

Chemical Analysis Report

NW-DIST-2023-07-18-01

Florida DEP Laboratory
2600 Blair Stone Road
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DOH Accreditation E31780

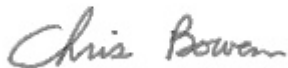
Event Description: **Hogtown Car Run**
Request ID: **RQ-2023-07-17-44**
Customer: **NW-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
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Certified by: Chris Bowen, Environmental Administrator

Date Certified: 07-AUG-2023 10:27



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: HOGTOWN DRAIN ABOVE CHAT HOLLY RD

Collection Date/Time: 07/17/2023 10:51

Field ID: G3NW0241

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2424384	DEP SOP: NU-094-1	Color (true)	330		PCU	P432648	
	EPA 180.1 Rev. 2.0	Turbidity	4.9		NTU	P432655	
	EPA 300.0 Rev. 2.1	Chloride	7.5		mg Cl/L	P432732	
		Sulfate	2.5		mg SO4/L	P432734	
	SM 2320 B-2011	Total Alkalinity	4.7		mg CaCO3/L	P432743	
	SM 2540 C-2015	TDS	86		mg/L	P433230	
	SM 2540 D-2015	TSS	6	I	mg/L	P433083	
	SM 4500-F- C-2011	Fluoride	0.025	U	mg F/L	P432746	
2424387	EPA 350.1 Rev. 2.0	Ammonia-N	0.024		mg N/L	P432861	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.0		mg N/L	P432701	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.081		mg N/L	P432687	
	EPA 365.1 Rev. 2.0	Total-P	0.017		mg P/L	P432679	
	SM 5310 B-2011	Organic Carbon	29		mg C/L	P432829	

Ref. Method and Comment:

SM 2540 D-2015: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: HOGTOWN DRAINAGE AT CHURCHILL BAYOU ROAD **Collection Date/Time: 07/17/2023 11:10**

Field ID: G3NW0038

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2424385	DEP SOP: NU-094-1	Color (true)	380		PCU	P432648	
	EPA 180.1 Rev. 2.0	Turbidity	4.9		NTU	P432655	
	EPA 300.0 Rev. 2.1	Chloride	17		mg Cl/L	P432732	
		Sulfate	4.4		mg SO4/L	P432734	
	SM 2320 B-2011	Total Alkalinity	21		mg CaCO3/L	P432743	
	SM 2540 C-2015	TDS	133		mg/L	P433230	
	SM 2540 D-2015	TSS	5	I	mg/L	P433083	
	SM 4500-F- C-2011	Fluoride	0.030	I	mg F/L	P432746	
2424388	EPA 350.1 Rev. 2.0	Ammonia-N	0.031		mg N/L	P432861	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.0		mg N/L	P432701	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.049		mg N/L	P432687	
	EPA 365.1 Rev. 2.0	Total-P	0.039		mg P/L	P432679	
	SM 5310 B-2011	Organic Carbon	31		mg C/L	P432829	

Ref. Method and Comment:

SM 2540 D-2015: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

**Sample Location: DRAIN TO MUSSET BAYOU UPSTREAM OF
DON BISHOP RD**

Collection Date/Time: 07/17/2023 11:24

Field ID: G3NW0240

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2424382	DEP SOP: NU-094-1	Color (true)	330		PCU	P432648	
	EPA 180.1 Rev. 2.0	Turbidity	3.0		NTU	P432655	
	EPA 300.0 Rev. 2.1	Chloride	11		mg Cl/L	P432731	
		Sulfate	2.5		mg SO4/L	P432733	
	SM 2320 B-2011	Total Alkalinity	9.8		mg CaCO3/L	P432743	
	SM 2540 C-2015	TDS	98		mg/L	P433230	
	SM 2540 D-2015	TSS	2	I	mg/L	P433083	
	SM 4500-F- C-2011	Fluoride	0.025	U	mg F/L	P432746	
2424383	EPA 350.1 Rev. 2.0	Ammonia-N	0.015		mg N/L	P432861	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.84		mg N/L	P432701	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.020		mg N/L	P432687	
	EPA 365.1 Rev. 2.0	Total-P	0.019		mg P/L	P432679	
	SM 5310 B-2011	Organic Carbon	26		mg C/L	P432829	
2424403	EPA 8321B	2,4-D	0.0052	I	ug/L	P432629	
		Acesulfame K	0.10	U	ug/L	P432617	
		2,4,5-T	0.0040	U	ug/L	P432629	
		AMPA	0.10	U	ug/L	P432617	
		Acetaminophen	0.0080	U	ug/L	P432629	
		Acetamiprid	0.0020	U	ug/L	P432629	
		Endothall	0.25	U	ug/L	P432617	
		Glufosinate	0.10	U	ug/L	P432617	
		Glyphosate	0.10	U	ug/L	P432617	
		Afidopyropen	0.0020	U	ug/L	P432629	
		Bentazon	8.0E-04	U	ug/L	P432629	
		Sucralose	0.069		ug/L	P432617	
		Benzovindiflupyr	0.0020	U	ug/L	P432629	
		Carbamazepine	8.0E-04	U	ug/L	P432629	
		Clothianidin	0.0020	U	ug/L	P432629	
		Dinotefuran	0.0020	U	ug/L	P432629	
		Diuron	0.0020	U	ug/L	P432629	
		Fenuron	0.032	U	ug/L	P432629	
		Fluridone	0.0021	I	ug/L	P432629	
		Imazapyr	0.0040	U	ug/L	P432629	
		Hydrocodone	0.0020	U	ug/L	P432629	
		Ibuprofen	0.080	U	ug/L	P432629	
		Imidacloprid	0.0062	I	ug/L	P432629	
		Linuron	0.0040	U	ug/L	P432629	
		Mandestrobin	0.0020	U	ug/L	P432629	
		MCP	0.0020	U	ug/L	P432629	
		Naproxen	0.0080	U	ug/L	P432629	
		Primidone	0.0040	U	ug/L	P432629	
		Pyraclostrobin	0.0020	U	ug/L	P432629	
		Silvex	0.0040	U	ug/L	P432629	

Field ID: G3NW0240

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2424403	EPA 8321B	Thiamethoxam	0.0020	U	ug/L	P432629	
		Tolfenpyrad	0.0020	U	ug/L	P432629	
		Triclopyr	0.0040	U	ug/L	P432629	

Ref. Method and Comment:
SM 2540 D-2015: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: DRAIN TO HEWETT BAYOU

Collection Date/Time: 07/17/2023 12:02

Field ID: G3NW0238

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2424386	DEP SOP: NU-094-1	Color (true)	510		PCU	P432648	
	EPA 180.1 Rev. 2.0	Turbidity	2.8		NTU	P432655	
	EPA 300.0 Rev. 2.1	Chloride	10	A	mg Cl/L	P432732	
		Sulfate	1.2	A	mg SO4/L	P432734	
	SM 2320 B-2011	Total Alkalinity	10		mg CaCO3/L	P432743	
	SM 2540 C-2015	TDS	110		mg/L	P433230	
	SM 2540 D-2015	TSS	2	I	mg/L	P433083	
	SM 4500-F- C-2011	Fluoride	0.025	U	mg F/L	P432746	
2424389	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P432861	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.89		mg N/L	P432701	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P432688	
	EPA 365.1 Rev. 2.0	Total-P	0.015		mg P/L	P432679	
	SM 5310 B-2011	Organic Carbon	34		mg C/L	P432829	

Ref. Method and Comment:

SM 2540 D-2015: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Quality Assurance Report Method Blank Results

Reference Method: DEP SOP: NU-094-1
Batch ID: P432648

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P432655

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P432731

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P432732

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P432733

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P432734

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P432861

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P432701

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P432687

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P432688

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P432679

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

Reference Method: EPA 8321B
Batch ID: P432617

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: EPA 8321B
Batch ID: P432629

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
2,4,5-T	0.0040	U	ug/L
Acetaminophen	0.0080	U	ug/L
Acetamiprid	0.0020	U	ug/L
Afidopyropen	0.0020	U	ug/L
Bentazon	8.0E-04	U	ug/L
Benzovindiflupyr	0.0020	U	ug/L
Carbamazepine	8.0E-04	U	ug/L
Clothianidin	0.0020	U	ug/L
Dinotefuran	0.0020	U	ug/L
Diuron	0.0020	U	ug/L
Fenuron	0.032	U	ug/L
Fluridone	8.0E-04	U	ug/L
Hydrocodone	0.0020	U	ug/L
Ibuprofen	0.080	U	ug/L
Imazapyr	0.0040	U	ug/L
Imidacloprid	0.0020	U	ug/L
Linuron	0.0040	U	ug/L
Mandestrobin	0.0020	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
Silvex	0.0040	U	ug/L
Thiamethoxam	0.0020	U	ug/L
Tolfenpyrad	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 2320 B-2011
Batch ID: P432743

Component	Result	Code	Units
Total Alkalinity	0.65	U	mg CaCO ₃ /L

Reference Method: SM 2540 C-2015
Batch ID: P433230

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2015
Batch ID: P433083

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P432746

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P432829

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: DEP SOP: NU-094-1
Batch ID: P432648

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	98.6		P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P432655

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Turbidity	99.2		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P432731

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P432732

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P432733

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	96.5		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P432734

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	98.3		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P432861

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	94.4		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P432701

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P432687

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P432688

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: P432679

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

Reference Method: EPA 8321B

Batch ID: P432617

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	98.1		P	40 - 150
AMPA	126		P	40 - 150
Endothall	110		P	40 - 150
Glufosinate	84.1		P	40 - 150
Glyphosate	86.3		P	40 - 150
Sucralose	107		P	40 - 150

Reference Method: EPA 8321B

Batch ID: P432629

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	82.0		P	40 - 150
2,4,5-T	68.9		P	40 - 150
Acetaminophen	70.7		P	30 - 150
Acetamiprid	75.7		P	40 - 150
Afidopyropen	69.0		P	30 - 150
Bentazon	131		P	30 - 150
Benzovindiflupyr	92.3		P	40 - 150
Carbamazepine	75.3		P	40 - 150
Clothianidin	84.8		P	40 - 150
Dinotefuran	92.3		P	40 - 150
Diuron	71.7		P	40 - 150
Fenuron	101		P	40 - 150
Fluridone	92.6		P	40 - 150
Hydrocodone	84.7		P	40 - 150
Ibuprofen	67.9		P	40 - 150
Imazapyr	84.9		P	40 - 150
Imidacloprid	77.9		P	40 - 150
Linuron	69.3		P	40 - 150
Mandestrobin	91.3		P	40 - 150
MCPP	84.3		P	40 - 150
Naproxen	72.8		P	40 - 150
Primidone	78.8		P	40 - 150
Pyraclostrobin	87.3		P	40 - 150
Silvex	77.1		P	40 - 150
Thiamethoxam	91.3		P	40 - 150
Tolfenpyrad	60.6		P	30 - 150
Triclopyr	68.6		P	40 - 150

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-2011
Batch ID: P432743

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	95.0		P	92 - 105

Reference Method: SM 2540 C-2015
Batch ID: P433230

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

Reference Method: SM 2540 D-2015
Batch ID: P433083

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	103		P	85 - 106

Reference Method: SM 4500-F- C-2011
Batch ID: P432746

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	102		P	94 - 106

Reference Method: SM 5310 B-2011
Batch ID: P432829

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	94.3		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P432731

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2423991	Chloride	99.3		P	90 - 110
2424316	Chloride	101		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P432732

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2424386	Chloride	103		P	90 - 110
2424505	Chloride	102		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P432733

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2423991	Sulfate	91.8		P	90 - 110
2424316	Sulfate	97.3		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P432734

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2424386	Sulfate	98.6		P	90 - 110
2424505	Sulfate	96.9		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P432861

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2424319	Ammonia-N	94.8	96.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P432701

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2424318	Kjeldahl Nitrogen	103	108	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P432687

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2424354	NO2NO3-N	99.0	99.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P432688

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2424415	NO2NO3-N	99.0	95.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P432679

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
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Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P432679

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2424318	Total-P	98.8	102	P/P	90 - 110

Reference Method: EPA 8321B

Batch ID: P432617

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2424524	Acesulfame K	130	136	P/P	40 - 150
2424524	AMPA	83.7	80.8	P/P	40 - 150
2424524	Endothall	94.5	97.2	P/P	40 - 150
2424524	Glufosinate	63.7	65.6	P/P	40 - 150
2424524	Glyphosate	63.0	62.6	P/P	40 - 150
2424524	Sucralose	109	113	P/P	40 - 150

Reference Method: EPA 8321B

Batch ID: P432629

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2424473	2,4-D	98.9	90.0	P/P	40 - 150
2424473	2,4,5-T	97.9	82.2	P/P	40 - 150
2424473	Acetaminophen	73.7	70.9	P/P	30 - 150
2424473	Acetamiprid	58.0	48.3	P/P	40 - 150
2424473	Afidopyrophen	64.3	48.0	P/P	30 - 150
2424473	Bentazon	85.2	79.3	P/P	30 - 150
2424473	Benzovindiflupyr	83.9	77.2	P/P	40 - 150
2424473	Carbamazepine	51.8	46.5	P/P	40 - 150
2424473	Clothianidin	76.5	70.0	P/P	40 - 150
2424473	Dinotefuran	69.1	70.9	P/P	40 - 150
2424473	Diuron	40.4	45.0	P/P	40 - 150
2424473	Fenuron	58.2	51.4	P/P	40 - 150
2424473	Fluridone	76.7	71.5	P/P	40 - 150
2424473	Hydrocodone	60.9	59.2	P/P	40 - 150
2424473	Ibuprofen	65.0	51.8	P/P	40 - 150
2424473	Imazapyr	90.2	83.5	P/P	40 - 150
2424473	Imidacloprid	108	99.2	P/P	40 - 150
2424473	Linuron	47.0	52.0	P/P	40 - 150
2424473	Mandestrobin	82.9	74.6	P/P	40 - 150
2424473	MCPP	105	99.5	P/P	40 - 150
2424473	Naproxen	86.0	77.7	P/P	40 - 150
2424473	Primidone	78.4	66.6	P/P	40 - 150
2424473	Pyraclostrobin	82.9	73.2	P/P	40 - 150
2424473	Silvex	91.1	90.1	P/P	40 - 150
2424473	Thiamethoxam	71.6	69.1	P/P	40 - 150
2424473	Tolfenpyrad	61.4	52.6	P/P	30 - 150
2424473	Triclopyr	89.6	77.6	P/P	40 - 150

Reference Method: SM 4500-F- C-2011

Batch ID: P432746

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2424548	Fluoride	102	103	P/P	94 - 106

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: SM 5310 B-2011
Batch ID: P432829

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2424103	Organic Carbon	95.1	97.4	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P432648

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2424316	Color (true)	5.08	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P432655

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2424316	Turbidity	2.07	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P432731

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2423991	Chloride	0.123	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P432732

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2424386	Chloride	0.685	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P432733

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2423991	Sulfate	0.234	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P432734

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2424386	Sulfate	2.07	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P432861

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2424319	Ammonia-N	1.27	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P432701

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2424318	Kjeldahl Nitrogen	4.62	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P432687

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2424354	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P432688

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2424415	NO2NO3-N	3.60	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P432679

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2424318	Total-P	3.20	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P432617

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2424524	Acesulfame K	3.94	Spike	P	0 - 30
2424524	AMPA	3.60	Spike	P	0 - 30
2424524	Endothall	2.85	Spike	P	0 - 30
2424524	Glufosinate	3.00	Spike	P	0 - 30
2424524	Glyphosate	0.581	Spike	P	0 - 30
2424524	Sucralose	3.45	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P432629

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2424473	2,4-D	9.44	Spike	P	0 - 30
2424473	2,4,5-T	17.5	Spike	P	0 - 30
2424473	Acetaminophen	3.84	Spike	P	0 - 30
2424473	Acetamiprid	18.3	Spike	P	0 - 30
2424473	Afidopyropen	28.9	Spike	P	0 - 30
2424473	Bentazon	7.25	Spike	P	0 - 30
2424473	Benzovindiflupyr	8.31	Spike	P	0 - 30
2424473	Carbamazepine	10.8	Spike	P	0 - 30
2424473	Clothianidin	8.83	Spike	P	0 - 30
2424473	Dinotefuran	2.56	Spike	P	0 - 30
2424473	Diuron	10.6	Spike	P	0 - 30
2424473	Fenuron	12.3	Spike	P	0 - 30
2424473	Fluridone	6.96	Spike	P	0 - 30
2424473	Hydrocodone	2.85	Spike	P	0 - 30
2424473	Ibuprofen	22.7	Spike	P	0 - 30
2424473	Imazapyr	6.22	Spike	P	0 - 30
2424473	Imidacloprid	8.13	Spike	P	0 - 30
2424473	Linuron	10.2	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P432629

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2424473	Mandestrobin	10.5	Spike	P	0 - 30
2424473	MCP	5.55	Spike	P	0 - 30
2424473	Naproxen	10.2	Spike	P	0 - 30
2424473	Primidone	16.3	Spike	P	0 - 30
2424473	Pyraclostrobin	12.5	Spike	P	0 - 30
2424473	Silvex	1.10	Spike	P	0 - 30
2424473	Thiamethoxam	3.45	Spike	P	0 - 30
2424473	Tolfenpyrad	15.4	Spike	P	0 - 30
2424473	Triclopyr	14.4	Spike	P	0 - 30

Reference Method: SM 2320 B-2011
Batch ID: P432743

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2424548	Total Alkalinity	0.463	Sample	P	0 - 3.9

Reference Method: SM 2540 C-2015
Batch ID: P433230

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2424465	TDS	4.86	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P432746

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2424548	Fluoride	0.953	Spike	P	0 - 1.9

Reference Method: SM 5310 B-2011
Batch ID: P432829

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2424103	Organic Carbon	1.80	Spike	P	0 - 20

* Sample, spike and/or laboratory control sample precision (LCS) is reported.

Quality Assurance Report Surrogates

Lab Sample ID: 2424403

Field Sample ID: G3NW0240

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	88.6	P	30 - 160
EPA 8321B	Acetaminophen-d4	64.5	P	30 - 160
EPA 8321B	Carbamazepine-d10	36.9	P	30 - 160
EPA 8321B	Diuron-d6	75.2	P	30 - 160
EPA 8321B	Endothall-d6	94.9	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	58.0	P	30 - 160
EPA 8321B	Ibuprofen-d3	64.8	P	30 - 160
EPA 8321B	Primidone-d5	74.4	P	30 - 160
EPA 8321B	Sucralose-d6	111	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: DEP SOP: NU-094-1

Run ID: A120464

Included Lab Sample IDs: 2424382, 2424384, 2424385, 2424386

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	103	103	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A120467

Included Lab Sample IDs: 2424382, 2424384, 2424385, 2424386

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A120479

Included Lab Sample IDs: 2424382, 2424384, 2424385, 2424386

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	101	100	P/P	90 - 110
Chloride	99.8	101	P/P	90 - 110
Sulfate	100	99.7	P/P	90 - 110
Sulfate	98.9	100	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A120484

Included Lab Sample IDs: 2424383, 2424387, 2424388, 2424389

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

Reference Method: EPA 8321B

Run ID: A120504

Included Lab Sample IDs: 2424403

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	99.5	105	P/P	60 - 160
Sucralose	102	95.5	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A120505

Included Lab Sample IDs: 2424403

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	136	83.0	P/P	60 - 160
Endothall	99.7	125	P/P	60 - 160
Glufosinate	86.7	87.7	P/P	60 - 160
Glyphosate	80.0	98.3	P/P	60 - 160

Reference Method: SM 2320 B-2011

Run ID: A120511

Included Lab Sample IDs: 2424382, 2424384, 2424385, 2424386

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	97.9	94.8	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 4500-F- C-2011

Run ID: A120511

Included Lab Sample IDs: 2424382, 2424384, 2424385, 2424386

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	104	106	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A120523

Included Lab Sample IDs: 2424383, 2424387, 2424388, 2424389

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.2	99.0	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A120544

Included Lab Sample IDs: 2424383, 2424387, 2424388, 2424389

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.3	97.6	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A120559

Included Lab Sample IDs: 2424383, 2424387, 2424388, 2424389

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	97.6	98.3	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A120571

Included Lab Sample IDs: 2424403

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	104	115	P/P	50 - 150
2,4,5-T	99.5	98.5	P/P	50 - 150
Acetaminophen	106	96.8	P/P	60 - 160
Acetamiprid	123	123	P/P	50 - 150
Afidopyropen	115	126	P/P	50 - 150
Bentazon	127	125	P/P	50 - 160
Benzovindiflupyr	111	125	P/P	50 - 150
Carbamazepine	125	118	P/P	60 - 150
Clothianidin	118	104	P/P	60 - 150
Dinotefuran	108	110	P/P	50 - 150
Diuron	131	124	P/P	60 - 160
Fenuron	112	112	P/P	60 - 150
Fluridone	128	129	P/P	60 - 160
Hydrocodone	117	118	P/P	60 - 150
Ibuprofen	75.4	96.0	P/P	50 - 160
Imazapyr	97.2	95.4	P/P	50 - 150
Imidacloprid	102	97.8	P/P	60 - 150
Linuron	97.2	86.8	P/P	60 - 150
Mandestrobin	118	123	P/P	50 - 150
MCPP	101	101	P/P	50 - 150
Naproxen	75.3	89.9	P/P	50 - 160
Primidone	96.6	105	P/P	60 - 150
Pyraclostrobin	121	128	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A120571
Included Lab Sample IDs: 2424403

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Silvex	98.8	102	P/P	50 - 150
Thiamethoxam	134	115	P/P	50 - 150
Tolfenpyrad	117	116	P/P	60 - 150
Triclopyr	100	96.8	P/P	50 - 150

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A120578
Included Lab Sample IDs: 2424383, 2424387, 2424388, 2424389

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	104	102	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		Precision	
					LCS	MS
DEP SOP: NU-094-1	Color (true)	98.6			5.08	
EPA 180.1 Rev. 2.0	Turbidity	99.2			2.07	
EPA 300.0 Rev. 2.1	Chloride	98.8	99.3	101	0.123	
	Chloride	101	103	102	0.685	
	Sulfate	96.5	91.8	97.3	0.234	
	Sulfate	98.3	98.6	96.9	2.07	
EPA 350.1 Rev. 2.0	Ammonia-N	94.4	94.8	96.6		1.27
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	101	103	108		4.62
EPA 353.2 Rev. 2.0	NO2NO3-N	99.0	99.0	99.0		0.0
	NO2NO3-N	100	99.0	95.5		3.60
EPA 365.1 Rev. 2.0	Total-P	98.6	98.8	102		3.20
EPA 8321B	2,4-D	82.0	98.9	90.0		9.44
	2,4,5-T	68.9	97.9	82.2		17.5
	Acesulfame K	98.1	130	136		3.94
	Acetaminophen	70.7	73.7	70.9		3.84
	Acetamiprid	75.7	58.0	48.3		18.3
	Afidopyropen	69.0	64.3	48.0		28.9
	AMPA	126	80.8	83.7		3.60
	Bentazon	131	85.2	79.3		7.25
	Benzovindiflupyr	92.3	83.9	77.2		8.31
	Carbamazepine	75.3	51.8	46.5		10.8
	Clothianidin	84.8	76.5	70.0		8.83
	Dinotefuran	92.3	69.1	70.9		2.56
	Diuron	71.7	40.4	45.0		10.6
	Endothall	110	94.5	97.2		2.85
	Fenuron	101	58.2	51.4		12.3
	Fluridone	92.6	76.7	71.5		6.96
	Glufosinate	84.1	63.7	65.6		3.00
	Glyphosate	86.3	62.6	63.0		0.581
	Hydrocodone	84.7	60.9	59.2		2.85
	Ibuprofen	67.9	65.0	51.8		22.7
	Imazapyr	84.9	90.2	83.5		6.22
	Imidacloprid	77.9	108	99.2		8.13
	Linuron	69.3	47.0	52.0		10.2
	Mandestrobin	91.3	82.9	74.6		10.5
	MCPP	84.3	105	99.5		5.55
	Naproxen	72.8	86.0	77.7		10.2
	Primidone	78.8	78.4	66.6		16.3
	Pyraclostrobin	87.3	82.9	73.2		12.5
	Silvex	77.1	91.1	90.1		1.10
	Sucralose	107	109	113		3.45
	Thiamethoxam	91.3	71.6	69.1		3.45
	Tolfenpyrad	60.6	61.4	52.6		15.4
	Triclopyr	68.6	89.6	77.6		14.4
SM 2320 B-2011	Total Alkalinity	95.0			0.463	
SM 2540 C-2015	TDS	102			4.86	
SM 2540 D-2015	TSS	103				
SM 4500-F- C-2011	Fluoride	102	102	103		0.953
SM 5310 B-2011	Organic Carbon	94.3	95.1	97.4		1.80

Reference Method Descriptions

Method	Description	Associated Samples
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Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2424382, 2424384, 2424385, 2424386
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2424382, 2424384, 2424385, 2424386
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2424382, 2424384, 2424385, 2424386
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2424382, 2424384, 2424385, 2424386
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2424383, 2424387, 2424388, 2424389
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2424383, 2424387, 2424388, 2424389
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2424383, 2424387, 2424388, 2424389
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2424383, 2424387, 2424388, 2424389
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2424403
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2424382, 2424384, 2424385, 2424386
SM 2540 C-2015	Total Dissolved Solids in aqueous matrices	2424382, 2424384, 2424385, 2424386
SM 2540 D-2015	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2424382, 2424384, 2424385, 2424386
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2424382, 2424384, 2424385, 2424386
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2424383, 2424387, 2424388, 2424389

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
DEP SOP: NU-094-1	07/18/2023			07/18/2023 15:02	Chandler E Cox	2424382
	07/18/2023			07/18/2023 15:03	Chandler E Cox	2424384
	07/18/2023			07/18/2023 15:04	Chandler E Cox	2424385, 2424386
EPA 180.1 Rev. 2.0	07/18/2023			07/18/2023 13:50	Anna M. Plaviak	2424382
	07/18/2023			07/18/2023 13:51	Anna M. Plaviak	2424384
	07/18/2023			07/18/2023 13:52	Anna M. Plaviak	2424385
EPA 300.0 Rev. 2.1	07/18/2023			07/18/2023 13:53	Anna M. Plaviak	2424386
	07/18/2023			07/19/2023 17:32	James L Waggeberby	2424382
	07/18/2023			07/19/2023 19:03	James L Waggeberby	2424386
EPA 350.1 Rev. 2.0	07/18/2023			07/19/2023 20:03	James L Waggeberby	2424384
	07/18/2023			07/19/2023 20:18	James L Waggeberby	2424385
	07/18/2023			07/21/2023 12:03	Khloe J Berg	2424383
EPA 351.2 Rev. 2.0	07/18/2023			07/21/2023 12:04	Khloe J Berg	2424387
	07/18/2023			07/21/2023 12:05	Khloe J Berg	2424388
	07/18/2023			07/21/2023 12:07	Khloe J Berg	2424389
EPA 353.2 Rev. 2.0	07/18/2023	07/19/2023 12:01	Dana G. Hughes	07/24/2023 10:03	Samantha L Bates	2424383
	07/18/2023	07/19/2023 12:01	Dana G. Hughes	07/24/2023 10:05	Samantha L Bates	2424387
	07/18/2023	07/19/2023 12:01	Dana G. Hughes	07/24/2023 10:07	Samantha L Bates	2424388
EPA 365.1 Rev. 2.0	07/18/2023	07/19/2023 12:01	Dana G. Hughes	07/24/2023 10:08	Samantha L Bates	2424389
	07/18/2023			07/19/2023 09:43	Beverly Y. Sanders	2424383
	07/18/2023			07/19/2023 09:44	Beverly Y. Sanders	2424387
EPA 8321B	07/18/2023			07/19/2023 09:45	Beverly Y. Sanders	2424388
	07/18/2023			07/19/2023 09:58	Beverly Y. Sanders	2424389
	07/18/2023	07/19/2023 15:38	Adam P Silver	07/20/2023 14:21	Simonne.V. Calhoun	2424383
SM 2320 B-2011	07/18/2023	07/19/2023 15:38	Adam P Silver	07/20/2023 14:22	Simonne.V. Calhoun	2424387
	07/18/2023	07/19/2023 15:38	Adam P Silver	07/20/2023 14:23	Simonne.V. Calhoun	2424388
	07/18/2023	07/19/2023 15:38	Adam P Silver	07/20/2023 14:24	Simonne.V. Calhoun	2424389
SM 2540 C-2015	07/18/2023	07/19/2023 03:00	Tae K Lee	07/19/2023 05:05	Tae K Lee	2424403
	07/18/2023	07/19/2023 03:00	Tae K Lee	07/19/2023 09:35	Tae K Lee	2424403
	07/18/2023	07/19/2023 14:00	Hoor Shaik	07/21/2023 05:29	Juyoung Kim	2424403
SM 2540 D-2015	07/18/2023			07/19/2023 20:37	Dale L. Simmons	2424382
	07/18/2023			07/19/2023 20:48	Dale L. Simmons	2424384
	07/18/2023			07/19/2023 21:01	Dale L. Simmons	2424385
SM 4500-F- C-2011	07/18/2023			07/19/2023 21:13	Dale L. Simmons	2424386
	07/18/2023			07/21/2023 17:02	Yijie Li	2424382, 2424384, 2424385, 2424386
	07/18/2023			07/21/2023 17:02	Yijie Li	2424382, 2424384, 2424385, 2424386
	07/18/2023			07/19/2023 20:37	Dale L. Simmons	2424382
	07/18/2023			07/19/2023 20:48	Dale L. Simmons	2424384
	07/18/2023			07/19/2023 21:01	Dale L. Simmons	2424385
	07/18/2023			07/19/2023 21:13	Dale L. Simmons	2424386

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 5310 B-2011	07/18/2023			07/21/2023 03:34	Elise M. Gillis	2424383
	07/18/2023			07/21/2023 03:49	Elise M. Gillis	2424387
	07/18/2023			07/21/2023 04:03	Elise M. Gillis	2424388
	07/18/2023			07/21/2023 04:18	Elise M. Gillis	2424389