

Chemical Analysis Report

NW-DIST-2023-01-19-01

Florida DEP Laboratory
2600 Blair Stone Road
Tallahassee, FL 32399-2400
DOH Accreditation E31780

Event Description: **Pace Run**
Request ID: **RQ-2023-01-16-10**
Customer: **NW-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
160 W Government Street
Suite 208
Pensacola, FL 32502-5794
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Certified by: Thekkekalathil Chandrasekhar, Environmental Consultant

Date Certified: 07-FEB-2023 09:49



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: 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: Coldwater Creek West Fork on CR 178

Collection Date/Time: 01/18/2023 12:30

Field ID: G4NW0016

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2381709	DEP SOP: NU-094-1	Color (true)	14		PCU	P424740	
	EPA 180.1 Rev. 2.0	Turbidity	3.1		NTU	P424749	
	EPA 300.0 Rev. 2.1	Chloride	6.4		mg Cl/L	P425013	
		Sulfate	1.7		mg SO4/L	P425016	
	SM 2320 B-2011	Total Alkalinity	2.9		mg CaCO3/L	P425140	
	SM 2540 C-2015	TDS	32		mg/L	P425210	
	SM 2540 D-2015	TSS	4	I	mg/L	P425038	
2381710	SM 4500-F- C-2011	Fluoride	0.025	U	mg F/L	P425150	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.013		mg N/L	P425216	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.18	I	mg N/L	P425193	
	EPA 353.2 Rev. 2.0	NO2NO3-N	1.8		mg N/L	P425029	
	EPA 365.1 Rev. 2.0	Total-P	0.004	I	mg P/L	P424974	
2381752	SM 5310 B-2011	Organic Carbon	1.9		mg C/L	P425084	
	EPA 8270E	Aldrin	0.66	U	ng/L	P424717	
		Alpha-BHC	0.10	U	ng/L	P424717	
		Alpha-Chlordane	0.20	U	ng/L	P424717	
		PCB-1016	2.0	UQ	ng/L	P425033	
		Beta-BHC	0.10	U	ng/L	P424717	
		PCB-1221	2.0	UQ	ng/L	P425033	
		Beta-Cyfluthrin	1.3	U	ng/L	P424717	
		PCB-1232	2.0	UQ	ng/L	P425033	
		Bifenthrin	0.51	U	ng/L	P424717	
		PCB-1242	2.0	UQ	ng/L	P425033	
		Carbophenothion	0.92	U	ng/L	P424717	
		PCB-1248	2.0	UQ	ng/L	P425033	
		Chlorothalonil	3.7	U	ng/L	P424717	
		PCB-1254	2.0	UQ	ng/L	P425033	
		Cis-Nonachlor	0.20	U	ng/L	P424717	
		PCB-1260	2.0	UQ	ng/L	P425033	
		Cypermethrin	1.5	U	ng/L	P424717	
		Dacthal	0.15	U	ng/L	P424717	
		DDD-p,p'	0.26	U	ng/L	P424717	
		DDE-p,p'	0.20	U	ng/L	P424717	
		DDT-p,p'	0.26	U	ng/L	P424717	
		Delta-BHC	0.41	U	ng/L	P424717	
		Deltamethrin	1.3	U	ng/L	P424717	
		Dichlobenil	0.26	U	ng/L	P424717	
		Dicofol	1.3	U	ng/L	P424717	
		Dieldrin	0.66	I	ng/L	P424717	
		Endosulfan I	0.41	U	ng/L	P424717	
		Endosulfan II	0.41	U	ng/L	P424717	
		Endosulfan Sulfate	0.31	U	ng/L	P424717	
		Endrin	0.41	U	ng/L	P424717	
		Endrin Aldehyde	0.77	UJ	ng/L	P424717	LCS

Field ID: G4NW0016

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2381752	EPA 8270E	Endrin Ketone	0.41	UJ	ng/L	P424717	RPD
		Esfenvalerate	0.77	U	ng/L	P424717	
		Ethalfuralin	0.15	U	ng/L	P424717	
		Fenpropathrin	0.26	U	ng/L	P424717	
		Gamma-BHC	0.13	U	ng/L	P424717	
		Gamma-Chlordane	0.20	U	ng/L	P424717	
		Heptachlor	0.20	U	ng/L	P424717	
		Heptachlor Epoxide	0.26	U	ng/L	P424717	
		Hexachlorobenzene**	1.0	U	ng/L	P424717	
		Kepone	5.1	U	ng/L	P424717	
		Lambda-Cyhalothrin	0.77	U	ng/L	P424717	
		Methoprene	0.77	U	ng/L	P424717	
		Methoxychlor	0.31	U	ng/L	P424717	
		MGK-264	0.20	U	ng/L	P424717	
		Mirex	0.36	U	ng/L	P424717	
		Oxychlordane	0.31	U	ng/L	P424717	
		Permethrin	1.6	U	ng/L	P424717	
		Phenothrin	0.92	U	ng/L	P424717	
		Piperonyl Butoxide	0.15	U	ng/L	P424717	
		Prallethrin	2.0	U	ng/L	P424717	
		Tau-Fluvalinate	0.26	U	ng/L	P424717	
		Tetramethrin	0.77	U	ng/L	P424717	
		Trans-Nonachlor	0.20	U	ng/L	P424717	
		Triclosan Methyl	0.15	U	ng/L	P424717	
		Trifluralin	0.20	U	ng/L	P424717	
	EPA 8276	Chlordane	2.0	U	ng/L	P424717	
		Toxaphene	30	I	ng/L	P424717	

Ref. Method and Comment:

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

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

EPA 8270E: Insufficient sample available to perform duplicate matrix spikes. Sample expired for preparation due to need for re-extraction.

Sample Location: FB

Collection Date/Time: 01/18/2023 13:23

Field ID: FB_01182023

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2381711	DEP SOP: NU-094-1	Color (true)	2.5	U	PCU	P424740	
	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P424749	
	EPA 300.0 Rev. 2.1	Chloride	0.20	U	mg Cl/L	P425013	
		Sulfate	0.20	U	mg SO4/L	P425016	
	SM 2320 B-2011	Total Alkalinity	0.65	U	mg CaCO3/L	P425140	
	SM 2540 C-2015	TDS	15	U	mg/L	P425210	
	SM 2540 D-2015	TSS	2	U	mg/L	P425038	
2381712	SM 4500-F- C-2011	Fluoride	0.025	U	mg F/L	P425150	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P425216	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P425195	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P425029	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P424976	
2381753	SM 5310 B-2011	Organic Carbon	0.50	U	mg C/L	P425084	
	EPA 8270E	Aldrin	0.67	U	ng/L	P424717	
		Alpha-BHC	0.10	U	ng/L	P424717	
		Alpha-Chlordane	0.21	U	ng/L	P424717	
		PCB-1016	2.1	UQ	ng/L	P425033	
		Beta-BHC	0.10	U	ng/L	P424717	
		PCB-1221	2.1	UQ	ng/L	P425033	
		Beta-Cyfluthrin	1.3	U	ng/L	P424717	
		PCB-1232	2.1	UQ	ng/L	P425033	
		Bifenthrin	0.52	U	ng/L	P424717	
		PCB-1242	2.1	UQ	ng/L	P425033	
		Carbophenothion	0.93	U	ng/L	P424717	
		PCB-1248	2.1	UQ	ng/L	P425033	
		Chlorothalonil	3.7	U	ng/L	P424717	
		PCB-1254	2.1	UQ	ng/L	P425033	
		Cis-Nonachlor	0.21	U	ng/L	P424717	
		PCB-1260	2.1	UQ	ng/L	P425033	
		Cypermethrin	1.6	U	ng/L	P424717	
		Dacthal	0.16	U	ng/L	P424717	
		DDD-p,p'	0.26	U	ng/L	P424717	
		DDE-p,p'	0.21	U	ng/L	P424717	
		DDT-p,p'	0.26	U	ng/L	P424717	
		Delta-BHC	0.41	U	ng/L	P424717	
		Deltamethrin	1.3	U	ng/L	P424717	
		Dichlobenil	0.26	U	ng/L	P424717	
		Dicofol	1.3	U	ng/L	P424717	
		Dieldrin	0.41	U	ng/L	P424717	
		Endosulfan I	0.41	U	ng/L	P424717	
		Endosulfan II	0.41	U	ng/L	P424717	
		Endosulfan Sulfate	0.31	U	ng/L	P424717	
		Endrin	0.41	U	ng/L	P424717	
		Endrin Aldehyde	0.78	UJ	ng/L	P424717	LCS

Field ID: FB_01182023

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes	
2381753	EPA 8270E	Endrin Ketone	0.41	U	ng/L	P424717	RPD	
		Esfenvalerate	0.78	U	ng/L	P424717		
		Ethalfuralin	0.16	U	ng/L	P424717		
		Fenpropathrin	0.26	U	ng/L	P424717		
		Gamma-BHC	0.13	U	ng/L	P424717		
		Gamma-Chlordane	0.21	U	ng/L	P424717		
		Heptachlor	0.21	U	ng/L	P424717		
		Heptachlor Epoxide	0.26	U	ng/L	P424717		
		Hexachlorobenzene**	1.0	U	ng/L	P424717		
		Kepone	5.2	U	ng/L	P424717		
		Lambda-Cyhalothrin	0.78	U	ng/L	P424717		
		Methoprene	0.78	U	ng/L	P424717		
		Methoxychlor	0.31	U	ng/L	P424717		
		MGK-264	0.21	U	ng/L	P424717		
		Mirex	0.36	U	ng/L	P424717		
		Oxychlordane	0.31	U	ng/L	P424717		
		Permethrin	1.7	U	ng/L	P424717		
		Phenothrin	0.93	U	ng/L	P424717		
		Piperonyl Butoxide	0.16	U	ng/L	P424717		
		Prallethrin	2.1	U	ng/L	P424717		
		Tau-Fluvalinate	0.26	U	ng/L	P424717		
		Tetramethrin	0.78	U	ng/L	P424717		
		Trans-Nonachlor	0.21	U	ng/L	P424717		
		Triclosan Methyl	0.16	U	ng/L	P424717		
		Trifluralin	0.21	U	ng/L	P424717		
	EPA 8276	Chlordane	2.1	U	ng/L	P424717		
		Toxaphene	16	U	ng/L	P424717		
	2381754	EPA 200.7 Rev. 4.4	Calcium	0.075	U	mg/L		P424854
			Iron	30	U	ug/L		P424854
			Magnesium	0.040	U	mg/L		P424854
Potassium			0.30	U	mg/L	P424854		
Sodium			0.50	U	mg/L	P424854		
Strontium			2.0	U	ug/L	P424854		
Tin			3.0	U	ug/L	P424854		
Titanium			0.75	U	ug/L	P424854		
Vanadium			2.0	U	ug/L	P424854		
Zinc			5.0	U	ug/L	P424854		
EPA 200.8 Rev. 5.4		Aluminum	5.0	U	ug/L	P424854		
		Antimony	0.050	U	ug/L	P424854		
		Arsenic	0.050	U	ug/L	P424854		
		Barium	0.20	U	ug/L	P424854		
		Beryllium	0.010	U	ug/L	P424854		
		Boron	2.0	U	ug/L	P424854		
		Cadmium	0.020	U	ug/L	P424854		
		Chromium	0.40	U	ug/L	P424854		

Field ID: FB_01182023

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2381754	EPA 200.8 Rev. 5.4	Cobalt	0.020	U	ug/L	P424854	
		Copper	0.40	U	ug/L	P424854	
		Lead	0.20	U	ug/L	P424854	
		Manganese	0.10	U	ug/L	P424854	
		Molybdenum	0.15	U	ug/L	P424854	
		Nickel	0.50	U	ug/L	P424854	
		Selenium	0.20	U	ug/L	P424854	
		Silver	0.010	U	ug/L	P424854	
		Thallium	0.10	U	ug/L	P424854	

Ref. Method and Comment:
SM 2540 D-2015: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
EPA 8270E: Refer to the Lab Analysis Report for an explanation of QC Codes.
EPA 8270E: Insufficient sample available to perform duplicate matrix spikes. Sample expired for preparation due to need for re-extraction.

Sample Location: Bear Creek 40m blw Lake Dam outfall

Collection Date/Time: 01/18/2023 13:12

Field ID: G4NW0001

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2381787	DEP SOP: NU-094-1	Color (true)	19		PCU	P424740	
	EPA 180.1 Rev. 2.0	Turbidity	2.4		NTU	P424749	
	EPA 300.0 Rev. 2.1	Chloride	2.8		mg Cl/L	P425013	
		Sulfate	0.75		mg SO4/L	P425175	
	SM 2320 B-2011	Total Alkalinity	5.0		mg CaCO3/L	P425140	
	SM 2540 C-2015	TDS	25		mg/L	P425210	
	SM 2540 D-2015	TSS	2	I	mg/L	P425038	
	SM 4500-F- C-2011	Fluoride	0.025	U	mg F/L	P425150	
2381788	EPA 350.1 Rev. 2.0	Ammonia-N	0.045		mg N/L	P425216	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.37		mg N/L	P425195	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.021		mg N/L	P425029	
	EPA 365.1 Rev. 2.0	Total-P	0.010		mg P/L	P424976	
	SM 5310 B-2011	Organic Carbon	4.4		mg C/L	P425084	
2381791	EPA 200.7 Rev. 4.4	Calcium	2.06		mg/L	P424892	
		Chromium	1.0	U	ug/L	P424892	
		Iron	770		ug/L	P424892	
		Magnesium	0.85		mg/L	P424892	
		Potassium	0.30	U	mg/L	P424892	
		Sodium	1.5	I	mg/L	P424892	
		Strontium	4.3	I	ug/L	P424892	
		Tin	3.0	U	ug/L	P424892	
		Titanium	0.75	U	ug/L	P424892	
		Vanadium	2.0	U	ug/L	P424892	
		Zinc	5.0	U	ug/L	P424892	
	EPA 200.8 Rev. 5.4	Aluminum	22		ug/L	P424892	
		Antimony	0.050	U	ug/L	P424892	
		Arsenic	0.33		ug/L	P424892	
		Barium	6.62		ug/L	P424892	
		Beryllium	0.010	U	ug/L	P424892	
		Boron	8.8		ug/L	P424892	
		Cadmium	0.020	U	ug/L	P424892	
		Cobalt	0.120		ug/L	P424892	
		Copper	0.40	U	ug/L	P424892	
		Lead	0.20	U	ug/L	P424892	
		Manganese	25.7		ug/L	P424892	
		Molybdenum	0.15	U	ug/L	P424892	
		Nickel	0.50	U	ug/L	P424892	
		Selenium	0.20	U	ug/L	P424892	
		Silver	0.010	U	ug/L	P424892	
		Thallium	0.10	U	ug/L	P424892	
	SM 2340 B-2011	Hardness	8.6		mg/L	P424892	

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: P424740

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P424749

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P424854

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 200.7 Rev. 4.4
Batch ID: P424892

Component	Result	Code	Units
Calcium	0.075	U	mg/L
Chromium	1.0	U	ug/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: P424854

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P424854

Component	Result	Code	Units
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 200.8 Rev. 5.4
Batch ID: P424892

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
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: P425013

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P425016

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P425175

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P425216

Component	Result	Code	Units
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Quality Assurance Report Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P425216

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P425193

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P425195

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P425029

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P424974

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P424976

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

Reference Method: EPA 8270E
Batch ID: P424717

Component	Result	Code	Units
Aldrin	0.65	U	ng/L
Aldrin	0.65	U	ng/L
Alpha-BHC	0.10	U	ng/L
Alpha-BHC	0.10	U	ng/L
Alpha-Chlordane	0.20	U	ng/L
Alpha-Chlordane	0.20	U	ng/L
Beta-BHC	0.10	U	ng/L
Beta-BHC	0.10	U	ng/L
Beta-Cyfluthrin	1.2	U	ng/L
Beta-Cyfluthrin	1.2	U	ng/L
Bifenthrin	0.50	U	ng/L
Bifenthrin	0.50	U	ng/L
Carbophenothion	0.90	U	ng/L
Carbophenothion	0.90	U	ng/L
Chlorothalonil	3.6	U	ng/L
Chlorothalonil	3.6	U	ng/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 8270E
Batch ID: P424717

Component	Result	Code	Units
Cis-Nonachlor	0.20	U	ng/L
Cis-Nonachlor	0.20	U	ng/L
Cypermethrin	1.5	U	ng/L
Cypermethrin	1.5	U	ng/L
Dacthal	0.15	U	ng/L
Dacthal	0.15	U	ng/L
DDD-p,p'	0.25	U	ng/L
DDD-p,p'	0.25	U	ng/L
DDE-p,p'	0.20	U	ng/L
DDE-p,p'	0.20	U	ng/L
DDT-p,p'	0.25	U	ng/L
DDT-p,p'	0.25	U	ng/L
Delta-BHC	0.40	U	ng/L
Delta-BHC	0.40	U	ng/L
Deltamethrin	1.2	U	ng/L
Deltamethrin	1.2	U	ng/L
Dichlobenil	0.25	U	ng/L
Dichlobenil	0.25	U	ng/L
Dicofol	1.2	U	ng/L
Dicofol	1.2	U	ng/L
Dieldrin	0.40	U	ng/L
Dieldrin	0.40	U	ng/L
Endosulfan I	0.40	U	ng/L
Endosulfan I	0.40	U	ng/L
Endosulfan II	0.40	U	ng/L
Endosulfan II	0.40	U	ng/L
Endosulfan Sulfate	0.30	U	ng/L
Endosulfan Sulfate	0.30	U	ng/L
Endrin	0.40	U	ng/L
Endrin	0.40	U	ng/L
Endrin Aldehyde	0.75	U	ng/L
Endrin Aldehyde	0.75	U	ng/L
Endrin Ketone	0.40	U	ng/L
Endrin Ketone	0.40	U	ng/L
Esfenvalerate	0.75	U	ng/L
Esfenvalerate	0.75	U	ng/L
Ethalfuralin	0.15	U	ng/L
Ethalfuralin	0.15	U	ng/L
Fenpropathrin	0.25	U	ng/L
Fenpropathrin	0.25	U	ng/L
Gamma-BHC	0.12	U	ng/L
Gamma-BHC	0.12	U	ng/L
Gamma-Chlordane	0.20	U	ng/L
Gamma-Chlordane	0.20	U	ng/L
Heptachlor	0.20	U	ng/L
Heptachlor	0.20	U	ng/L
Heptachlor Epoxide	0.25	U	ng/L
Heptachlor Epoxide	0.25	U	ng/L
Hexachlorobenzene	1.0	U	ng/L
Hexachlorobenzene	1.0	U	ng/L
Kepone	5.0	U	ng/L
Kepone	5.0	U	ng/L

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8270E

Batch ID: P424717

Component	Result	Code	Units
Lambda-Cyhalothrin	0.75	U	ng/L
Lambda-Cyhalothrin	0.75	U	ng/L
Methoprene	0.75	U	ng/L
Methoprene	0.75	U	ng/L
Methoxychlor	0.30	U	ng/L
Methoxychlor	0.30	U	ng/L
MGK-264	0.20	U	ng/L
MGK-264	0.20	U	ng/L
Mirex	0.35	U	ng/L
Mirex	0.35	U	ng/L
Oxychlordane	0.30	U	ng/L
Oxychlordane	0.30	U	ng/L
Permethrin	1.6	U	ng/L
Permethrin	1.6	U	ng/L
Phenothrin	0.90	U	ng/L
Phenothrin	0.90	U	ng/L
Piperonyl Butoxide	0.15	U	ng/L
Piperonyl Butoxide	0.15	U	ng/L
Prallethrin	2.0	U	ng/L
Prallethrin	2.0	U	ng/L
Tau-Fluvalinate	0.25	U	ng/L
Tau-Fluvalinate	0.25	U	ng/L
Tetramethrin	0.75	U	ng/L
Tetramethrin	0.75	U	ng/L
Trans-Nonachlor	0.20	U	ng/L
Trans-Nonachlor	0.20	U	ng/L
Triclosan Methyl	0.15	U	ng/L
Triclosan Methyl	0.15	U	ng/L
Trifluralin	0.20	U	ng/L
Trifluralin	0.20	U	ng/L

Reference Method: EPA 8270E

Batch ID: P425033

Component	Result	Code	Units
PCB-1016	2.0	U	ng/L
PCB-1016	2.0	U	ng/L
PCB-1221	2.0	U	ng/L
PCB-1221	2.0	U	ng/L
PCB-1232	2.0	U	ng/L
PCB-1232	2.0	U	ng/L
PCB-1242	2.0	U	ng/L
PCB-1242	2.0	U	ng/L
PCB-1248	2.0	U	ng/L
PCB-1248	2.0	U	ng/L
PCB-1254	2.0	U	ng/L
PCB-1254	2.0	U	ng/L
PCB-1260	2.0	U	ng/L
PCB-1260	2.0	U	ng/L

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8276
Batch ID: P424717

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

Reference Method: SM 2320 B-2011
Batch ID: P425140

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

Reference Method: SM 2540 C-2015
Batch ID: P425210

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2015
Batch ID: P425038

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P425150

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P425084

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: P424740

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	102		P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P424749

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

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P424854

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	103		P	85 - 115
Iron	103		P	85 - 115
Magnesium	104		P	85 - 115
Potassium	101		P	85 - 115
Sodium	101		P	85 - 115
Strontium	101		P	85 - 115
Tin	105		P	85 - 115
Titanium	102		P	85 - 115
Vanadium	102		P	85 - 115
Zinc	108		P	85 - 115

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P424892

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	106		P	85 - 115
Chromium	100		P	85 - 115
Iron	104		P	85 - 115
Magnesium	105		P	85 - 115
Potassium	104		P	85 - 115
Sodium	104		P	85 - 115
Strontium	101		P	85 - 115
Tin	105		P	85 - 115
Titanium	102		P	85 - 115
Vanadium	100		P	85 - 115
Zinc	104		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P424854

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	100		P	85 - 115
Antimony	103		P	85 - 115
Arsenic	103		P	85 - 115
Barium	102		P	85 - 115
Beryllium	95.6		P	85 - 115
Boron	100		P	85 - 115
Cadmium	102		P	85 - 115
Chromium	99.0		P	85 - 115
Cobalt	98.9		P	85 - 115

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P424854

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Copper	101		P	85 - 115
Lead	92.6		P	85 - 115
Manganese	99.4		P	85 - 115
Molybdenum	101		P	85 - 115
Nickel	102		P	85 - 115
Selenium	103		P	85 - 115
Silver	99.6		P	85 - 115
Thallium	100		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P424892

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	99.0		P	85 - 115
Antimony	94.5		P	85 - 115
Arsenic	98.5		P	85 - 115
Barium	97.8		P	85 - 115
Beryllium	87.8		P	85 - 115
Boron	104		P	85 - 115
Cadmium	100		P	85 - 115
Cobalt	91.9		P	85 - 115
Copper	94.9		P	85 - 115
Lead	93.1		P	85 - 115
Manganese	97.0		P	85 - 115
Molybdenum	92.2		P	85 - 115
Nickel	95.0		P	85 - 115
Selenium	95.6		P	85 - 115
Silver	96.4		P	85 - 115
Thallium	96.4		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P425013

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	94.1		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P425016

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	94.2		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P425175

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

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P425216

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

Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P425216

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	99.4		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P425193

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: P425195

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: P425029

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: P424974

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P424976

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

Reference Method: EPA 8270E
Batch ID: P424717

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aldrin	54.5		P	10 - 92.0
Alpha-BHC	80.1		P	75 - 107
Alpha-Chlordane	78.1		P	50 - 108
Beta-BHC	88.8		P	36 - 138
Beta-Cyfluthrin	73.5		P	20 - 161
Bifenthrin	66.9		P	10 - 119
Carbophenothion	66.1		P	19 - 94.0
Chlorothalonil	87.1		P	26 - 186
Cis-Nonachlor	53.0		P	42 - 119
Cypermethrin	64.3		P	22 - 150
Dacthal	80.1		P	72 - 119
DDD-p,p'	75.9		P	45 - 107
DDE-p,p'	69.8		P	48 - 106
DDT-p,p'	65.9		P	48 - 110
Delta-BHC	102		P	54 - 140
Deltamethrin	103		P	22 - 189

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8270E
Batch ID: P424717

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Dichlobenil	65.2		P	36 - 117
Dicofol	54.4		P	46 - 155
Dieldrin	72.3		P	54 - 110
Endosulfan I	73.8		P	59 - 105
Endosulfan II	82.0		P	51 - 118
Endosulfan Sulfate	100		P	57 - 121
Endrin	75.8		P	10 - 120
Endrin Aldehyde	24.2		F	34 - 118
Endrin Ketone	148		P	69 - 177
Esfenvalerate	91.5		P	23 - 168
Ethalfuralin	65.9		P	49 - 99.0
Fenpropathrin	74.2		P	34 - 117
Gamma-BHC	79.3		P	72 - 117
Gamma-Chlordane	78.9		P	43 - 106
Heptachlor	65.9		P	41 - 98.0
Heptachlor Epoxide	72.7		P	57 - 106
Hexachlorobenzene	68.4		P	36 - 99.0
Kepone	153		P	16 - 215
Lambda-Cyhalothrin	63.5		P	21 - 177
Methoprene	63.6		P	10 - 119
Methoxychlor	84.7		P	60 - 112
MGK-264	77.3		P	26 - 122
Mirex	58.6		P	10 - 169
Oxychlordane	71.0		P	43 - 105
Permethrin	73.9		P	24 - 148
Phenothrin	56.7		P	10 - 106
Piperonyl Butoxide	138		P	10 - 139
Prallethrin	80.8		P	17 - 109
Tau-Fluvalinate	78.4		P	13 - 131
Tetramethrin	100		P	10 - 132
Trans-Nonachlor	68.5		P	44 - 106
Triclosan Methyl	88.2		P	59 - 109
Trifluralin	68.8		P	44 - 101

Reference Method: EPA 8270E
Batch ID: P425033

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
PCB-1016	97.3	101	P/P	48 - 112
PCB-1260	109	117	P/P	44 - 118

Reference Method: EPA 8276
Batch ID: P424717

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlordane	91.1		P	61 - 116
Toxaphene	99.3		P	48 - 124

Reference Method: SM 2320 B-2011
Batch ID: P425140

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

Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-2011
Batch ID: P425140

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	95.9		P	94 - 106

Reference Method: SM 2540 C-2015
Batch ID: P425210

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

Reference Method: SM 2540 D-2015
Batch ID: P425038

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	94.8		P	85 - 106

Reference Method: SM 4500-F- C-2011
Batch ID: P425150

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	101		P	96 - 104

Reference Method: SM 5310 B-2011
Batch ID: P425084

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	99.0		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P424854

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2381218	Calcium	102		P	80 - 120
2381218	Iron	105	106	P/P	80 - 120
2381218	Magnesium	104	106	P/P	80 - 120
2381218	Potassium	102	101	P/P	80 - 120
2381218	Sodium	101		P	80 - 120
2381218	Strontium	104	103	P/P	80 - 120
2381218	Tin	105	106	P/P	80 - 120
2381218	Titanium	103	102	P/P	80 - 120
2381218	Vanadium	103	102	P/P	80 - 120
2381218	Zinc	106	106	P/P	80 - 120
2381349	Calcium	98.1		P	80 - 120
2381349	Iron	104		P	80 - 120
2381349	Magnesium	106		P	80 - 120
2381349	Potassium	102		P	80 - 120
2381349	Sodium	98.8		P	80 - 120
2381349	Strontium	104		P	80 - 120
2381349	Tin	103		P	80 - 120
2381349	Titanium	100		P	80 - 120
2381349	Vanadium	102		P	80 - 120
2381349	Zinc	106		P	80 - 120

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P424892

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2382005	Calcium	104		P	80 - 120
2382005	Chromium	99.7	102	P/P	80 - 120
2382005	Iron	106	107	P/P	80 - 120
2382005	Magnesium	103	105	P/P	80 - 120
2382005	Potassium	101	103	P/P	80 - 120
2382005	Sodium	103		P	80 - 120
2382005	Strontium	101	102	P/P	80 - 120
2382005	Tin	104	105	P/P	80 - 120
2382005	Titanium	101	103	P/P	80 - 120
2382005	Vanadium	102	104	P/P	80 - 120
2382005	Zinc	98.5	101	P/P	80 - 120
2382030	Calcium	104		P	80 - 120
2382030	Chromium	100		P	80 - 120
2382030	Iron	105		P	80 - 120
2382030	Magnesium	106		P	80 - 120
2382030	Potassium	103		P	80 - 120
2382030	Sodium	104		P	80 - 120
2382030	Strontium	101		P	80 - 120
2382030	Tin	104		P	80 - 120
2382030	Titanium	102		P	80 - 120
2382030	Vanadium	100		P	80 - 120
2382030	Zinc	95.4		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P424854

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

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P424854

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2381218	Aluminum	98.7	98.6	P/P	80 - 120
2381218	Antimony	105	104	P/P	80 - 120
2381218	Arsenic	105	104	P/P	80 - 120
2381218	Barium	102	101	P/P	80 - 120
2381218	Beryllium	96.3	95.2	P/P	80 - 120
2381218	Boron	97.8	98.7	P/P	80 - 120
2381218	Cadmium	105	105	P/P	80 - 120
2381218	Chromium	101	101	P/P	80 - 120
2381218	Cobalt	99.1	98.7	P/P	80 - 120
2381218	Copper	101	99.9	P/P	80 - 120
2381218	Lead	95.4	93.8	P/P	80 - 120
2381218	Manganese	97.9	98.8	P/P	80 - 120
2381218	Molybdenum	104	103	P/P	80 - 120
2381218	Nickel	103	102	P/P	80 - 120
2381218	Selenium	104	103	P/P	80 - 120
2381218	Silver	99.9	100	P/P	80 - 120
2381218	Thallium	104	103	P/P	80 - 120
2381349	Aluminum	98.0		P	80 - 120
2381349	Antimony	106		P	80 - 120
2381349	Arsenic	104		P	80 - 120
2381349	Barium	103		P	80 - 120
2381349	Beryllium	96.9		P	80 - 120
2381349	Boron	96.8		P	80 - 120
2381349	Cadmium	105		P	80 - 120
2381349	Chromium	103		P	80 - 120
2381349	Cobalt	97.5		P	80 - 120
2381349	Copper	97.7		P	80 - 120
2381349	Lead	93.4		P	80 - 120
2381349	Manganese	102		P	80 - 120
2381349	Molybdenum	104		P	80 - 120
2381349	Nickel	98.7		P	80 - 120
2381349	Selenium	103		P	80 - 120
2381349	Silver	100		P	80 - 120
2381349	Thallium	103		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P424892

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2382005	Aluminum	96.8	100	P/P	80 - 120
2382005	Antimony	97.7	98.5	P/P	80 - 120
2382005	Arsenic	102	104	P/P	80 - 120
2382005	Barium	100	101	P/P	80 - 120
2382005	Beryllium	93.6	93.5	P/P	80 - 120
2382005	Boron	97.4	101	P/P	80 - 120
2382005	Cadmium	102	102	P/P	80 - 120
2382005	Cobalt	93.4	95.6	P/P	80 - 120
2382005	Copper	95.7	96.9	P/P	80 - 120
2382005	Lead	95.0	97.2	P/P	80 - 120
2382005	Manganese	94.8	97.5	P/P	80 - 120
2382005	Molybdenum	94.3	96.9	P/P	80 - 120
2382005	Nickel	98.0	99.0	P/P	80 - 120

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P424892

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2382005	Selenium	98.9	99.8	P/P	80 - 120
2382005	Silver	94.4	95.7	P/P	80 - 120
2382005	Thallium	99.4	101	P/P	80 - 120
2382030	Aluminum	102		P	80 - 120
2382030	Antimony	98.1		P	80 - 120
2382030	Arsenic	100		P	80 - 120
2382030	Barium	104		P	80 - 120
2382030	Beryllium	97.5		P	80 - 120
2382030	Boron	107		P	80 - 120
2382030	Cadmium	103		P	80 - 120
2382030	Cobalt	95.2		P	80 - 120
2382030	Copper	99.2		P	80 - 120
2382030	Lead	96.3		P	80 - 120
2382030	Manganese	105		P	80 - 120
2382030	Molybdenum	95.1		P	80 - 120
2382030	Nickel	100		P	80 - 120
2382030	Selenium	97.7		P	80 - 120
2382030	Silver	98.5		P	80 - 120
2382030	Thallium	98.5		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P425013

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2381222	Chloride	94.5		P	90 - 110
2381223	Chloride	94.3		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P425016

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2381222	Sulfate	93.8		P	90 - 110
2381223	Sulfate	93.3		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P425175

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2382066	Sulfate	92.2		P	90 - 110
2382155	Sulfate	96.8		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P425216

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2381710	Ammonia-N	97.8	98.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P425193

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2381650	Kjeldahl Nitrogen	92.4	97.0	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P425195

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2381822	Kjeldahl Nitrogen	103	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P425029

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2381685	NO2NO3-N	99.8	99.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P424974

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2381673	Total-P	106	106	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P424976

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2381799	Total-P	108	109	P/P	90 - 110

Reference Method: EPA 8270E
Batch ID: P424717

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2381752	Aldrin	44.7	46.4	P/P	20 - 82.0
2381752	Alpha-BHC	79.4	84.9	P/P	71 - 109
2381752	Alpha-Chlordane	71.1	76.9	P/P	42 - 106
2381752	Beta-BHC	78.0	77.8	P/P	69 - 180
2381752	Beta-Cyfluthrin	85.4	90.6	P/P	18 - 175
2381752	Bifenthrin	79.9	73.1	P/P	21 - 128
2381752	Carbophenothion	63.6	65.2	P/P	10 - 126
2381752	Chlorothalonil	107	98.4	P/P	10 - 300
2381752	Cis-Nonachlor	51.3	46.1	P/P	34 - 106
2381752	Cypermethrin	69.0	72.2	P/P	22 - 158
2381752	Dacthal	72.9	74.6	P/P	54 - 116
2381752	DDD-p,p'	69.2	74.4	P/P	34 - 107
2381752	DDE-p,p'	64.1	66.8	P/P	33 - 110
2381752	DDT-p,p'	60.4	61.5	P/P	50 - 122
2381752	Delta-BHC	88.9	91.9	P/P	77 - 193
2381752	Deltamethrin	117	118	P/P	10 - 195
2381752	Dichlobenil	50.5	54.1	P/P	25 - 113
2381752	Dicofol	60.3	60.2	P/P	38 - 247
2381752	Dieldrin	67.7	69.9	P/P	45 - 118
2381752	Endosulfan I	60.9	62.2	P/P	51 - 106
2381752	Endosulfan II	70.8	74.0	P/P	37 - 122
2381752	Endosulfan Sulfate	97.3	90.1	P/P	43 - 132
2381752	Endrin	68.1	71.2	P/P	29 - 101
2381752	Endrin Aldehyde	51.0	45.7	P/P	19 - 110
2381752	Endrin Ketone	89.6	137	P/P	60 - 140
2381752	Esfenvalerate	117	118	P/P	26 - 199
2381752	Ethalfuralin	59.8	60.4	P/P	45 - 99.0
2381752	Fenpropathrin	68.6	76.5	P/P	35 - 120

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8270E

Batch ID: P424717

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2381752	Gamma-BHC	69.3	72.3	P/P	63 - 128
2381752	Gamma-Chlordane	75.0	75.6	P/P	40 - 104
2381752	Heptachlor	55.1	57.6	P/P	36 - 97.0
2381752	Heptachlor Epoxide	61.5	65.5	P/P	49 - 184
2381752	Hexachlorobenzene	59.7	61.4	P/P	39 - 96.0
2381752	Kepone	134	139	P/P	10 - 217
2381752	Lambda-Cyhalothrin	80.3	81.8	P/P	21 - 193
2381752	Methoprene	74.1	77.6	P/P	20 - 106
2381752	Methoxychlor	88.3	80.2	P/P	53 - 118
2381752	MGK-264	73.4	76.3	P/P	40 - 118
2381752	Mirex	50.9	54.3	P/P	26 - 92.0
2381752	Oxychlordane	60.0	65.2	P/P	44 - 99.0
2381752	Permethrin	68.4	72.5	P/P	33 - 182
2381752	Phenothrin	68.1	72.7	P/P	10 - 129
2381752	Piperonyl Butoxide	87.7	90.3	P/P	10 - 211
2381752	Prallethrin	88.2	88.0	P/P	24 - 113
2381752	Tau-Fluvalinate	107	111	P/P	14 - 149
2381752	Tetramethrin	107	103	P/P	17 - 151
2381752	Trans-Nonachlor	60.9	60.9	P/P	42 - 102
2381752	Triclosan Methyl	75.6	77.6	P/P	48 - 108
2381752	Trifluralin	61.8	60.1	P/P	47 - 96.0

Reference Method: EPA 8270E

Batch ID: P425033

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2382133	PCB-1016	87.5		P	46 - 111
2382133	PCB-1260	98.7		P	45 - 114

Reference Method: EPA 8276

Batch ID: P424717

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2381365	Chlordane	91.9	93.2	P/P	53 - 126
2381365	Toxaphene	112	112	P/P	56 - 211

Reference Method: SM 4500-F- C-2011

Batch ID: P425150

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2382200	Fluoride	104	101	P/P	94 - 104

Reference Method: SM 5310 B-2011

Batch ID: P425084

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2381999	Organic Carbon	89.0	99.4	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P424740

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2381646	Color (true)	2.78	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P424749

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2381602	Turbidity	3.27	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P424854

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2381218	Calcium	1.10	Spike	P	0 - 20
2381218	Iron	0.897	Spike	P	0 - 20
2381218	Magnesium	1.18	Spike	P	0 - 20
2381218	Potassium	0.950	Spike	P	0 - 20
2381218	Sodium	0.124	Spike	P	0 - 20
2381218	Strontium	0.344	Spike	P	0 - 20
2381218	Tin	0.300	Spike	P	0 - 20
2381218	Titanium	0.400	Spike	P	0 - 20
2381218	Vanadium	0.238	Spike	P	0 - 20
2381218	Zinc	0.197	Spike	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P424892

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2382005	Calcium	0.181	Spike	P	0 - 20
2382005	Chromium	1.98	Spike	P	0 - 20
2382005	Iron	0.602	Spike	P	0 - 20
2382005	Magnesium	0.592	Spike	P	0 - 20
2382005	Potassium	1.34	Spike	P	0 - 20
2382005	Sodium	1.50	Spike	P	0 - 20
2382005	Strontium	1.16	Spike	P	0 - 20
2382005	Tin	0.882	Spike	P	0 - 20
2382005	Titanium	1.86	Spike	P	0 - 20
2382005	Vanadium	2.32	Spike	P	0 - 20
2382005	Zinc	2.72	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P424854

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2381218	Aluminum	0.0275	Spike	P	0 - 20
2381218	Antimony	0.309	Spike	P	0 - 20
2381218	Arsenic	1.18	Spike	P	0 - 20
2381218	Barium	0.508	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P424854

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2381218	Beryllium	1.07	Spike	P	0 - 20
2381218	Boron	0.834	Spike	P	0 - 20
2381218	Cadmium	0.193	Spike	P	0 - 20
2381218	Chromium	0.0693	Spike	P	0 - 20
2381218	Cobalt	0.393	Spike	P	0 - 20
2381218	Copper	0.785	Spike	P	0 - 20
2381218	Lead	1.76	Spike	P	0 - 20
2381218	Manganese	0.487	Spike	P	0 - 20
2381218	Molybdenum	1.16	Spike	P	0 - 20
2381218	Nickel	0.626	Spike	P	0 - 20
2381218	Selenium	1.55	Spike	P	0 - 20
2381218	Silver	0.253	Spike	P	0 - 20
2381218	Thallium	1.12	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P424892

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2382005	Aluminum	3.16	Spike	P	0 - 20
2382005	Antimony	0.826	Spike	P	0 - 20
2382005	Arsenic	1.36	Spike	P	0 - 20
2382005	Barium	0.954	Spike	P	0 - 20
2382005	Beryllium	0.104	Spike	P	0 - 20
2382005	Boron	2.73	Spike	P	0 - 20
2382005	Cadmium	0.743	Spike	P	0 - 20
2382005	Cobalt	2.34	Spike	P	0 - 20
2382005	Copper	1.15	Spike	P	0 - 20
2382005	Lead	2.24	Spike	P	0 - 20
2382005	Manganese	1.69	Spike	P	0 - 20
2382005	Molybdenum	2.01	Spike	P	0 - 20
2382005	Nickel	0.974	Spike	P	0 - 20
2382005	Selenium	0.986	Spike	P	0 - 20
2382005	Silver	1.33	Spike	P	0 - 20
2382005	Thallium	2.03	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P425013

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2381222	Chloride	0.294	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P425016

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2381222	Sulfate	0.465	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P425175

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2382066	Sulfate	2.81	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P425216

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2381710	Ammonia-N	0.646	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P425193

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2381650	Kjeldahl Nitrogen	3.88	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P425195

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2381822	Kjeldahl Nitrogen	0.550	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P425029

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2381685	NO2NO3-N	0.458	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P424974

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2381673	Total-P	0.389	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P424976

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2381799	Total-P	1.15	Spike	P	0 - 20

Reference Method: EPA 8270E
Batch ID: P424717

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2381752	Aldrin	3.66	Spike	P	0 - 41
2381752	Alpha-BHC	6.76	Spike	P	0 - 25

Quality Assurance Report Precision

Reference Method: EPA 8270E
Batch ID: P424717

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2381752	Alpha-Chlordane	7.86	Spike	P	0 - 33
2381752	Beta-BHC	0.281	Spike	P	0 - 36
2381752	Beta-Cyfluthrin	5.85	Spike	P	0 - 42
2381752	Bifenthrin	8.87	Spike	P	0 - 53
2381752	Carbophenothion	2.50	Spike	P	0 - 49
2381752	Chlorothalonil	8.35	Spike	P	0 - 71
2381752	Cis-Nonachlor	10.5	Spike	P	0 - 29
2381752	Cypermethrin	4.60	Spike	P	0 - 40
2381752	Dacthal	2.23	Spike	P	0 - 26
2381752	DDD-p,p'	7.28	Spike	P	0 - 39
2381752	DDE-p,p'	4.07	Spike	P	0 - 33
2381752	DDT-p,p'	1.76	Spike	P	0 - 40
2381752	Delta-BHC	3.27	Spike	P	0 - 37
2381752	Deltamethrin	1.54	Spike	P	0 - 100
2381752	Dichlobenil	6.82	Spike	P	0 - 40
2381752	Dicofol	0.124	Spike	P	0 - 31
2381752	Dieldrin	3.03	Spike	P	0 - 27
2381752	Endosulfan I	2.12	Spike	P	0 - 23
2381752	Endosulfan II	4.41	Spike	P	0 - 28
2381752	Endosulfan Sulfate	7.71	Spike	P	0 - 38
2381752	Endrin	4.50	Spike	P	0 - 63
2381752	Endrin Aldehyde	11.0	Spike	P	0 - 60
2381752	Endrin Ketone	42.0	Spike	F	0 - 37
2381752	Esfenvalerate	1.02	Spike	P	0 - 52
2381752	Ethalfuralin	0.967	Spike	P	0 - 23
2381752	Fenpropathrin	10.9	Spike	P	0 - 32
2381752	Gamma-BHC	4.27	Spike	P	0 - 17
2381752	Gamma-Chlordane	0.810	Spike	P	0 - 40
2381752	Heptachlor	4.43	Spike	P	0 - 29
2381752	Heptachlor Epoxide	6.29	Spike	P	0 - 25
2381752	Hexachlorobenzene	2.70	Spike	P	0 - 36
2381752	Kepone	3.92	Spike	P	0 - 93
2381752	Lambda-Cyhalothrin	1.77	Spike	P	0 - 55
2381752	Methoprene	4.72	Spike	P	0 - 53
2381752	Methoxychlor	9.63	Spike	P	0 - 29
2381752	MGK-264	3.92	Spike	P	0 - 35
2381752	Mirex	6.47	Spike	P	0 - 46
2381752	Oxychlordane	8.38	Spike	P	0 - 29
2381752	Permethrin	5.82	Spike	P	0 - 44
2381752	Phenothrin	6.46	Spike	P	0 - 56
2381752	Piperonyl Butoxide	2.93	Spike	P	0 - 100
2381752	Prallethrin	0.159	Spike	P	0 - 42
2381752	Tau-Fluvalinate	4.13	Spike	P	0 - 54
2381752	Tetramethrin	4.12	Spike	P	0 - 51
2381752	Trans-Nonachlor	0.0590	Spike	P	0 - 37
2381752	Triclosan Methyl	2.55	Spike	P	0 - 31
2381752	Trifluralin	2.69	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8270E
Batch ID: P425033

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
LFB	PCB-1016	3.97	LCS	P	0 - 24
LFB	PCB-1260	7.10	LCS	P	0 - 29

Reference Method: EPA 8276
Batch ID: P424717

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2381365	Chlordane	1.33	Spike	P	0 - 25
2381365	Toxaphene	0.245	Spike	P	0 - 26

Reference Method: SM 2320 B-2011
Batch ID: P425140

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2382200	Total Alkalinity	0.844	Sample	P	0 - 3.8

Reference Method: SM 2540 C-2015
Batch ID: P425210

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2381422	TDS	4.77	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P425150

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2382200	Fluoride	1.50	Spike	P	0 - 1.6

Reference Method: SM 5310 B-2011
Batch ID: P425084

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2381999	Organic Carbon	8.58	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2381752

Field Sample ID: G4NW0016

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8270E	Decachlorobiphenyl	88.8	P	29 - 130
EPA 8270E	Decachlorobiphenyl	47.0	P	30 - 118
EPA 8270E	Tetrachloro-m-xylene	64.3	P	29 - 104
EPA 8270E	Tetrachloro-m-xylene	45.4	P	30 - 97.0
EPA 8276	Decachlorobiphenyl	48.4	P	30 - 101
EPA 8276	PCNB	65.7	P	48 - 121

Lab Sample ID: 2381753

Field Sample ID: FB_01182023

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8270E	Decachlorobiphenyl	99.3	P	29 - 130
EPA 8270E	Decachlorobiphenyl	66.1	P	30 - 118
EPA 8270E	Tetrachloro-m-xylene	79.4	P	29 - 104
EPA 8270E	Tetrachloro-m-xylene	62.2	P	30 - 97.0
EPA 8276	Decachlorobiphenyl	57.0	P	30 - 101
EPA 8276	PCNB	81.5	P	48 - 121

Quality Assurance Report Calibration Verification

Reference Method: DEP SOP: NU-094-1

Run ID: A116984

Included Lab Sample IDs: 2381709, 2381711, 2381787

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	102	102	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A116988

Included Lab Sample IDs: 2381709, 2381711, 2381787

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: A117051

Included Lab Sample IDs: 2381709, 2381711, 2381787

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	97.1	98.2	P/P	90 - 110
Sulfate	97.0	97.6	P/P	90 - 110
Sulfate	98.8	97.0	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A117055

Included Lab Sample IDs: 2381754

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	98.3	96.1	P/P	90 - 110
Antimony	103	104	P/P	90 - 110
Arsenic	103	102	P/P	90 - 110
Barium	99.1	99.2	P/P	90 - 110
Beryllium	98.5	98.7	P/P	90 - 110
Boron	94.6	92.3	P/P	90 - 110
Cadmium	101	101	P/P	90 - 110
Chromium	99.3	99.4	P/P	90 - 110
Cobalt	96.2	94.6	P/P	90 - 110
Copper	98.1	96.5	P/P	90 - 110
Lead	91.3	92.0	P/P	90 - 110
Manganese	98.9	99.8	P/P	90 - 110
Molybdenum	99.3	98.8	P/P	90 - 110
Nickel	99.3	96.6	P/P	90 - 110
Selenium	105	103	P/P	90 - 110
Silver	101	100	P/P	90 - 110
Thallium	99.7	99.8	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A117078

Included Lab Sample IDs: 2381754

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	100	101	P/P	95 - 105
Iron	103	102	P/P	95 - 105
Magnesium	102	103	P/P	95 - 105
Potassium	100	101	P/P	95 - 105
Sodium	98.8	101	P/P	95 - 105

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A117078

Included Lab Sample IDs: 2381754

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Strontium	99.6	104	P/P	95 - 105
Tin	101	103	P/P	95 - 105
Titanium	97.0	99.1	P/P	95 - 105
Vanadium	96.9	99.5	P/P	95 - 105
Zinc	103	106	P/P	95 - 105

Reference Method: EPA 8276

Run ID: A117106

Included Lab Sample IDs: 2381752, 2381753

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chlordane	100		P	80 - 120
Toxaphene	109		P	80 - 120

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A117114

Included Lab Sample IDs: 2381710, 2381712, 2381788

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	100	100	P/P	90 - 110
NO2NO3-N	99.5	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A117119

Included Lab Sample IDs: 2381710, 2381712, 2381788

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	97.2	99.8	P/P	90 - 110
Total-P	98.0	97.2	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A117136

Included Lab Sample IDs: 2381710, 2381712, 2381788

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	105	104	P/P	90 - 110

Reference Method: EPA 8270E

Run ID: A117146

Included Lab Sample IDs: 2381752, 2381753

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
PCB-1016	98.7		P	80 - 120
PCB-1260	101		P	80 - 120

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A117147

Included Lab Sample IDs: 2381791

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	104	108	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A117147

Included Lab Sample IDs: 2381791

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chromium	104	107	P/P	90 - 110
Iron	105	108	P/P	90 - 110
Magnesium	104	108	P/P	90 - 110
Potassium	104	108	P/P	90 - 110
Sodium	105	109	P/P	90 - 110
Strontium	104	106	P/P	90 - 110
Tin	107	109	P/P	90 - 110
Titanium	103	106	P/P	90 - 110
Vanadium	102	104	P/P	90 - 110

Reference Method: EPA 8270E

Run ID: A117156

Included Lab Sample IDs: 2381752, 2381753

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aldrin	105		P	80 - 120
Alpha-BHC	98.4		P	80 - 120
Alpha-Chlordane	103		P	80 - 120
Beta-BHC	103		P	80 - 120
Beta-Cyfluthrin	100		P	80 - 120
Bifenthrin	103		P	80 - 120
Carbophenothion	105		P	80 - 120
Chlorothalonil	105		P	80 - 120
Cis-Nonachlor	82.0		P	80 - 120
Cypermethrin	116		P	80 - 120
Dacthal	111		P	80 - 120
DDD-p,p'	106		P	80 - 120
DDE-p,p'	106		P	80 - 120
DDT-p,p'	98.5		P	80 - 120
Delta-BHC	102		P	80 - 120
Deltamethrin	101		P	80 - 120
Dichlobenil	97.8		P	80 - 120
Dicofol	83.5		P	80 - 120
Dieldrin	105		P	80 - 120
Endosulfan I	110		P	80 - 120
Endosulfan II	114		P	80 - 120
Endosulfan Sulfate	104		P	80 - 120
Endrin	108		P	80 - 120
Endrin Aldehyde	104		P	80 - 120
Endrin Ketone	113		P	80 - 120
Esfenvalerate	103		P	80 - 120
Ethalfuralin	96.5		P	80 - 120
Fenpropathrin	111		P	80 - 120
Gamma-BHC	108		P	80 - 120
Gamma-Chlordane	112		P	80 - 120
Heptachlor	113		P	80 - 120
Heptachlor Epoxide	108		P	80 - 120
Hexachlorobenzene	101		P	80 - 120
Kepone	85.5		P	80 - 120
Lambda-Cyhalothrin	111		P	80 - 120
Methoprene	102		P	80 - 120

Quality Assurance Report Calibration Verification

Reference Method: EPA 8270E

Run ID: A117156

Included Lab Sample IDs: 2381752, 2381753

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Methoxychlor	92.8		P	80 - 120
MGK-264	103		P	80 - 120
Mirex	118		P	80 - 120
Oxychlordane	103		P	80 - 120
Permethrin	104		P	80 - 120
Phenothrin	110		P	80 - 120
Piperonyl Butoxide	84.2		P	80 - 120
Prallethrin	98.7		P	80 - 120
Tau-Fluvalinate	102		P	80 - 120
Tetramethrin	104		P	80 - 120
Trans-Nonachlor	110		P	80 - 120
Triclosan Methyl	113		P	80 - 120
Trifluralin	97.4		P	80 - 120

Reference Method: SM 2320 B-2011

Run ID: A117157

Included Lab Sample IDs: 2381709, 2381711, 2381787

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	96.1	95.2	P/P	90 - 110

Reference Method: SM 4500-F- C-2011

Run ID: A117157

Included Lab Sample IDs: 2381709, 2381711, 2381787

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

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A117167

Included Lab Sample IDs: 2381791

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Zinc	101	99.2	P/P	95 - 105

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A117170

Included Lab Sample IDs: 2381791

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	100	102	P/P	90 - 110
Antimony	96.3	98.0	P/P	90 - 110
Arsenic	101	100	P/P	90 - 110
Barium	98.7	98.8	P/P	90 - 110
Boron	103	103	P/P	90 - 110
Cadmium	100	101	P/P	90 - 110
Cobalt	93.2	93.7	P/P	90 - 110
Copper	97.1	98.0	P/P	90 - 110
Lead	97.9	98.4	P/P	90 - 110
Manganese	99.1	101	P/P	90 - 110
Molybdenum	93.6	94.3	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A117170

Included Lab Sample IDs: 2381791

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Nickel	96.4	97.0	P/P	90 - 110
Selenium	101	102	P/P	90 - 110
Silver	98.0	99.0	P/P	90 - 110
Thallium	98.0	99.0	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A117185

Included Lab Sample IDs: 2381710, 2381712, 2381788

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.9	98.8	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A117196

Included Lab Sample IDs: 2381791

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Beryllium	98.1	98.9	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A117207

Included Lab Sample IDs: 2381710

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	92.0	96.3	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A117211

Included Lab Sample IDs: 2381788

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	95.3	94.9	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A117258

Included Lab Sample IDs: 2381712

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	99.3	97.1	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 SMP	MS
DEP SOP: NU-094-1	Color (true)	102					2.78	
EPA 180.1 Rev. 2.0	Turbidity	101					3.27	
EPA 200.7 Rev. 4.4	Calcium	103	102	98.1				1.10
	Calcium	106	104	104				0.181
	Chromium	100	99.7	102	100			1.98
	Iron	103	105	106	104			0.897
	Iron	104	106	107	105			0.602
	Magnesium	104	104	106	106			1.18
	Magnesium	105	103	105	106			0.592
	Potassium	101	102	101	102			0.950
	Potassium	104	101	103	103			1.34
	Sodium	101	101	98.8				0.124
	Sodium	104	103	104				1.50
	Strontium	101	104	103	104			0.344
	Strontium	101	101	102	101			1.16
	Tin	105	105	106	103			0.300
	Tin	105	104	105	104			0.882
	Titanium	102	103	102	100			0.400
	Titanium	102	101	103	102			1.86
	Vanadium	102	103	102	102			0.238
	Vanadium	100	102	104	100			2.32
	Zinc	108	106	106	106			0.197
	Zinc	104	98.5	101	95.4			2.72
EPA 200.8 Rev. 5.4	Aluminum	100	98.7	98.6	98.0			0.0275
	Aluminum	99.0	96.8	100	102			3.16
	Antimony	103	105	104	106			0.309
	Antimony	94.5	97.7	98.5	98.1			0.826
	Arsenic	103	105	104	104			1.18
	Arsenic	98.5	102	104	100			1.36
	Barium	102	102	101	103			0.508
	Barium	97.8	100	101	104			0.954
	Beryllium	95.6	96.3	95.2	96.9			1.07
	Beryllium	87.8	93.6	93.5	97.5			0.104
	Boron	100	97.8	98.7	96.8			0.834
	Boron	104	97.4	101	107			2.73
	Cadmium	102	105	105	105			0.193
	Cadmium	100	102	102	103			0.743
	Chromium	99.0	101	101	103			0.0693
	Cobalt	98.9	99.1	98.7	97.5			0.393
	Cobalt	91.9	93.4	95.6	95.2			2.34
	Copper	101	101	99.9	97.7			0.785
	Copper	94.9	95.7	96.9	99.2			1.15
	Lead	92.6	95.4	93.8	93.4			1.76
	Lead	93.1	95.0	97.2	96.3			2.24
	Manganese	99.4	97.9	98.8	102			0.487
	Manganese	97.0	94.8	97.5	105			1.69
	Molybdenum	101	104	103	104			1.16
	Molybdenum	92.2	94.3	96.9	95.1			2.01
	Nickel	102	103	102	98.7			0.626
	Nickel	95.0	98.0	99.0	100			0.974
	Selenium	103	104	103	103			1.55
	Selenium	95.6	98.9	99.8	97.7			0.986
	Silver	99.6	99.9	100	100			0.253
	Silver	96.4	94.4	95.7	98.5			1.33

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery			Precision	
							LCS	SMP
EPA 200.8 Rev. 5.4	Thallium	100		104	103	103		
	Thallium	96.4		99.4	101	98.5		
EPA 300.0 Rev. 2.1	Chloride	94.1		94.5	94.3			0.294
	Sulfate	94.2		93.8	93.3			0.465
	Sulfate	101		92.2	96.8			2.81
	Ammonia-N	99.4		97.8	98.6			
EPA 350.1 Rev. 2.0	Kjeldahl Nitrogen	106		92.4	97.0			0.646
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	101		103	102			3.88
EPA 353.2 Rev. 2.0	NO2NO3-N	100		99.8	99.2			0.550
EPA 365.1 Rev. 2.0	Total-P	106		106	106			0.458
	Total-P	105		108	109			0.389
EPA 8270E	Aldrin	54.5		44.7	46.4			1.15
	Alpha-BHC	80.1		79.4	84.9			2.03
	Alpha-Chlordane	78.1		71.1	76.9			
	Beta-BHC	88.8		78.0	77.8			0.294
	Beta-Cyfluthrin	73.5		85.4	90.6			0.465
	Bifenthrin	66.9		79.9	73.1			2.81
	Carbophenothion	66.1		63.6	65.2			
	Chlorothalonil	87.1		107	98.4			0.646
	Cis-Nonachlor	53.0		51.3	46.1			3.88
	Cypermethrin	64.3		69.0	72.2			0.550
	Dacthal	80.1		72.9	74.6			0.458
	DDD-p,p'	75.9		69.2	74.4			0.389
	DDE-p,p'	69.8		64.1	66.8			1.15
	DDT-p,p'	65.9		60.4	61.5			2.03
	Delta-BHC	102		88.9	91.9			
	Deltamethrin	103		117	118			0.646
	Dichlobenil	65.2		50.5	54.1			3.88
	Dicofol	54.4		60.3	60.2			0.550
	Dieldrin	72.3		67.7	69.9			0.458
	Endosulfan I	73.8		60.9	62.2			3.03
	Endosulfan II	82.0		70.8	74.0			2.12
	Endosulfan Sulfate	100		97.3	90.1			4.41
	Endrin	75.8		68.1	71.2			7.71
	Endrin Aldehyde	24.2		51.0	45.7			4.50
	Endrin Ketone	148		89.6	137			11.0
	Esfenvalerate	91.5		117	118			42.0
	Ethalfuralin	65.9		59.8	60.4			1.02
	Fenpropathrin	74.2		68.6	76.5			0.967
	Gamma-BHC	79.3		69.3	72.3			10.9
	Gamma-Chlordane	78.9		75.0	75.6			4.27
	Heptachlor	65.9		55.1	57.6			0.810
	Heptachlor Epoxide	72.7		61.5	65.5			4.43
	Hexachlorobenzene	68.4		59.7	61.4			6.29
	Kepone	153		134	139			2.70
	Lambda-Cyhalothrin	63.5		80.3	81.8			3.92
	Methoprene	63.6		74.1	77.6			1.77
	Methoxychlor	84.7		88.3	80.2			4.72
	MGK-264	77.3		73.4	76.3			9.63
	Mirex	58.6		50.9	54.3			3.92
	Oxychlordane	71.0		60.0	65.2			6.47
	PCB-1016	97.3	101	87.5		3.97		8.38
	PCB-1260	109	117	98.7		7.10		
	Permethrin	73.9		68.4	72.5			5.82

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
EPA 8270E	Phenothrin	56.7	68.1	72.7		6.46
	Piperonyl Butoxide	138	87.7	90.3		2.93
	Prallethrin	80.8	88.2	88.0		0.159
	Tau-Fluvalinate	78.4	107	111		4.13
	Tetramethrin	100	107	103		4.12
	Trans-Nonachlor	68.5	60.9	60.9		0.0590
	Triclosan Methyl	88.2	75.6	77.6		2.55
	Trifluralin	68.8	61.8	60.1		2.69
EPA 8276	Chlordane	91.1	91.9	93.2		1.33
	Toxaphene	99.3	112	112		0.245
SM 2320 B-2011	Total Alkalinity	95.9			0.844	
SM 2540 C-2015	TDS	103			4.77	
SM 2540 D-2015	TSS	94.8				
SM 4500-F- C-2011	Fluoride	101	104	101		1.50
SM 5310 B-2011	Organic Carbon	99.0	89.0	99.4		8.58

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2381709, 2381711, 2381787
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2381709, 2381711, 2381787
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2381754, 2381791
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2381754, 2381791
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2381709, 2381711, 2381787
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2381709, 2381711, 2381787
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2381710, 2381712, 2381788
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2381710, 2381712, 2381788
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2381710, 2381712, 2381788
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2381710, 2381712, 2381788
EPA 8270E	Organochlorine pesticides, pyrethroids and tracers in water matrices by GC/MS/MS	2381752, 2381753
EPA 8270E	PCBs in water matrices by GC/MS/MS	2381752, 2381753
EPA 8276	Organochlorine pesticides in water matrices by GC/MS with Negative Chemical Ionization	2381752, 2381753
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2381709, 2381711, 2381787
SM 2340 B-2011	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO ₃	2381791
SM 2540 C-2015	Total Dissolved Solids in aqueous matrices	2381709, 2381711, 2381787
SM 2540 D-2015	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2381709, 2381711, 2381787
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2381709, 2381711, 2381787
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2381710, 2381712, 2381788

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	01/19/2023			01/19/2023 13:52	Alexis Price	2381709, 2381711
	01/19/2023			01/19/2023 13:53	Alexis Price	2381787
EPA 180.1 Rev. 2.0	01/19/2023			01/19/2023 13:17	Chandler E Cox	2381709, 2381711
	01/19/2023			01/19/2023 13:18	Chandler E Cox	2381787
EPA 200.7 Rev. 4.4	01/19/2023	01/23/2023 11:20	Vijayalakshmi Reddy	01/24/2023 16:47	McKinley C Carter	2381754
	01/19/2023	01/24/2023 11:10	Vijayalakshmi Reddy	01/28/2023 00:40	McKinley C Carter	2381791
	01/19/2023	01/24/2023 11:10	Vijayalakshmi Reddy	01/30/2023 17:36	McKinley C Carter	2381791
EPA 200.8 Rev. 5.4	01/19/2023	01/23/2023 11:20	Vijayalakshmi Reddy	01/24/2023 00:29	Emily M Philpot	2381754
	01/19/2023	01/24/2023 11:10	Vijayalakshmi Reddy	01/30/2023 20:19	Emily M Philpot	2381791
	01/19/2023	01/24/2023 11:10	Vijayalakshmi Reddy	01/31/2023 19:25	Emily M Philpot	2381791
	01/19/2023			01/24/2023 21:23	Anna M. Plaviak	2381709
EPA 300.0 Rev. 2.1	01/19/2023			01/24/2023 21:38	Anna M. Plaviak	2381711
	01/19/2023			01/24/2023 21:53	Anna M. Plaviak	2381787
	01/19/2023			01/27/2023 14:30	Anna M. Plaviak	2381787
	01/19/2023			01/31/2023 10:56	Judith K. Clark	2381710
	01/19/2023			01/31/2023 11:00	Judith K. Clark	2381712
EPA 350.1 Rev. 2.0	01/19/2023			01/31/2023 11:03	Judith K. Clark	2381788
	01/19/2023	01/31/2023 12:30	Simonne.V. Calhoun	02/01/2023 13:18	Judith K. Clark	2381710
	01/19/2023	01/31/2023 12:30	Simonne.V. Calhoun	02/01/2023 16:47	Samantha L Bates	2381788
	01/19/2023	01/31/2023 12:30	Simonne.V. Calhoun	02/03/2023 14:30	Samantha L Bates	2381712
EPA 353.2 Rev. 2.0	01/19/2023			01/26/2023 10:50	Beverly Y. Sanders	2381788
	01/19/2023			01/26/2023 11:23	Beverly Y. Sanders	2381710
	01/19/2023			01/26/2023 11:25	Beverly Y. Sanders	2381712
EPA 365.1 Rev. 2.0	01/19/2023	01/25/2023 13:55	Adam P Silver	01/26/2023 13:42	James L Waggeberby	2381710
	01/19/2023	01/25/2023 13:55	Adam P Silver	01/26/2023 13:44	James L Waggeberby	2381712
	01/19/2023	01/25/2023 13:55	Adam P Silver	01/26/2023 13:54	James L Waggeberby	2381788
EPA 8270E	01/19/2023	01/23/2023 08:30	Rasheda Ghaffari	01/28/2023 20:51	Julie Wi	2381752
	01/19/2023	01/23/2023 08:30	Rasheda Ghaffari	01/28/2023 22:48	Julie Wi	2381753
	01/19/2023	01/26/2023 11:00	Rasheda Ghaffari	01/27/2023 21:09	Vandana T. Nagar	2381752
	01/19/2023	01/26/2023 11:00	Rasheda Ghaffari	01/27/2023 21:39	Vandana T. Nagar	2381753
EPA 8276	01/19/2023	01/23/2023 08:30	Rasheda Ghaffari	01/25/2023 07:20	Lipi Saha	2381752
	01/19/2023	01/23/2023 08:30	Rasheda Ghaffari	01/25/2023 08:15	Lipi Saha	2381753
SM 2320 B-2011	01/19/2023			01/28/2023 06:05	Dale L. Simmons	2381709
	01/19/2023			01/28/2023 06:15	Dale L. Simmons	2381711
	01/19/2023			01/28/2023 06:25	Dale L. Simmons	2381787
SM 2340 B-2011	01/19/2023			01/28/2023 00:40	McKinley C Carter	2381791
SM 2540 C-2015	01/19/2023			01/23/2023 16:20	Yijie Li	2381709, 2381711, 2381787
SM 2540 D-2015	01/19/2023			01/23/2023 16:20	Yijie Li	2381709, 2381711, 2381787
SM 4500-F- C-2011	01/19/2023			01/28/2023 06:05	Dale L. Simmons	2381709
	01/19/2023			01/28/2023 06:15	Dale L. Simmons	2381711

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 4500-F- C-2011	01/19/2023			01/28/2023 06:25	Dale L. Simmons	2381787
SM 5310 B-2011	01/19/2023			01/26/2023 21:38	Khloe J Berg	2381710
	01/19/2023			01/26/2023 21:51	Khloe J Berg	2381712
	01/19/2023			01/26/2023 22:36	Khloe J Berg	2381788