

Chemical Analysis Report

TLH-ROC-2018-07-02-02

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

Event Description: **SMP 2017 kit A-b/t/m PCR-FILTER , PCR-HF183 & BacR
(WBID 757 Bear Creek)**
Request ID: **RQ-2018-04-09-61**
Customer: **TLH-ROC**
Project ID: **SMP**

Send Reports to:
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Date Certified: 20-JUL-2018 15:17



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 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: BEAR CREEK @ SR 267

Collection Date/Time: 07/02/2018 10:55

Field ID: G1TLHR0052

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2004519	EPA 180.1 Rev. 2.0	Turbidity	7.9		NTU	P347944	
	EPA 300.0 Rev. 2.1	Chloride	3.7		mg Cl/L	P348363	
		Sulfate	3.1		mg SO4/L	P348367	
	SM 2120 B	Color (true)	110		PCU	P347936	
	SM 2320 B-97	Total Alkalinity	1.3	I	mg CaCO3/L	P348125	
	SM 2540 C-97	TDS	46		mg/L	P348157	
	SM 2540 D-97	TSS	13		mg/L	P348065	
	SM 4500 F-C-97	Fluoride	0.058	I	mg F/L	P348126	
2004520	EPA 350.1 Rev. 2.0	Ammonia-N	0.020		mg N/L	P348354	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.56		mg N/L	P348140	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.080		mg N/L	P348200	
	EPA 365.1 Rev. 2.0	Total-P	0.10		mg P/L	P348078	
	SM 5310 B-00	Organic Carbon	11		mg C/L	P348374	
2004521	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.074		mg P/L	P347989	
2004525	EPA 8321B	2,4-D	0.0020	U	ug/L	P347840	
		Bentazon	8.0E-04	U	ug/L	P347840	
		MCP	0.0020	U	ug/L	P347840	
		Triclopyr**	0.0040	U	ug/L	P347840	
		Imidacloprid	0.0020	U	ug/L	P347840	
		Diuron	0.0020	U	ug/L	P347840	
		Pyraclostrobin**	0.0020	U	ug/L	P347840	
		Primidone**	0.0040	U	ug/L	P347840	
		Linuron	0.0040	U	ug/L	P347840	
		Acetaminophen**	0.0080	U	ug/L	P347840	
		Fenuron	0.016	U	ug/L	P347840	
		Imazapyr**	0.0040	U	ug/L	P347840	
		Carbamazepine**	4.0E-04	U	ug/L	P347840	
		Fluridone**	4.0E-04	U	ug/L	P347840	
		Hydrocodone**	8.0E-04	U	ug/L	P347840	
		Sucralose**	0.010	U	ug/L	P347806	

Ref. Method and Comment:

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P347944

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P348363

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P348367

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P348354

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P348140

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P348200

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P348078

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P347989

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

Reference Method: EPA 8321B
Batch ID: P347806

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B
Batch ID: P347840

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
Acetaminophen	0.0080	U	ug/L
Bentazon	8.0E-04	U	ug/L
Carbamazepine	4.0E-04	U	ug/L
Diuron	0.0020	U	ug/L
Fenuron	0.016	U	ug/L
Fluridone	4.0E-04	U	ug/L
Hydrocodone	8.0E-04	U	ug/L
Imazapyr	0.0040	U	ug/L
Imidacloprid	0.0042	I	ug/L
Linuron	0.0040	U	ug/L
MCPP	0.0020	U	ug/L
Primidone	0.0040	U	ug/L
Pyraclostrobin	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: SM 2120 B
Batch ID: P347936

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P348125

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

Reference Method: SM 2540 C-97
Batch ID: P348157

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P348065

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P348126

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P348374

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P348363

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P348367

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P348354

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P348140

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P348200

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: P348078

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P347989

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

Reference Method: EPA 8321B
Batch ID: P347806

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	71.0		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P347840

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	59.9		P	40 - 150
Acetaminophen	66.2		P	30 - 150
Bentazon	78.6		P	30 - 150
Carbamazepine	78.3		P	40 - 150

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
 Batch ID: P347840

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Diuron	74.9		P	40 - 150
Fenuron	91.0		P	40 - 150
Fluridone	90.2		P	40 - 150
Hydrocodone	79.6		P	40 - 150
Imazapyr	65.1		P	40 - 150
Imidacloprid	74.8		P	40 - 160
Linuron	53.2		P	40 - 150
MCPP	110		P	40 - 150
Primidone	68.0		P	40 - 150
Pyraclostrobin	81.7		P	40 - 150
Triclopyr	95.4		P	40 - 150

Reference Method: SM 2120 B
 Batch ID: P347936

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.5		P	85 - 115

Reference Method: SM 2320 B-97
 Batch ID: P348125

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	104		P	98 - 107

Reference Method: SM 4500 F-C-97
 Batch ID: P348126

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.3		P	91 - 105

Reference Method: SM 5310 B-00
 Batch ID: P348374

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.0		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P348363

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2004379	Chloride	98.4		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P348367

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2004379	Sulfate	101		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P348354

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2004434	Ammonia-N	102	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P348140

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2004539	Kjeldahl Nitrogen	103	97.6	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P348200

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2004505	NO2NO3-N	98.8	98.3	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P348078

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2004435	Total-P	94.8	97.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P347989

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2004507	O-Phosphate-P	97.3	98.6	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P347806

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2004229	Sucralose	73.6	72.3	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P347840

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2004656	2,4-D	95.6	78.7	P/P	40 - 150
2004656	Acetaminophen	75.6	78.1	P/P	30 - 150
2004656	Bentazon	65.4	59.8	P/P	30 - 150
2004656	Carbamazepine	76.3	74.5	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P347840

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2004656	Diuron	71.8	64.3	P/P	40 - 150
2004656	Fenuron	83.1	82.3	P/P	40 - 150
2004656	Fluridone	89.7	78.2	P/P	40 - 150
2004656	Hydrocodone	88.7	89.2	P/P	40 - 150
2004656	Imazapyr	95.8	96.7	P/P	40 - 150
2004656	Imidacloprid	129	137	P/P	40 - 160
2004656	Linuron	54.1	41.2	P/P	40 - 150
2004656	MCPP	150	130	P/P	40 - 150
2004656	Primidone	76.5	79.5	P/P	40 - 150
2004656	Pyraclostrobin	83.4	79.1	P/P	40 - 150
2004656	Triclopyr	143	129	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P348126

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2004538	Fluoride	98.0	98.0	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P348374

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2004267	Organic Carbon	97.3	98.8	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P347944

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2004503	Turbidity	2.59	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P348363

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2004379	Chloride	0.758	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P348367

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2004379	Sulfate	0.888	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P348354

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2004434	Ammonia-N	0.278	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P348140

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2004539	Kjeldahl Nitrogen	4.62	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P348200

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2004505	NO2NO3-N	0.464	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P348078

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2004435	Total-P	2.63	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P347989

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2004507	O-Phosphate-P	0.879	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P347806

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2004229	Sucralose	1.75	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P347840

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2004656	2,4-D	16.9	Spike	P	0 - 30
2004656	Acetaminophen	3.18	Spike	P	0 - 30
2004656	Bentazon	8.09	Spike	P	0 - 30
2004656	Carbamazepine	2.27	Spike	P	0 - 30
2004656	Diuron	11.0	Spike	P	0 - 30
2004656	Fenuron	0.956	Spike	P	0 - 30
2004656	Fluridone	13.6	Spike	P	0 - 30
2004656	Hydrocodone	0.644	Spike	P	0 - 30
2004656	Imazapyr	0.858	Spike	P	0 - 30
2004656	Imidacloprid	4.51	Spike	P	0 - 30
2004656	Linuron	27.3	Spike	P	0 - 30
2004656	MCCP	13.7	Spike	P	0 - 30
2004656	Primidone	3.96	Spike	P	0 - 30
2004656	Pyraclostrobin	5.25	Spike	P	0 - 30
2004656	Triclopyr	10.7	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P347936

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2004590	Color (true)	0.305	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P348125

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2004538	Total Alkalinity	0.252	Sample	P	0 - 1.6

Reference Method: SM 2540 C-97
Batch ID: P348157

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2004163	TDS	8.00	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P348126

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2004538	Fluoride	0.0	Spike	P	0 - 3.5

Quality Assurance Report Precision

Reference Method: SM 5310 B-00
Batch ID: P348374

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2004267	Organic Carbon	0.804	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: 2004525
Field Sample ID: G1TLHR0052

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	128	P	30 - 160
EPA 8321B	Acetaminophen-d4	60.8	P	30 - 160
EPA 8321B	Carbamazepine-d10	64.2	P	30 - 160
EPA 8321B	Diuron-d6	59.0	P	30 - 160
EPA 8321B	Primidone-d5	63.2	P	30 - 160
EPA 8321B	Sucralose-d6	84.1	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: SM 2120 B
Run ID: A85012
Included Lab Sample IDs: 2004519

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	100	101	P/P	90 - 115

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A85014
Included Lab Sample IDs: 2004519

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	98.5	99.5	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A85036
Included Lab Sample IDs: 2004521

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	94.3	94.0	P/P	90 - 110

Reference Method: EPA 8321B
Run ID: A85066
Included Lab Sample IDs: 2004525

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	86.3	92.7	P/P	60 - 150

Reference Method: EPA 8321B
Run ID: A85102
Included Lab Sample IDs: 2004525

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	79.2	92.1	P/P	50 - 150
Acetaminophen	73.2	71.3	P/P	60 - 160
Bentazon	115	119	P/P	50 - 150
Carbamazepine	85.5	87.6	P/P	60 - 160
Diuron	91.7	86.3	P/P	60 - 150
Fenuron	88.1	87.6	P/P	60 - 150
Fluridone	105	109	P/P	60 - 160
Hydrocodone	81.3	80.5	P/P	60 - 150
Imazapyr	63.5	66.0	P/P	50 - 150
Imidacloprid	70.6	74.8	P/P	60 - 150
Linuron	80.2	78.2	P/P	60 - 150
MCPP	78.5	87.6	P/P	50 - 150
Primidone	62.9	73.8	P/P	60 - 150
Pyraclostrobin	96.9	94.9	P/P	60 - 150
Triclopyr	81.4	86.5	P/P	50 - 160

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A85103
Included Lab Sample IDs: 2004520

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	96.8	98.4	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 2320 B-97
 Run ID: A85107
 Included Lab Sample IDs: 2004519

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

Reference Method: SM 4500 F-C-97
 Run ID: A85107
 Included Lab Sample IDs: 2004519

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

Reference Method: EPA 353.2 Rev. 2.0
 Run ID: A85130
 Included Lab Sample IDs: 2004520

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	100	102	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
 Run ID: A85187
 Included Lab Sample IDs: 2004519

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	98.6	98.6	P/P	90 - 110
Sulfate	96.9	97.1	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
 Run ID: A85188
 Included Lab Sample IDs: 2004520

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

Reference Method: EPA 351.2 Rev. 2.0
 Run ID: A85189
 Included Lab Sample IDs: 2004520

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	102	97.0	P/P	90 - 110

Reference Method: SM 5310 B-00
 Run ID: A85195
 Included Lab Sample IDs: 2004520

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	99.4	98.6	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					2.59	
EPA 300.0 Rev. 2.1	Chloride	99.5	98.4			0.758	
	Sulfate	97.1	101			0.888	
EPA 350.1 Rev. 2.0	Ammonia-N	102	102	101			0.278
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	103	103	97.6			4.62
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	100	98.8	98.3			0.464
EPA 365.1 Rev. 2.0	Total-P	98.1	94.8	97.4			2.63
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	97.3	97.3	98.6			0.879
EPA 8321B	2,4-D	59.9	95.6	78.7			16.9
	Acetaminophen	66.2	75.6	78.1			3.18
	Bentazon	78.6	65.4	59.8			8.09
	Carbamazepine	78.3	76.3	74.5			2.27
	Diuron	74.9	71.8	64.3			11.0
	Fenuron	91.0	83.1	82.3			0.956
	Fluridone	90.2	89.7	78.2			13.6
	Hydrocodone	79.6	88.7	89.2			0.644
	Imazapyr	65.1	95.8	96.7			0.858
	Imidacloprid	74.8	129	137			4.51
	Linuron	53.2	54.1	41.2			27.3
	MCPP	110	150	130			13.7
	Primidone	68.0	76.5	79.5			3.96
	Pyraclostrobin	81.7	83.4	79.1			5.25
	Sucralose	71.0	73.6	72.3			1.75
	Triclopyr	95.4	143	129			10.7
SM 2120 B	Color (true)	99.5				0.305	
SM 2320 B-97	Total Alkalinity	104				0.252	
SM 2540 C-97	TDS					8.00	
SM 4500 F-C-97	Fluoride	99.3	98.0	98.0			0.0
SM 5310 B-00	Organic Carbon	97.0	97.3	98.8			0.804

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2004519
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2004519
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2004519
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2004520
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2004520
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2004520
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2004520
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2004521
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2004525
SM 2120 B / E31780	True Color measured at 450 nm	2004519
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2004519
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2004519
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2004519
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2004519

Reference Method Descriptions

Method / DoH Cert #	Description	<u>Associated Samples</u>
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2004520

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	07/02/2018			07/03/2018 14:00	William L. Brown IV	2004519
EPA 300.0 Rev. 2.1	07/02/2018			07/11/2018 00:27	Lipi Saha	2004519
EPA 350.1 Rev. 2.0	07/02/2018			07/12/2018 12:08	Ping Hua	2004520
EPA 351.2 Rev. 2.0	07/02/2018	07/10/2018 15:30	Adrian Shelby	07/12/2018 14:20	Joseph Suarez	2004520
EPA 353.2 Rev. 2.0	07/02/2018			07/09/2018 13:14	Lauren Bottorf	2004520
EPA 365.1 Rev. 2.0	07/02/2018	07/09/2018 12:30	Lipi Saha	07/10/2018 08:30	Beverly Y. Sanders	2004520
EPA 365.1 Rev. 2.0 dissolved	07/02/2018			07/03/2018 17:33	Megan Treadwell	2004521
EPA 8321B	07/02/2018	07/02/2018 16:00	Mohammad Ghaffari	07/06/2018 08:06	Mohammad Ghaffari	2004525
	07/02/2018	07/09/2018 10:00	Hoor Shaik	07/09/2018 18:42	Juyoung Kim	2004525
	07/02/2018	07/09/2018 10:00	Hoor Shaik	07/10/2018 06:13	Juyoung Kim	2004525
SM 2120 B	07/02/2018			07/03/2018 16:08	Tanya Welborn	2004519
SM 2320 B-97	07/02/2018			07/10/2018 00:27	Dale L. Simmons	2004519
SM 2540 C-97	07/02/2018			07/03/2018 14:08	Yijie Li	2004519
SM 2540 D-97	07/02/2018			07/03/2018 14:08	Yijie Li	2004519
SM 4500 F-C-97	07/02/2018			07/10/2018 00:27	Dale L. Simmons	2004519
SM 5310 B-00	07/02/2018			07/12/2018 07:38	Megan Treadwell	2004520