	60 - 160
Glufosinate	122	129	P/P	60 - 160
Glyphosate	127	134	P/P	60 - 160

Reference Method: SM 2320 B-97
Run ID: A91108
Included Lab Sample IDs: 2080226

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

Reference Method: SM 4500 F-C-97
Run ID: A91108
Included Lab Sample IDs: 2080226

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

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A91123
Included Lab Sample IDs: 2080227

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	99.0	99.5	P/P	90 - 110

Reference Method: EPA 8321B
Run ID: A91231
Included Lab Sample IDs: 2080232

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	98.4	96.7	P/P	50 - 150
Acetaminophen	135	103	P/P	60 - 160
Bentazon	103	101	P/P	50 - 160
Carbamazepine	113	120	P/P	60 - 150
Diuron	119	116	P/P	60 - 150
Fenuron	107	113	P/P	60 - 150
Fluridone	113	128	P/P	60 - 160
Hydrocodone	113	112	P/P	60 - 150
Ibuprofen	70.6	72.3	P/P	50 - 160
Imazapyr	109	106	P/P	50 - 150
Imidacloprid	112	93.5	P/P	60 - 150
Linuron	79.8	84.7	P/P	60 - 150
MCPP	96.3	79.9	P/P	50 - 150
Naproxen	77.5	95.1	P/P	50 - 160
Primidone	118	109	P/P	60 - 150
Pyraclostrobin	105	107	P/P	60 - 150
Triclopyr	96.9	88.3	P/P	50 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A91327
Included Lab Sample IDs: 2080232

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Endothall	97.1	90.5	P/P	60 - 160

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A91333
Included Lab Sample IDs: 2080227

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

* Pass/Fail determinations are made for each bracketing calibration verification check.
Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.
Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		LCS	Precision	MS
						SMP	
EPA 180.1 Rev. 2.0	Turbidity					2.06	
EPA 300.0	Bromide	104	101	99.7			1.58
EPA 350.1 Rev. 2.0	Ammonia-N	101	104	103			1.26
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	109	98.1	95.1			2.55
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	101	102	101			0.943
EPA 365.1 Rev. 2.0	Total-P	101	96.5	96.9			0.307
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.6	96.4	98.4			1.67
EPA 8321B	2,4-D	74.3	73.8	77.8			5.20
	Acesulfame K	104	102	79.1			25.0
	Acetaminophen	94.9	102	114			11.2
	AMPA	131	61.2	66.5			2.96
	Bentazon	87.5	69.3	74.6			7.39
	Carbamazepine	98.4	92.9	98.8			6.15
	Diuron	88.9	68.7	68.0			0.993
	Endothall	107	87.0	114			26.8
	Fenuron	114	121	142			16.2
	Fluridone	107	137	147			7.34
	Glufosinate	125	95.6	97.2			1.60
	Glyphosate	121	124	123			0.186
	Hydrocodone	107	94.6	102			7.27
	Ibuprofen	64.7	55.1	66.7			18.0
	Imazapyr	103	75.8	101			26.6
	Imidacloprid	106	143	155			8.02
	Linuron	78.2	61.6	59.2			3.96
	MCPP	81.4	75.3	89.0			16.6
	Naproxen	80.1	48.7	55.6			13.3
	Primidone	63.3	88.5	81.7			7.98
	Pyraclostrobin	69.5	75.5	81.7			7.90
	Sucralose	95.3	103	105			2.19
	Triclopyr	51.5	43.4	46.5			7.05
SM 2320 B-97	Total Alkalinity	100				0.508	
SM 4500 F-C-97	Fluoride	96.6	97.9	99.6			0.940
SM 5310 B-00	Organic Carbon	106	103	102			0.890

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2080226
EPA 300.0 / E31780	Bromide in aqueous matrices	2080226
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2080227
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2080227
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2080227
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2080227
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2080228
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2080232
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2080232
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2080226
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2080226

Reference Method Descriptions

Method / DoH Cert #	Description	<u>Associated Samples</u>
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2080226
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2080227

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	04/23/2019			04/24/2019 16:07	Adrian Shelby	2080226
EPA 300.0	04/23/2019			04/25/2019 19:30	Lipi Saha	2080226
EPA 350.1 Rev. 2.0	04/23/2019			04/26/2019 12:51	Ping Hua	2080227
EPA 351.2 Rev. 2.0	04/23/2019	05/08/2019 12:15	Adrian Shelby	05/09/2019 11:20	Joseph Suarez	2080227
EPA 353.2 Rev. 2.0	04/23/2019			05/01/2019 09:50	Beverly Y. Sanders	2080227
EPA 365.1 Rev. 2.0	04/23/2019	04/26/2019 14:10	Sima Feizi	04/29/2019 16:06	Rosalyn Ballman	2080227
EPA 365.1 Rev. 2.0 dissolved	04/23/2019			04/24/2019 19:18	Jhamieka S. Greenwood	2080228
EPA 8321B	04/23/2019	04/24/2019 14:45	Rebecca Ware	04/25/2019 09:12	Rebecca Ware	2080232
	04/23/2019	04/24/2019 14:45	Rebecca Ware	04/25/2019 22:31	Rebecca Ware	2080232
	04/23/2019	04/24/2019 14:45	Rebecca Ware	04/26/2019 21:09	Rebecca Ware	2080232
	04/23/2019	04/29/2019 10:00	Hoor Shaik	05/02/2019 14:28	Juyoung Kim	2080232
SM 2320 B-97	04/23/2019			04/30/2019 22:20	Dale L. Simmons	2080226
SM 2540 D-97	04/23/2019			04/26/2019 14:16	Yijie Li	2080226
SM 4500 F-C-97	04/23/2019			04/30/2019 18:24	Dale L. Simmons	2080226
SM 5310 B-00	04/23/2019			04/26/2019 12:16	Julia Storbeck	2080227