

Chemical Analysis Report

NE-DIST-2023-10-06-01

Florida DEP Laboratory
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DOH Accreditation E31780

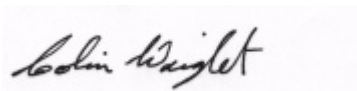
Event Description: **LSJR East**
Request ID: **RQ-2023-10-09-41**
Customer: **NE-DIST**
Project ID: **SMP**

Send Reports to:
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Certified by: Colin Wright, Program Administrator

Date Certified: 02-NOV-2023 09:04

A handwritten signature in black ink, appearing to read "Colin Wright", is displayed on a light pink rectangular background.

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: Metals, 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: GREENFIELD CREEK AT QUEENS HARBOUR BLVD **Collection Date/Time: 10/05/2023 11:50**

Field ID: 20030809

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2443482	EPA 200.7 Rev. 4.4	Calcium	120		mg/L	P436194	
		Iron	300	I	ug/L	P436194	
		Magnesium	287		mg/L	P436194	
		Potassium	93		mg/L	P436194	
		Sodium	2.22E+03		mg/L	P436194	
		Strontium	1.91E+03		ug/L	P436194	
		Tin	9.0	I	ug/L	P436194	
		Titanium	2.7	I	ug/L	P436194	
		Vanadium	6.0	U	ug/L	P436194	
		Zinc	15	U	ug/L	P436194	
	EPA 200.8 Rev. 5.4	Aluminum	151		ug/L	P436194	
		Antimony	0.20	U	ug/L	P436194	
		Arsenic	1.57		ug/L	P436194	
		Barium	29.8		ug/L	P436194	
		Beryllium	0.040	U	ug/L	P436194	
		Boron	910		ug/L	P436194	
		Cadmium	0.080	U	ug/L	P436194	
		Chromium	1.6	U	ug/L	P436194	
		Cobalt	0.98		ug/L	P436194	
		Copper	2.3	I	ug/L	P436194	
		Lead	0.80	U	ug/L	P436194	
		Manganese	29.2		ug/L	P436194	
		Molybdenum	2.1	I	ug/L	P436194	
		Nickel	5.0	U	ug/L	P436194	
		Selenium	0.80	U	ug/L	P436194	
		Silver	0.040	U	ug/L	P436194	
		Thallium	0.40	U	ug/L	P436194	
	SM 2340 B-2011	Hardness	1.48E+03		mg/L	P436194	

Ref. Method and Comment:

EPA 200.7 Rev. 4.4: Batch matrix spike recoveries for calcium, magnesium, potassium, sodium and strontium are unavailable because of high analyte concentration in the QC sample.

Sample Location: GREENFIELD CR AT HODGES RD

Collection Date/Time: 10/05/2023 12:05

Field ID: G2NE1145

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2443464	DEP SOP: NU-094-1	Color (true)	68		PCU	P436144	
	EPA 180.1 Rev. 2.0	Turbidity	2.1		NTU	P436138	
	EPA 300.0 Rev. 2.1	Chloride	45		mg Cl/L	P436323	
		Sulfate	39		mg SO4/L	P436326	
	SM 2320 B-2011	Total Alkalinity	81		mg CaCO3/L	P436470	
	SM 2540 C-2015	TDS	261		mg/L	P436766	RPD
	SM 2540 D-2015	TSS	4	I	mg/L	P436583	
	SM 4500-F- C-2011	Fluoride	0.076	I	mg F/L	P436359	
2443465	EPA 350.1 Rev. 2.0	Ammonia-N	0.10		mg N/L	P436288	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.92		mg N/L	P436272	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.15		mg N/L	P436454	
	EPA 365.1 Rev. 2.0	Total-P	0.069		mg P/L	P436221	MS
	SM 5310 B-2011	Organic Carbon	15		mg C/L	P436407	

Ref. Method and Comment:

SM 4500-F- C-2011: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: HOGPEN CR AT SAN PABLO ROAD

Collection Date/Time: 10/05/2023 12:25

Field ID: 20030696

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2443462	DEP SOP: NU-094-1	Color (true)	52		PCU	P436144	
	EPA 180.1 Rev. 2.0	Turbidity	6.3		NTU	P436138	
	EPA 300.0 Rev. 2.1	Chloride	3.9E+03		mg Cl/L	P436323	
		Sulfate	570		mg SO4/L	P436326	
	SM 2320 B-2011	Total Alkalinity	84	A	mg CaCO3/L	P436358	
	SM 2540 C-2015	TDS	6.20E+03	J	mg/L	P436766	RPD
	SM 2540 D-2015	TSS	7	I	mg/L	P436583	
	SM 4500-F- C-2011	Fluoride	0.33		mg F/L	P436360	
2443463	EPA 350.1 Rev. 2.0	Ammonia-N	0.059		mg N/L	P436423	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.0		mg N/L	P436273	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.22		mg N/L	P436448	
	EPA 365.1 Rev. 2.0	Total-P	0.11		mg P/L	P436222	MS
	SM 5310 B-2011	Organic Carbon	12		mg C/L	P436407	

Ref. Method and Comment:

SM 2540 C-2015: Constant dry weight was not attained.

Sample Location: OPEN CREEK AT SAN PABLO ROAD

Collection Date/Time: 10/05/2023 12:40

Field ID: 20030695

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2443478	EPA 8270E	Aldrin	0.67	U	ng/L	P436250	
		Alpha-BHC	0.10	U	ng/L	P436250	
		Alpha-Chlordane	0.21	U	ng/L	P436250	
		PCB-1016	2.1	U	ng/L	P436250	
		Beta-BHC	0.10	I	ng/L	P436250	
		PCB-1221	2.1	U	ng/L	P436250	
		Beta-Cyfluthrin	1.3	U	ng/L	P436250	
		PCB-1232	2.1	U	ng/L	P436250	
		Bifenthrin	0.51	U	ng/L	P436250	
		PCB-1242	2.1	U	ng/L	P436250	
		PCB-1248	2.1	U	ng/L	P436250	
		Chlorothalonil	3.7	U	ng/L	P436250	
		PCB-1254	2.1	U	ng/L	P436250	
		Cis-Nonachlor	0.21	U	ng/L	P436250	
		PCB-1260	2.1	U	ng/L	P436250	
		Cypermethrin	1.5	U	ng/L	P436250	
		Dacthal	0.15	U	ng/L	P436250	
		DDD-p,p'	0.26	U	ng/L	P436250	
		DDE-p,p'	0.21	U	ng/L	P436250	
		DDT-p,p'	1.4	I	ng/L	P436250	
		Delta-BHC	0.41	I J	ng/L	P436250	RPD
		Deltamethrin	1.3	U	ng/L	P436250	
		Dichlobenil	0.26	U	ng/L	P436250	
		Dicofol	1.3	U	ng/L	P436250	
		Dieldrin	0.41	U	ng/L	P436250	
		Endosulfan I	0.41	U	ng/L	P436250	
		Endosulfan II	0.93	U	ng/L	P436250	
		Endosulfan Sulfate	0.31	U	ng/L	P436250	
		Endrin	0.93	U	ng/L	P436250	
		Endrin Aldehyde	0.77	U	ng/L	P436250	
		Endrin Ketone	0.41	U	ng/L	P436250	
		Esfenvalerate	0.77	U	ng/L	P436250	
		Ethalfuralin	0.15	UJ	ng/L	P436250	MS
		Fenpropathrin	0.26	U	ng/L	P436250	
		Gamma-BHC	0.13	U	ng/L	P436250	
		Gamma-Chlordane	0.21	U	ng/L	P436250	
		Heptachlor	0.21	U	ng/L	P436250	
		Heptachlor Epoxide	0.26	U	ng/L	P436250	
		Hexachlorobenzene**	1.0	U	ng/L	P436250	
		Kepone	14	UJ	ng/L	P436250	CCV
		Lambda-Cyhalothrin	0.77	U	ng/L	P436250	
		Methoprene	0.77	U	ng/L	P436250	
		Methoxychlor	0.31	U	ng/L	P436250	
		MGK-264	0.21	U	ng/L	P436250	

Field ID: 20030695

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2443478	EPA 8270E	Mirex	0.36	UJ	ng/L	P436250	LCS
		Oxychlordane	0.31	U	ng/L	P436250	
		Permethrin	1.6	U	ng/L	P436250	
		Phenothrin	0.93	U	ng/L	P436250	
		Piperonyl Butoxide	0.19	I	ng/L	P436250	
		Prallethrin	2.1	U	ng/L	P436250	
		Tau-Fluvalinate	0.26	U	ng/L	P436250	
		Tetramethrin	0.77	U	ng/L	P436250	
		Trans-Nonachlor	0.21	UJ	ng/L	P436250	RPD
		Triclosan Methyl	0.15	U	ng/L	P436250	
		Trifluralin	0.21	U	ng/L	P436250	
	EPA 8276	Chlordane	2.1	U	ng/L	P436250	
		Toxaphene	15	U	ng/L	P436250	

Ref. Method and Comment:
EPA 8270E: Refer to the Lab Analysis Report for an explanation of QC Codes.

Quality Assurance Report Method Blank Results

Reference Method: DEP SOP: NU-094-1
Batch ID: P436144

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P436138

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P436194

Component	Result	Code	Units
Calcium	0.075	U	mg/L
Iron	30	U	ug/L
Magnesium	0.040	U	mg/L
Potassium	0.30	U	mg/L
Sodium	0.50	U	mg/L
Strontium	2.0	U	ug/L
Tin	3.0	U	ug/L
Titanium	0.75	U	ug/L
Vanadium	2.0	U	ug/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P436194

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Antimony	0.050	U	ug/L
Arsenic	0.050	U	ug/L
Barium	0.20	U	ug/L
Beryllium	0.010	U	ug/L
Boron	2.0	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.40	U	ug/L
Cobalt	0.020	U	ug/L
Copper	0.40	U	ug/L
Lead	0.20	U	ug/L
Manganese	0.10	U	ug/L
Molybdenum	0.15	U	ug/L
Nickel	0.50	U	ug/L
Selenium	0.20	U	ug/L
Silver	0.010	U	ug/L
Thallium	0.10	U	ug/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P436323

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P436326

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P436288

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P436423

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P436272

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P436273

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P436448

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P436454

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P436221

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P436222

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8270E

Batch ID: P436250

Component	Result	Code	Units
Aldrin	0.65	U	ng/L
Alpha-BHC	0.10	U	ng/L
Alpha-Chlordane	0.20	U	ng/L
Beta-BHC	0.10	U	ng/L
Beta-Cyfluthrin	1.2	U	ng/L
Bifenthrin	0.50	U	ng/L
Chlorothalonil	3.6	U	ng/L
Cis-Nonachlor	0.20	U	ng/L
Cypermethrin	1.5	U	ng/L
Dacthal	0.15	U	ng/L
DDD-p,p'	0.25	U	ng/L
DDE-p,p'	0.20	U	ng/L
DDT-p,p'	0.80	U	ng/L
Delta-BHC	0.40	U	ng/L
Deltamethrin	1.2	U	ng/L
Dichlobenil	0.25	U	ng/L
Dicofol	1.2	U	ng/L
Dieldrin	0.40	U	ng/L
Endosulfan I	0.40	U	ng/L
Endosulfan II	0.90	U	ng/L
Endosulfan Sulfate	0.30	U	ng/L
Endrin	0.90	U	ng/L
Endrin Aldehyde	0.75	U	ng/L
Endrin Ketone	0.40	U	ng/L
Esfenvalerate	0.75	U	ng/L
Ethalfuralin	0.15	U	ng/L
Fenpropathrin	0.25	U	ng/L
Gamma-BHC	0.12	U	ng/L
Gamma-Chlordane	0.20	U	ng/L
Heptachlor	0.20	U	ng/L
Heptachlor Epoxide	0.25	U	ng/L
Hexachlorobenzene	1.0	U	ng/L
Kepone	14	U	ng/L
Lambda-Cyhalothrin	0.75	U	ng/L
Methoprene	0.75	U	ng/L
Methoxychlor	0.30	U	ng/L
MGK-264	0.20	U	ng/L
Mirex	0.35	U	ng/L
Oxychlordane	0.30	U	ng/L
PCB-1016	2.0	U	ng/L
PCB-1221	2.0	U	ng/L
PCB-1232	2.0	U	ng/L
PCB-1242	2.0	U	ng/L
PCB-1248	2.0	U	ng/L
PCB-1254	2.0	U	ng/L
PCB-1260	2.0	U	ng/L
Permethrin	1.6	U	ng/L
Phenothrin	0.90	U	ng/L
Piperonyl Butoxide	0.15	U	ng/L
Prallethrin	2.0	U	ng/L
Tau-Fluvalinate	0.25	U	ng/L
Tetramethrin	0.75	U	ng/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 8270E
Batch ID: P436250

Component	Result	Code	Units
Trans-Nonachlor	0.20	U	ng/L
Triclosan Methyl	0.15	U	ng/L
Trifluralin	0.20	U	ng/L

Reference Method: EPA 8276
Batch ID: P436250

Component	Result	Code	Units
Chlordane	2.0	U	ng/L
Toxaphene	15	U	ng/L

Reference Method: SM 2320 B-2011
Batch ID: P436358

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

Reference Method: SM 2320 B-2011
Batch ID: P436470

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

Reference Method: SM 2540 C-2015
Batch ID: P436766

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2015
Batch ID: P436583

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P436359

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 4500-F- C-2011
Batch ID: P436360

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P436407

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: P436144

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.5		P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P436138

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Turbidity	105		P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P436194

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	102		P	85 - 115
Iron	103		P	85 - 115
Magnesium	101		P	85 - 115
Potassium	98.7		P	85 - 115
Sodium	96.3		P	85 - 115
Strontium	101		P	85 - 115
Tin	106		P	85 - 115
Titanium	103		P	85 - 115
Vanadium	103		P	85 - 115
Zinc	105		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P436194

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	95.6		P	85 - 115
Antimony	96.0		P	85 - 115
Arsenic	96.9		P	85 - 115
Barium	101		P	85 - 115
Beryllium	90.9		P	85 - 115
Boron	95.7		P	85 - 115
Cadmium	98.6		P	85 - 115
Chromium	96.7		P	85 - 115
Cobalt	96.5		P	85 - 115
Copper	95.4		P	85 - 115
Lead	94.3		P	85 - 115
Manganese	94.5		P	85 - 115
Molybdenum	96.5		P	85 - 115
Nickel	96.8		P	85 - 115
Selenium	97.3		P	85 - 115
Silver	106		P	85 - 115
Thallium	98.6		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P436323

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P436326

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P436288

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P436423

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: P436272

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P436273

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	105		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P436448

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P436454

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P436221

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P436222

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8270E
 Batch ID: P436250

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aldrin	86.3		P	30 - 96.0
Alpha-BHC	94.8		P	70 - 109
Alpha-Chlordane	99.1		P	45 - 107
Beta-BHC	95.0		P	64 - 138
Beta-Cyfluthrin	140		P	17 - 141
Bifenthrin	102		P	10 - 113
Chlorothalonil	112		P	26 - 180
Cis-Nonachlor	101		P	37 - 102
Cypermethrin	97.5		P	20 - 133
Dacthal	114		P	69 - 114
DDD-p,p'	96.7		P	42 - 105
DDE-p,p'	80.4		P	42 - 106
DDT-p,p'	102		P	42 - 107
Delta-BHC	101		P	67 - 144
Deltamethrin	148		P	15 - 149
Dichlobenil	108		P	46 - 117
Dicofol	95.2		P	34 - 114
Dieldrin	80.6		P	50 - 108
Endosulfan I	96.8		P	55 - 104
Endosulfan II	110		P	51 - 111
Endosulfan Sulfate	103		P	56 - 121
Endrin	78.0		P	10 - 106
Endrin Aldehyde	95.1		P	34 - 114
Endrin Ketone	102		P	63 - 177
Esfenvalerate	136		P	29 - 143
Ethalfuralin	92.2		P	46 - 96.0
Fenpropathrin	95.7		P	28 - 115
Gamma-BHC	77.8		P	65 - 121
Gamma-Chlordane	103		P	39 - 103
Heptachlor	63.0		P	39 - 94.0
Heptachlor Epoxide	103		P	54 - 104
Hexachlorobenzene	96.1		P	36 - 100
Kepone	85.3		P	10 - 225
Lambda-Cyhalothrin	112		P	10 - 135
Methoprene	84.4		P	10 - 109
Methoxychlor	93.6		P	52 - 112
MGK-264	113		P	44 - 117
Mirex	98.1		F	20 - 90.0
Oxychlordane	77.2		P	44 - 102
PCB-1016	88.0		P	45 - 107
PCB-1260	82.6		P	40 - 118
Permethrin	129		P	18 - 135
Phenothrin	95.4		P	10 - 102
Piperonyl Butoxide	147		P	28 - 156
Prallethrin	109		P	28 - 113
Tau-Fluvalinate	105		P	10 - 123
Tetramethrin	112		P	18 - 158
Trans-Nonachlor	100		P	39 - 104
Triclosan Methyl	81.6		P	54 - 108
Trifluralin	95.3		P	46 - 97.0

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8276
Batch ID: P436250

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlordane	71.7		P	52 - 117
Toxaphene	83.8		P	44 - 125

Reference Method: SM 2320 B-2011
Batch ID: P436358

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	96.3		P	92 - 105

Reference Method: SM 2320 B-2011
Batch ID: P436470

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	97.7		P	92 - 105

Reference Method: SM 2540 C-2015
Batch ID: P436766

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

Reference Method: SM 2540 D-2015
Batch ID: P436583

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	108		P	85 - 115

Reference Method: SM 4500-F- C-2011
Batch ID: P436359

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.8		P	94 - 106

Reference Method: SM 4500-F- C-2011
Batch ID: P436360

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	100		P	94 - 106

Reference Method: SM 5310 B-2011
Batch ID: P436407

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P436194

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2443482	Iron	96.5	99.7	P/P	70 - 130
2443482	Tin	93.7	97.1	P/P	70 - 130
2443482	Titanium	97.5	101	P/P	70 - 130
2443482	Vanadium	101	105	P/P	70 - 130
2443482	Zinc	100	102	P/P	70 - 130

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P436194

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2443482	Aluminum	95.6	96.1	P/P	70 - 130
2443482	Antimony	96.6	98.0	P/P	70 - 130
2443482	Arsenic	103	105	P/P	70 - 130
2443482	Barium	101	102	P/P	70 - 130
2443482	Beryllium	98.4	103	P/P	70 - 130
2443482	Boron	84.7	94.7	P/P	70 - 130
2443482	Cadmium	93.7	95.3	P/P	70 - 130
2443482	Chromium	89.0	89.7	P/P	70 - 130
2443482	Cobalt	90.8	90.4	P/P	70 - 130
2443482	Copper	86.7	93.8	P/P	70 - 130
2443482	Lead	95.1	96.7	P/P	70 - 130
2443482	Manganese	86.0	86.2	P/P	70 - 130
2443482	Molybdenum	103	106	P/P	70 - 130
2443482	Nickel	91.7	92.2	P/P	70 - 130
2443482	Selenium	100	102	P/P	70 - 130
2443482	Silver	95.7	97.7	P/P	70 - 130
2443482	Thallium	99.0	101	P/P	70 - 130

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P436323

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2443359	Chloride	104		P	90 - 110
2443434	Chloride	105		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P436326

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2443359	Sulfate	103		P	90 - 110
2443434	Sulfate	105		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P436288

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2443435	Ammonia-N	99.8	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P436423

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P436423

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2443476	Ammonia-N	97.0	97.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P436272

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2443431	Kjeldahl Nitrogen	95.6	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P436273

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2442648	Kjeldahl Nitrogen	102	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P436448

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2442648	NO2NO3-N	96.7	97.2	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P436454

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2443436	NO2NO3-N	100	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P436221

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2443613	Total-P	111	111	F/F	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P436222

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2443475	Total-P	110	113	P/F	90 - 110

Reference Method: EPA 8270E
Batch ID: P436250

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2443478	Aldrin	63.5	67.3	P/P	24 - 81.0
2443478	Alpha-BHC	88.8	84.9	P/P	65 - 110
2443478	Alpha-Chlordane	78.3	97.8	P/P	43 - 119
2443478	Beta-BHC	95.4	117	P/P	54 - 165
2443478	Beta-Cyfluthrin	70.6	96.2	P/P	27 - 165
2443478	Bifenthrin	84.9	95.6	P/P	17 - 117
2443478	Chlorothalonil	21.7	12.3	P/P	10 - 255
2443478	Cis-Nonachlor	60.5	63.6	P/P	34 - 98.0
2443478	Cypermethrin	55.4	64.9	P/P	25 - 143
2443478	Dacthal	72.8	86.3	P/P	55 - 139

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8270E
Batch ID: P436250

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2443478	DDD-p,p'	69.6	89.0	P/P	30 - 109
2443478	DDE-p,p'	73.0	85.0	P/P	35 - 106
2443478	DDT-p,p'	88.4	88.2	P/P	41 - 101
2443478	Delta-BHC	59.6	86.7	P/P	58 - 165
2443478	Deltamethrin	99.4	122	P/P	10 - 194
2443478	Dichlobenil	45.8	55.9	P/P	22 - 114
2443478	Dicofol	76.2	78.3	P/P	17 - 133
2443478	Dieldrin	77.3	89.7	P/P	45 - 129
2443478	Endosulfan I	74.9	89.4	P/P	49 - 104
2443478	Endosulfan II	63.5	70.1	P/P	37 - 117
2443478	Endosulfan Sulfate	55.5	53.3	P/P	38 - 128
2443478	Endrin	66.8	89.0	P/P	35 - 116
2443478	Endrin Aldehyde	57.3	42.8	P/P	19 - 108
2443478	Endrin Ketone	80.4	78.6	P/P	44 - 134
2443478	Esfenvalerate	87.5	102	P/P	27 - 176
2443478	Ethalfuralin	106	92.1	F/P	49 - 100
2443478	Fenpropathrin	83.6	101	P/P	34 - 117
2443478	Gamma-BHC	64.5	66.7	P/P	59 - 129
2443478	Gamma-Chlordane	79.6	84.3	P/P	33 - 107
2443478	Heptachlor	86.3	81.1	P/P	37 - 94.0
2443478	Heptachlor Epoxide	77.7	95.1	P/P	38 - 118
2443478	Hexachlorobenzene	67.3	67.9	P/P	35 - 97.0
2443478	Kepone	47.2	57.7	P/P	10 - 221
2443478	Lambda-Cyhalothrin	69.5	83.7	P/P	23 - 190
2443478	Methoprene	76.9	84.7	P/P	21 - 109
2443478	Methoxychlor	84.0	88.9	P/P	46 - 118
2443478	MGK-264	93.4	113	P/P	39 - 122
2443478	Mirex	54.2	53.1	P/P	25 - 90.0
2443478	Oxychlordane	89.4	97.6	P/P	42 - 100
2443478	Permethrin	79.1	77.6	P/P	33 - 181
2443478	Phenothrin	74.0	77.4	P/P	12 - 125
2443478	Piperonyl Butoxide	98.7	99.2	P/P	10 - 178
2443478	Prallethrin	43.5	57.9	P/P	24 - 122
2443478	Tau-Fluvalinate	75.8	97.3	P/P	13 - 151
2443478	Tetramethrin	92.0	117	P/P	16 - 172
2443478	Trans-Nonachlor	61.9	95.1	P/P	39 - 100
2443478	Triclosan Methyl	76.4	93.3	P/P	43 - 110
2443478	Trifluralin	64.7	74.8	P/P	45 - 94.0
2443896	PCB-1016	104	89.8	P/P	45 - 107
2443896	PCB-1260	101	89.5	P/P	40 - 112

Reference Method: EPA 8276
Batch ID: P436250

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2443896	Chlordane	80.5	72.4	P/P	43 - 123
2443896	Toxaphene	85.1	74.9	P/P	27 - 156

Reference Method: SM 4500-F- C-2011
Batch ID: P436360

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

Matrix Spike Accuracy

Reference Method: SM 4500-F- C-2011
Batch ID: P436360

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2443462	Fluoride	99.9	101	P/P	94 - 106

Reference Method: SM 5310 B-2011
Batch ID: P436407

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2443729	Organic Carbon	93.8	95.5	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P436144

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2443433	Color (true)	1.73	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P436138

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2443375	Turbidity	1.79	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P436194

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2443482	Calcium	1.26	Spike	P	0 - 20
2443482	Iron	3.01	Spike	P	0 - 20
2443482	Magnesium	2.35	Spike	P	0 - 20
2443482	Potassium	1.89	Spike	P	0 - 20
2443482	Sodium	1.84	Spike	P	0 - 20
2443482	Strontium	1.78	Spike	P	0 - 20
2443482	Tin	3.29	Spike	P	0 - 20
2443482	Titanium	3.34	Spike	P	0 - 20
2443482	Vanadium	3.93	Spike	P	0 - 20
2443482	Zinc	1.30	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P436194

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2443482	Aluminum	0.498	Spike	P	0 - 20
2443482	Antimony	1.47	Spike	P	0 - 20
2443482	Arsenic	1.69	Spike	P	0 - 20
2443482	Barium	0.976	Spike	P	0 - 20
2443482	Beryllium	4.84	Spike	P	0 - 20
2443482	Boron	1.84	Spike	P	0 - 20
2443482	Cadmium	1.68	Spike	P	0 - 20
2443482	Chromium	0.770	Spike	P	0 - 20
2443482	Cobalt	0.428	Spike	P	0 - 20
2443482	Copper	7.35	Spike	P	0 - 20
2443482	Lead	1.69	Spike	P	0 - 20
2443482	Manganese	0.191	Spike	P	0 - 20
2443482	Molybdenum	2.01	Spike	P	0 - 20
2443482	Nickel	0.472	Spike	P	0 - 20
2443482	Selenium	2.14	Spike	P	0 - 20
2443482	Silver	2.10	Spike	P	0 - 20
2443482	Thallium	2.34	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P436323

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2443359	Chloride	0.911	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P436326

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2443359	Sulfate	1.11	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P436288

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2443435	Ammonia-N	0.737	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P436423

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2443476	Ammonia-N	0.584	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P436272

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2443431	Kjeldahl Nitrogen	3.11	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P436273

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2442648	Kjeldahl Nitrogen	0.347	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P436448

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2442648	NO2NO3-N	0.516	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P436454

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2443436	NO2NO3-N	0.496	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P436221

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2443613	Total-P	0.517	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P436222

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2443475	Total-P	3.06	Spike	P	0 - 20

Reference Method: EPA 8270E

Batch ID: P436250

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2443478	Aldrin	5.78	Spike	P	0 - 41
2443478	Alpha-BHC	4.47	Spike	P	0 - 25
2443478	Alpha-Chlordane	22.1	Spike	P	0 - 32
2443478	Beta-BHC	19.5	Spike	P	0 - 33
2443478	Beta-Cyfluthrin	30.7	Spike	P	0 - 43
2443478	Bifenthrin	11.9	Spike	P	0 - 52
2443478	Chlorothalonil	55.2	Spike	P	0 - 82
2443478	Cis-Nonachlor	5.07	Spike	P	0 - 33
2443478	Cypermethrin	15.7	Spike	P	0 - 51
2443478	Dacthal	16.9	Spike	P	0 - 27
2443478	DDD-p,p'	24.5	Spike	P	0 - 39
2443478	DDE-p,p'	15.1	Spike	P	0 - 31
2443478	DDT-p,p'	0.162	Spike	P	0 - 29
2443478	Delta-BHC	35.6	Spike	F	0 - 35
2443478	Deltamethrin	20.5	Spike	P	0 - 100
2443478	Dichlobenil	19.9	Spike	P	0 - 40
2443478	Dicofol	2.80	Spike	P	0 - 37
2443478	Dieldrin	14.8	Spike	P	0 - 27
2443478	Endosulfan I	17.6	Spike	P	0 - 23
2443478	Endosulfan II	9.87	Spike	P	0 - 34
2443478	Endosulfan Sulfate	4.07	Spike	P	0 - 36
2443478	Endrin	28.5	Spike	P	0 - 45
2443478	Endrin Aldehyde	29.1	Spike	P	0 - 76
2443478	Endrin Ketone	2.27	Spike	P	0 - 43
2443478	Esfenvalerate	15.3	Spike	P	0 - 51
2443478	Ethalfuralin	14.4	Spike	P	0 - 22
2443478	Fenpropathrin	18.9	Spike	P	0 - 49
2443478	Gamma-BHC	3.27	Spike	P	0 - 28
2443478	Gamma-Chlordane	5.76	Spike	P	0 - 40
2443478	Heptachlor	6.19	Spike	P	0 - 29
2443478	Heptachlor Epoxide	20.1	Spike	P	0 - 33
2443478	Hexachlorobenzene	1.01	Spike	P	0 - 36
2443478	Kepone	20.1	Spike	P	0 - 85
2443478	Lambda-Cyhalothrin	18.4	Spike	P	0 - 55
2443478	Methoprene	9.58	Spike	P	0 - 53
2443478	Methoxychlor	5.61	Spike	P	0 - 50
2443478	MGK-264	18.9	Spike	P	0 - 43

Quality Assurance Report Precision

Reference Method: EPA 8270E

Batch ID: P436250

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2443478	Mirex	2.08	Spike	P	0 - 40
2443478	Oxychlordane	8.71	Spike	P	0 - 31
2443478	Permethrin	1.85	Spike	P	0 - 50
2443478	Phenothrin	4.46	Spike	P	0 - 58
2443478	Piperonyl Butoxide	0.474	Spike	P	0 - 100
2443478	Prallethrin	21.0	Spike	P	0 - 39
2443478	Tau-Fluvalinate	24.8	Spike	P	0 - 54
2443478	Tetramethrin	23.8	Spike	P	0 - 51
2443478	Trans-Nonachlor	42.3	Spike	F	0 - 39
2443478	Triclosan Methyl	19.8	Spike	P	0 - 31
2443478	Trifluralin	14.5	Spike	P	0 - 22
2443896	PCB-1016	14.3	Spike	P	0 - 25
2443896	PCB-1260	12.3	Spike	P	0 - 30

Reference Method: EPA 8276

Batch ID: P436250

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2443896	Chlordane	10.6	Spike	P	0 - 28
2443896	Toxaphene	12.7	Spike	P	0 - 27

Reference Method: SM 2320 B-2011

Batch ID: P436358

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2443462	Total Alkalinity	1.08	Sample	P	0 - 3.9

Reference Method: SM 2320 B-2011

Batch ID: P436470

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2443359	Total Alkalinity	0.0706	Sample	P	0 - 3.9

Reference Method: SM 2540 C-2015

Batch ID: P436766

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2443373	TDS	11.4	Sample	F	0 - 10

Reference Method: SM 2540 D-2015

Batch ID: P436583

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2443373	TSS	6.56	Sample	P	0 - 10

Quality Assurance Report Precision

Reference Method: SM 4500-F- C-2011
Batch ID: P436359

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2443359	Fluoride	0.480	Spike	P	0 - 1.9

Reference Method: SM 4500-F- C-2011
Batch ID: P436360

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2443462	Fluoride	0.480	Spike	P	0 - 1.9

Reference Method: SM 5310 B-2011
Batch ID: P436407

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2443729	Organic Carbon	1.44	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2443478
Field Sample ID: 20030695

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8270E	Decachlorobiphenyl	125	P	37 - 129
EPA 8270E	Decachlorobiphenyl	57.6	P	26 - 115
EPA 8270E	Tetrachloro-m-xylene	56.5	P	30 - 101
EPA 8270E	Tetrachloro-m-xylene	50.6	P	29 - 95.0
EPA 8276	Decachlorobiphenyl	58.9	P	28 - 102
EPA 8276	PCNB	108	P	49 - 115

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A122011

Included Lab Sample IDs: 2443462, 2443464

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

Reference Method: DEP SOP: NU-094-1

Run ID: A122013

Included Lab Sample IDs: 2443462, 2443464

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	99.6	99.7	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A122048

Included Lab Sample IDs: 2443465

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.4	98.9	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A122061

Included Lab Sample IDs: 2443482

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	97.6	97.5	P/P	90 - 110
Antimony	93.4	94.6	P/P	90 - 110
Arsenic	100	100	P/P	90 - 110
Barium	99.2	101	P/P	90 - 110
Beryllium	99.1	98.8	P/P	90 - 110
Boron	91.8	91.4	P/P	90 - 110
Cadmium	98.4	99.3	P/P	90 - 110
Cobalt	100	98.8	P/P	90 - 110
Copper	97.4	96.8	P/P	90 - 110
Lead	94.4	95.1	P/P	90 - 110
Manganese	95.1	94.6	P/P	90 - 110
Molybdenum	97.9	98.6	P/P	90 - 110
Nickel	100	99.6	P/P	90 - 110
Selenium	99.6	102	P/P	90 - 110
Silver	98.5	99.3	P/P	90 - 110
Thallium	96.5	96.9	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A122066

Included Lab Sample IDs: 2443462, 2443464

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

Reference Method: SM 2320 B-2011

Run ID: A122079

Included Lab Sample IDs: 2443462

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
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Quality Assurance Report Calibration Verification

Reference Method: SM 2320 B-2011

Run ID: A122079

Included Lab Sample IDs: 2443462

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	95.4	95.7	P/P	90 - 110

Reference Method: SM 4500-F- C-2011

Run ID: A122079

Included Lab Sample IDs: 2443462, 2443464

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

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A122103

Included Lab Sample IDs: 2443482

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chromium	99.5	98.8	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A122112

Included Lab Sample IDs: 2443463, 2443465

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.4	96.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A122116

Included Lab Sample IDs: 2443463, 2443465

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	102	104	P/P	90 - 110
Total-P	103	102	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A122117

Included Lab Sample IDs: 2443463

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.6	99.3	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A122118

Included Lab Sample IDs: 2443463

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	102	98.3	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A122126

Included Lab Sample IDs: 2443463

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A122128

Included Lab Sample IDs: 2443465

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A122130

Included Lab Sample IDs: 2443465

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

Reference Method: SM 2320 B-2011

Run ID: A122131

Included Lab Sample IDs: 2443464

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	98.6	94.1	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A122190

Included Lab Sample IDs: 2443482

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	104	100	P/P	90 - 110
Iron	99.2	98.4	P/P	90 - 110
Magnesium	98.3	98.4	P/P	90 - 110
Potassium	98.3	97.5	P/P	90 - 110
Sodium	97.0	92.9	P/P	90 - 110
Strontium	102	104	P/P	90 - 110
Tin	103	105	P/P	90 - 110
Titanium	104	106	P/P	90 - 110
Vanadium	103	104	P/P	90 - 110
Zinc	104	105	P/P	90 - 110

Reference Method: EPA 8276

Run ID: A122273

Included Lab Sample IDs: 2443478

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chlordane	96.5		P	80 - 120
Toxaphene	92.2		P	80 - 120

Reference Method: EPA 8270E

Run ID: A122301

Included Lab Sample IDs: 2443478

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aldrin	101		P	80 - 120
Alpha-BHC	101		P	80 - 120
Alpha-Chlordane	104		P	80 - 120
Beta-BHC	89.7		P	80 - 120
Beta-Cyfluthrin	113		P	80 - 120
Bifenthrin	94.1		P	80 - 120

Quality Assurance Report Calibration Verification

Reference Method: EPA 8270E
Run ID: A122301
Included Lab Sample IDs: 2443478

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chlorothalonil	117		P	80 - 120
Cis-Nonachlor	108		P	80 - 120
Cypermethrin	101		P	80 - 120
Dacthal	99.9		P	80 - 120
DDD-p,p'	95.4		P	80 - 120
DDE-p,p'	88.9		P	80 - 120
DDT-p,p'	96.6		P	80 - 120
Delta-BHC	112		P	80 - 120
Deltamethrin	115		P	80 - 120
Dichlobenil	93.8		P	80 - 120
Dicofol	104		P	80 - 120
Dieldrin	89.8		P	80 - 120
Endosulfan I	105		P	80 - 120
Endosulfan II	110		P	80 - 120
Endosulfan Sulfate	95.6		P	80 - 120
Endrin	96.4		P	80 - 120
Endrin Aldehyde	94.7		P	80 - 120
Endrin Ketone	106		P	80 - 120
Esfenvalerate	107		P	80 - 120
Ethalfuralin	99.0		P	80 - 120
Fenpropathrin	102		P	80 - 120
Gamma-BHC	100		P	80 - 120
Gamma-Chlordane	105		P	80 - 120
Heptachlor	92.3		P	80 - 120
Heptachlor Epoxide	105		P	80 - 120
Hexachlorobenzene	93.9		P	80 - 120
Kepone	57.3*		F	80 - 120
Lambda-Cyhalothrin	115		P	80 - 120
Methoprene	87.1		P	80 - 120
Methoxychlor	94.8		P	80 - 120
MGK-264	95.2		P	80 - 120
Mirex	110		P	80 - 120
Oxychlordane	91.5		P	80 - 120
Permethrin	108		P	80 - 120
Phenothrin	107		P	80 - 120
Piperonyl Butoxide	94.7		P	80 - 120
Prallethrin	97.9		P	80 - 120
Tau-Fluvalinate	108		P	80 - 120
Tetramethrin	85.5		P	80 - 120
Trans-Nonachlor	116		P	80 - 120
Triclosan Methyl	94.0		P	80 - 120
Trifluralin	101		P	80 - 120

Reference Method: EPA 8270E
Run ID: A122359
Included Lab Sample IDs: 2443478

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
PCB-1016	111		P	80 - 120
PCB-1260	100		P	80 - 120

Quality Assurance Report

Calibration Verification

* 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	
DEP SOP: NU-094-1	Color (true)	99.5				1.73	
EPA 180.1 Rev. 2.0	Turbidity	105				1.79	
EPA 200.7 Rev. 4.4	Calcium	102					1.26
	Iron	103	96.5	99.7			3.01
	Magnesium	101					2.35
	Potassium	98.7					1.89
	Sodium	96.3					1.84
	Strontium	101					1.78
	Tin	106	93.7	97.1			3.29
	Titanium	103	97.5	101			3.34
	Vanadium	103	101	105			3.93
	Zinc	105	100	102			1.30
EPA 200.8 Rev. 5.4	Aluminum	95.6	95.6	96.1			0.498
	Antimony	96.0	96.6	98.0			1.47
	Arsenic	96.9	103	105			1.69
	Barium	101	101	102			0.976
	Beryllium	90.9	98.4	103			4.84
	Boron	95.7	84.7	94.7			1.84
	Cadmium	98.6	93.7	95.3			1.68
	Chromium	96.7	89.0	89.7			0.770
	Cobalt	96.5	90.8	90.4			0.428
	Copper	95.4	86.7	93.8			7.35
	Lead	94.3	95.1	96.7			1.69
	Manganese	94.5	86.0	86.2			0.191
	Molybdenum	96.5	103	106			2.01
	Nickel	96.8	91.7	92.2			0.472
	Selenium	97.3	100	102			2.14
	Silver	106	95.7	97.7			2.10
	Thallium	98.6	99.0	101			2.34
EPA 300.0 Rev. 2.1	Chloride	104	104	105		0.911	
	Sulfate	104	103	105		1.11	
EPA 350.1 Rev. 2.0	Ammonia-N	99.6	99.8	101			0.737
	Ammonia-N	101	97.0	97.8			0.584
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	106	95.6	100			3.11
	Kjeldahl Nitrogen	105	102	102			0.347
EPA 353.2 Rev. 2.0	NO2NO3-N	102	96.7	97.2			0.516
	NO2NO3-N	102	100	101			0.496
EPA 365.1 Rev. 2.0	Total-P	108	111	111			0.517
	Total-P	110	110	113			3.06
EPA 8270E	Aldrin	86.3	63.5	67.3			5.78
	Alpha-BHC	94.8	88.8	84.9			4.47
	Alpha-Chlordane	99.1	78.3	97.8			22.1
	Beta-BHC	95.0	95.4	117			19.5
	Beta-Cyfluthrin	140	70.6	96.2			30.7
	Bifenthrin	102	84.9	95.6			11.9
	Chlorothalonil	112	21.7	12.3			55.2
	Cis-Nonachlor	101	60.5	63.6			5.07
	Cypermethrin	97.5	55.4	64.9			15.7
	Dacthal	114	72.8	86.3			16.9
	DDD-p,p'	96.7	69.6	89.0			24.5
	DDE-p,p'	80.4	73.0	85.0			15.1
	DDT-p,p'	102	88.4	88.2			0.162
	Delta-BHC	101	59.6	86.7			35.6
	Deltamethrin	148	99.4	122			20.5

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision LCS	SMP	MS
EPA 8270E	Dichlobenil	108	45.8	55.9			19.9
	Dicofol	95.2	76.2	78.3			2.80
	Dieldrin	80.6	77.3	89.7			14.8
	Endosulfan I	96.8	74.9	89.4			17.6
	Endosulfan II	110	63.5	70.1			9.87
	Endosulfan Sulfate	103	55.5	53.3			4.07
	Endrin	78.0	66.8	89.0			28.5
	Endrin Aldehyde	95.1	57.3	42.8			29.1
	Endrin Ketone	102	80.4	78.6			2.27
	Esfenvalerate	136	87.5	102			15.3
	Ethalfuralin	92.2	106	92.1			14.4
	Fenpropathrin	95.7	83.6	101			18.9
	Gamma-BHC	77.8	64.5	66.7			3.27
	Gamma-Chlordane	103	79.6	84.3			5.76
	Heptachlor	63.0	86.3	81.1			6.19
	Heptachlor Epoxide	103	77.7	95.1			20.1
	Hexachlorobenzene	96.1	67.3	67.9			1.01
	Kepone	85.3	47.2	57.7			20.1
	Lambda-Cyhalothrin	112	69.5	83.7			18.4
	Methoprene	84.4	76.9	84.7			9.58
	Methoxychlor	93.6	84.0	88.9			5.61
	MGK-264	113	93.4	113			18.9
	Mirex	98.1	53.1	54.2			2.08
	Oxychlordane	77.2	97.6	89.4			8.71
	PCB-1016	88.0	104	89.8			14.3
	PCB-1260	82.6	101	89.5			12.3
	Permethrin	129	77.6	79.1			1.85
	Phenothrin	95.4	77.4	74.0			4.46
	Piperonyl Butoxide	147	99.2	98.7			0.474
	Prallethrin	109	57.9	43.5			21.0
	Tau-Fluvalinate	105	97.3	75.8			24.8
	Tetramethrin	112	117	92.0			23.8
	Trans-Nonachlor	100	95.1	61.9			42.3
	Triclosan Methyl	81.6	93.3	76.4			19.8
	Trifluralin	95.3	74.8	64.7			14.5
EPA 8276	Chlordane	71.7	80.5	72.4			10.6
	Toxaphene	83.8	85.1	74.9			12.7
SM 2320 B-2011	Total Alkalinity	96.3				1.08	
	Total Alkalinity	97.7				0.0706	
SM 2540 C-2015	TDS	106				11.4	
SM 2540 D-2015	TSS	108				6.56	
SM 4500-F- C-2011	Fluoride	98.8					0.480
	Fluoride	100	99.9	101			0.480
SM 5310 B-2011	Organic Carbon	97.4	93.8	95.5			1.44

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2443462, 2443464
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2443462, 2443464
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2443482

Reference Method Descriptions

Method	Description	Associated Samples
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2443482
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2443462, 2443464
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2443462, 2443464
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2443463, 2443465
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2443463, 2443465
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2443463, 2443465
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2443463, 2443465
EPA 8270E	Organochlorine pesticides, pyrethroids and tracers in water matrices by GC/MS/MS	2443478
EPA 8270E	PCBs in water matrices by GC/MS/MS	2443478
EPA 8276	Chlordane and Toxaphene in water matrices by GC/MS with Negative Chemical Ionization	2443478
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2443462, 2443464
SM 2340 B-2011	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO ₃	2443482
SM 2540 C-2015	Total Dissolved Solids in aqueous matrices	2443462, 2443464
SM 2540 D-2015	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2443462, 2443464
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2443462, 2443464
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2443463, 2443465

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	10/06/2023			10/06/2023 15:35	Alexis Price	2443462
	10/06/2023			10/06/2023 15:36	Alexis Price	2443464
EPA 180.1 Rev. 2.0	10/06/2023			10/06/2023 14:52	Khloe J Berg	2443462
	10/06/2023			10/06/2023 14:54	Khloe J Berg	2443464
EPA 200.7 Rev. 4.4	10/06/2023	10/09/2023 15:15	George D Taylor	10/16/2023 23:41	McKinley C Carter	2443482
	10/06/2023	10/09/2023 15:15	George D Taylor	10/17/2023 00:12	McKinley C Carter	2443482
EPA 200.8 Rev. 5.4	10/06/2023	10/09/2023 15:15	George D Taylor	10/10/2023 20:12	Conrad Hartmann	2443482
	10/06/2023	10/09/2023 15:15	George D Taylor	10/10/2023 21:23	Conrad Hartmann	2443482
	10/06/2023	10/09/2023 15:15	George D Taylor	10/11/2023 16:57	Conrad Hartmann	2443482
	10/06/2023	10/09/2023 15:15	George D Taylor	10/10/2023 14:41	James L Waggeberby	2443462
EPA 300.0 Rev. 2.1	10/06/2023			10/10/2023 14:56	James L Waggeberby	2443464
	10/06/2023			10/10/2023 14:44	Ping Hua	2443465
EPA 350.1 Rev. 2.0	10/06/2023			10/12/2023 13:15	Khloe J Berg	2443463
	10/06/2023	10/11/2023 12:38	Ping Hua	10/12/2023 12:36	Ping Hua	2443463
EPA 351.2 Rev. 2.0	10/06/2023	10/12/2023 09:10	Ping Hua	10/12/2023 16:26	Ping Hua	2443465
	10/06/2023			10/12/2023 13:24	Anna M. Plaviak	2443465
EPA 353.2 Rev. 2.0	10/06/2023			10/12/2023 14:39	Fadila Guebre	2443463
	10/06/2023	10/10/2023 15:15	Adam P Silver	10/11/2023 17:01	Simonne.V. Calhoun	2443465
EPA 365.1 Rev. 2.0	10/06/2023	10/10/2023 15:15	Adam P Silver	10/11/2023 17:12	Simonne.V. Calhoun	2443463
	10/06/2023	10/12/2023 08:30	Rasheda Ghaffari	10/20/2023 19:08	Julie Wi	2443478
EPA 8270E	10/06/2023	10/12/2023 08:30	Rasheda Ghaffari	10/23/2023 22:35	Lipi Saha	2443478
	10/06/2023	10/12/2023 08:30	Rasheda Ghaffari	10/20/2023 13:54	Arthur Maknenko	2443478
EPA 8276	10/06/2023	10/12/2023 08:30	Rasheda Ghaffari	10/20/2023 13:54	Arthur Maknenko	2443478
	10/06/2023			10/10/2023 03:32	Dale L. Simmons	2443462
SM 2320 B-2011	10/06/2023			10/13/2023 00:53	Chandler E Cox	2443464
	10/06/2023			10/17/2023 00:12	McKinley C Carter	2443482
SM 2340 B-2011	10/06/2023			10/11/2023 15:58	Yijie Li	2443462, 2443464
SM 2540 C-2015	10/06/2023			10/11/2023 15:58	Yijie Li	2443462, 2443464
SM 2540 D-2015	10/06/2023			10/10/2023 00:22	Dale L. Simmons	2443464
	10/06/2023			10/10/2023 01:32	Dale L. Simmons	2443462
SM 4500-F- C-2011	10/06/2023			10/11/2023 19:59	Elise M. Gillis	2443463
	10/06/2023			10/11/2023 20:22	Elise M. Gillis	2443465