

Chemical Analysis Report

CEN-DIST-2017-03-14-01

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

Event Description: **Haynes Crk Upper+HA / Haynes Crk Lower**

Request ID: **RQ-2017-03-13-43**

Customer: **CEN-DIST**

Project ID: **SMP**

Send Reports to:

FL Dept. of Environmental Protection
FL Dept. of Environmental Protection
3319 Maguire Blvd., Suite 232
Orlando, FL 32803-3767
Attn: Mike Linger

For additional information please contact

Colin Wright, Ph.D.
Liang-Tsair Lin, Ph.D.
Thekkekalathil Chandrasekhar, PhD, QA Officer
Phone (850) 245-8085

Certified by: Thekkekalathil Chandrasekhar, Chemist Administrator

Date Certified: 05-APR-2017 14:49



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: Haynes Creek (upper)

Collection Date/Time: 03/13/2017 13:10

Field ID: G1CE0058

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1879931	EPA 180.1 Rev. 2.0	Turbidity	2.3		NTU	P321564	
	EPA 300.0 Rev. 2.1	Chloride	32		mg Cl/L	P322122	
		Sulfate	15		mg SO4/L	P322124	
	SM 2120 B	Color (true)	12		PCU	P321544	
	SM 2320 B-97	Total Alkalinity	124		mg CaCO3/L	P322070	
	SM 2540 C-97	TDS	237		mg/L	P322312	
	SM 2540 D-97	TSS	7	I	mg/L	P322175	
	SM 4500 F-C-97	Fluoride	0.19		mg F/L	P322075	
1879932	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P321642	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.2		mg N/L	P321712	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P321835	
	EPA 365.1 Rev. 2.0	Total-P	0.026		mg P/L	P321605	
	SM 5310 B-00	Organic Carbon	14		mg C/L	P321638	
1879933	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P321538	

Ref. Method and Comment:

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

EPA 365.1 Rev. 2.0 dissolved: O-Phosphate-P: Matrix spike recovery data is unavailable due to high analyte concentration in the QC sample.

Sample Location: Haynes Creek @ just DS of Burell Lock

Collection Date/Time: 03/13/2017 13:44

Field ID: 20020168

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1879951	EPA 8321B	Sucralose**	0.10		ug/L	P321518	
	USGS O-2060-01	2,4-D	0.016		ug/L	P321386	
		Diuron	0.0040	U	ug/L	P321386	
		Fenuron	0.0080	U	ug/L	P321386	
		Imidacloprid	0.0040	U	ug/L	P321386	
		Bentazon	0.017		ug/L	P321386	
		Linuron	0.0040	UJ	ug/L	P321386	CCV
		Acetaminophen**	0.0040	U	ug/L	P321386	
		MCP	0.0040	U	ug/L	P321386	MS
		Carbamazepine**	4.0E-04	U	ug/L	P321386	
		Triclopyr**	0.010	U	ug/L	P321386	
		Primidone**	0.0080	U	ug/L	P321386	
		Fluridone**	0.0016		ug/L	P321386	MS, RPD

Ref. Method and Comment:

USGS O-2060-01: MS accuracy for 2,4-D, bentazon and triclopyr could not be assessed due to high concentration of parameter in the spiked sample.

USGS O-2060-01: Refer to the narrative for an explanation of QC Codes.

Sample Location: Haynes Creek @ 300m DS of CR 44

Collection Date/Time: 03/13/2017 14:00

Field ID: 20020642

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1879952	EPA 8321B	Sucralose**	0.094		ug/L	P321518	
	USGS O-2060-01	2,4-D	0.016		ug/L	P321386	
		Diuron	0.0040	U	ug/L	P321386	

Field ID: 20020642

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1879952	USGS O-2060-01	Fenuron	0.0080	U	ug/L	P321386	
		Imidacloprid	0.0040	U	ug/L	P321386	
		Bentazon	0.017		ug/L	P321386	
		Linuron	0.0040	UJ	ug/L	P321386	CCV
		Acetaminophen**	0.0040	U	ug/L	P321386	
		MCP	0.0040	U	ug/L	P321386	MS
		Carbamazepine**	4.0E-04	U	ug/L	P321386	
		Triclopyr**	0.010	U	ug/L	P321386	
		Primidone**	0.0080	U	ug/L	P321386	
		Fluridone**	0.0016	I	ug/L	P321386	MS, RPD

Ref. Method and Comment:

USGS O-2060-01: MS accuracy for 2,4-D, bentazon and triclopyr could not be assessed due to high concentration of parameter in the spiked sample.

USGS O-2060-01: Refer to the narrative for an explanation of QC Codes.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P321564

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P322122

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P322124

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P321642

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

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P321712

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

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P321835

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P321605

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P321538

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

Reference Method: EPA 8321B
Batch ID: P321518

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: SM 2120 B
Batch ID: P321544

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P322070

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

Reference Method: SM 2540 C-97
Batch ID: P322312

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P322175

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P322075

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P321638

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

Quality Assurance Report Method Blank Results

Reference Method: USGS O-2060-01
Batch ID: P321386

Component	Result	Code	Units
2,4-D	0.0040	U	ug/L
Acetaminophen	0.0040	U	ug/L
Bentazon	0.0040	U	ug/L
Carbamazepine	4.0E-04	U	ug/L
Diuron	0.0040	U	ug/L
Fenuron	0.0080	U	ug/L
Fluridone	4.0E-04	U	ug/L
Imidacloprid	0.0040	U	ug/L
Linuron	0.0040	U	ug/L
MCPD	0.0040	U	ug/L
Primidone	0.0080	U	ug/L
Triclopyr	0.010	U	ug/L

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P322122

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P322124

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P321642

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	106		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P321712

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P321835

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO ₂ NO ₃ -N	100		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P321605

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P321538

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

Reference Method: EPA 8321B
 Batch ID: P321518

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	67.5		P	40 - 140

Reference Method: SM 2320 B-97
 Batch ID: P322070

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	104		P	95 - 108

Reference Method: SM 4500 F-C-97
 Batch ID: P322075

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	95.4		P	92 - 103

Reference Method: SM 5310 B-00
 Batch ID: P321638

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	94.4		P	85 - 115

Reference Method: USGS O-2060-01
 Batch ID: P321386

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	88.4		P	40 - 140
Acetaminophen	97.2		P	40 - 140
Bentazon	72.4		P	40 - 140
Carbamazepine	116		P	40 - 140
Diuron	98.0		P	40 - 140
Fenuron	90.0		P	40 - 140
Fluridone	70.0		P	40 - 140
Imidacloprid	85.6		P	40 - 160
Linuron	66.4		P	40 - 140
MCP	118		P	40 - 140
Primidone	80.4		P	40 - 140
Triclopyr	86.4		P	40 - 140

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P322122

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1880009	Chloride	99.2		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P322122

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1880022	Chloride	101		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P322124

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1880009	Sulfate	97.6		P	90 - 110
1880022	Sulfate	99.3		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P321642

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1879869	Ammonia-N	101	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P321712

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1879945	Kjeldahl Nitrogen	102	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P321835

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1879944	NO2NO3-N	97.7	95.7	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P321605

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1879932	Total-P	107	98.0	P/P	90 - 110

Reference Method: EPA 8321B
 Batch ID: P321518

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1880183	Sucralose	63.4	86.4	P/P	40 - 140

Reference Method: SM 4500 F-C-97
 Batch ID: P322075

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1881143	Fluoride	98.7	99.3	P/P	91 - 105

Reference Method: SM 5310 B-00
 Batch ID: P321638

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1879738	Organic Carbon	92.3	93.8	P/P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: USGS O-2060-01
 Batch ID: P321386

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1879826	Acetaminophen	49.6	43.2	P/P	40 - 140
1879826	Carbamazepine	50.4	53.2	P/P	40 - 140
1879826	Diuron	53.2	55.2	P/P	40 - 140
1879826	Fenuron	42.0	42.4	P/P	40 - 140
1879826	Fluridone	5.17	10.0	F/F	40 - 140
1879826	Imidacloprid	103	111	P/P	40 - 160
1879826	Linuron	66.0	55.2	P/P	40 - 140
1879826	MCPP	144	143	F/F	40 - 140
1879826	Primidone	54.8	48.8	P/P	40 - 140

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P321564

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1879847	Turbidity	5.76	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P322122

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1880022	Chloride	0.125	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P322124

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1880022	Sulfate	0.862	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P321642

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1879869	Ammonia-N	0.167	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P321712

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1879945	Kjeldahl Nitrogen	1.04	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P321835

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1879944	NO2NO3-N	1.97	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P321605

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1879932	Total-P	8.41	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P321538

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1879864	O-Phosphate-P	0.635	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P321518

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1880183	Sucralose	14.6	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P321544

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1879859	Color (true)	0.148	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P322070

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1881143	Total Alkalinity	0.0281	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P322312

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1879911	TDS	4.51	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P322075

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1881143	Fluoride	0.477	Spike	P	0 - 3.0

Quality Assurance Report Precision

Reference Method: SM 5310 B-00
Batch ID: P321638

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1879738	Organic Carbon	0.753	Spike	P	0 - 20

Reference Method: USGS O-2060-01
Batch ID: P321386

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1879826	2,4-D	1.22	Spike	P	0 - 30
1879826	Acetaminophen	13.8	Spike	P	0 - 30
1879826	Bentazon	8.83	Spike	P	0 - 30
1879826	Carbamazepine	5.41	Spike	P	0 - 30
1879826	Diuron	3.69	Spike	P	0 - 30
1879826	Fenuron	0.948	Spike	P	0 - 30
1879826	Fluridone	41.8	Spike	F	0 - 30
1879826	Imidacloprid	7.11	Spike	P	0 - 30
1879826	Linuron	17.8	Spike	P	0 - 30
1879826	MCPP	1.11	Spike	P	0 - 30
1879826	Primidone	11.6	Spike	P	0 - 30
1879826	Triclopyr	7.79	Spike	P	0 - 30

* Sample, spike and/or laboratory control sample precision (LCS) is reported.
Replicate spike precision may be reported when sample results are below quantifiable levels.

Quality Assurance Report Surrogates

Lab Sample ID: 1879951
Field Sample ID: 20020168

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	106	P	40 - 150
USGS O-2060-01	2,4-D-d3	109	P	40 - 150
USGS O-2060-01	Acetaminophen-d4	63.8	P	30 - 150
USGS O-2060-01	Carbamazepine-d10	61.0	P	40 - 160
USGS O-2060-01	Diuron-d6	58.2	P	40 - 150
USGS O-2060-01	Primidone-d5	88.6	P	40 - 150

Lab Sample ID: 1879952
Field Sample ID: 20020642

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	108	P	40 - 150
USGS O-2060-01	2,4-D-d3	126	P	40 - 150
USGS O-2060-01	Acetaminophen-d4	82.8	P	30 - 150
USGS O-2060-01	Carbamazepine-d10	58.0	P	40 - 160
USGS O-2060-01	Diuron-d6	57.8	P	40 - 150
USGS O-2060-01	Primidone-d5	78.4	P	40 - 150

Quality Assurance Report Calibration Verification

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A75093

Included Lab Sample IDs: 1879933

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

Reference Method: SM 2120 B

Run ID: A75095

Included Lab Sample IDs: 1879931

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	102	P/P	85 - 115

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A75104

Included Lab Sample IDs: 1879931

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

Reference Method: SM 5310 B-00

Run ID: A75134

Included Lab Sample IDs: 1879932

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.2	95.5	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A75135

Included Lab Sample IDs: 1879951, 1879952

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	109	73.6	P/P	60 - 150

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A75137

Included Lab Sample IDs: 1879932

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

Reference Method: USGS O-2060-01

Run ID: A75159

Included Lab Sample IDs: 1879951, 1879952

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetaminophen	102	98.8	P/P	60 - 150
Carbamazepine	149	148	P/P	60 - 150
Diuron	123	142	P/P	60 - 150
Fenuron	121	125	P/P	60 - 150
Fluridone	91.6	105	P/P	60 - 150
Imidacloprid	120	128	P/P	60 - 150
Linuron	176*	184*	F/F	60 - 150
Primidone	117	100	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A75175

Included Lab Sample IDs: 1879932

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	97.2	98.8	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A75199

Included Lab Sample IDs: 1879932

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A75212

Included Lab Sample IDs: 1879932

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	100	98.4	P/P	90 - 110

Reference Method: USGS O-2060-01

Run ID: A75269

Included Lab Sample IDs: 1879951, 1879952

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	108	119	P/P	50 - 150
Bentazon	99.4	98.2	P/P	50 - 150
MCPP	104	117	P/P	50 - 150
Triclopyr	95.6	99.4	P/P	50 - 150

Reference Method: SM 2320 B-97

Run ID: A75310

Included Lab Sample IDs: 1879931

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

Reference Method: SM 4500 F-C-97

Run ID: A75310

Included Lab Sample IDs: 1879931

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	97.5	100	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A75326

Included Lab Sample IDs: 1879931

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	98.9	100	P/P	90 - 110
Sulfate	96.1	93.7	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					5.76	
EPA 300.0 Rev. 2.1	Chloride	101	99.2	101		0.125	
	Sulfate	97.3	97.6	99.3		0.862	
EPA 350.1 Rev. 2.0	Ammonia-N	106	101	100			0.167
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	108	102	101			1.04
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	100	97.7	95.7			1.97
EPA 365.1 Rev. 2.0	Total-P	102	107	98.0			8.41
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	100					0.635
EPA 8321B	Sucralose	67.5	63.4	86.4			14.6
SM 2120 B	Color (true)					0.148	
SM 2320 B-97	Total Alkalinity	104				0.0281	
SM 2540 C-97	TDS					4.51	
SM 4500 F-C-97	Fluoride	95.4	98.7	99.3			0.477
SM 5310 B-00	Organic Carbon	94.4	92.3	93.8			0.753
USGS O-2060-01	2,4-D	88.4					1.22
	Acetaminophen	97.2	49.6	43.2			13.8
	Bentazon	72.4					8.83
	Carbamazepine	116	50.4	53.2			5.41
	Diuron	98.0	53.2	55.2			3.69
	Fenuron	90.0	42.0	42.4			0.948
	Fluridone	70.0	5.17	10.0			41.8
	Imidacloprid	85.6	103	111			7.11
	Linuron	66.4	66.0	55.2			17.8
	MCP	118	143	144			1.11
	Primidone	80.4	54.8	48.8			11.6
	Triclopyr	86.4					7.79

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1879931
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1879931
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1879931
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1879932
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1879932
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1879932
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1879932
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1879933
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	1879951, 1879952
SM 2120 B / E31780	True Color measured at 450 nm	1879931
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1879931
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1879931
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1879931
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1879931
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1879932
USGS O-2060-01 / E31780	Chlorinated (phenoxy acid) herbicides in water matrices by HPLC/MS/MS	1879951, 1879952
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1879951, 1879952

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 180.1 Rev. 2.0	03/14/2017			03/14/2017 16:51	Blanca Fach	1879931
EPA 300.0 Rev. 2.1	03/14/2017			03/24/2017	Ping Hua	1879931
EPA 350.1 Rev. 2.0	03/14/2017			03/15/2017	Sofia Elnemr	1879932
EPA 351.2 Rev. 2.0	03/14/2017	03/17/2017	Adrian Shelby	03/20/2017	Joseph Suarez	1879932
EPA 353.2 Rev. 2.0	03/14/2017			03/20/2017	Beverly Y. Sanders	1879932
EPA 365.1 Rev. 2.0	03/14/2017	03/15/2017	Vijayalakshmi Reddy	03/17/2017	Lipi Saha	1879932
EPA 365.1 Rev. 2.0 dissolved	03/14/2017			03/14/2017 15:32	Ping Hua	1879933
EPA 8321B	03/14/2017	03/15/2017	Mohammad Ghaffari	03/16/2017	Mohammad Ghaffari	1879951, 1879952
SM 2120 B	03/14/2017			03/14/2017 18:40	Julie Michelle Frank	1879931
SM 2320 B-97	03/14/2017			03/22/2017	Dale L. Simmons	1879931
SM 2540 C-97	03/14/2017			03/17/2017	Yijie Li	1879931
SM 2540 D-97	03/14/2017			03/17/2017	Yijie Li	1879931
SM 4500 F-C-97	03/14/2017			03/22/2017	Dale L. Simmons	1879931
SM 5310 B-00	03/14/2017			03/15/2017	Julia Storbeck	1879932
USGS O-2060-01	03/14/2017	03/15/2017	Hoor Shaik	03/18/2017	Juyoung Kim	1879951, 1879952
	03/14/2017	03/15/2017	Hoor Shaik	03/22/2017	Juyoung Kim	1879951, 1879952