Stoller

established 1959

Task Order LM00-502
Control Number 11-0941

August 18, 2011

Mr. Steve Roberts
Ohio EPA
8955 East Main Street
Reynoldsburg, OH 43068

Dear Mr. Roberts:

DMR-QA STUDY 31 RESULTS – FERNALD PRESERVE – NPDES PERMIT NO. OH0009580

Enclosed are copies of the NPDES Permittee Data Report Forms and a copy of the Chemistry/Microbiology and Wet Checklists for each laboratory used by the Fernald Preserve.

Please contact Mary Sizemore at (513) 648-3166 if you have any questions.

Sincerely,

Bill Hertel
Fernald Preserve Site Manager

BH/MES:dsm

Enclosures

cc: with enclosure:
(electronic)
Steve Donivan, Stoller
K. Gunter, USEPA – Region V
Mary Sizemore, Stoller
Karen Voisard, Stoller
Chuck White, Stoller
AR Coordinator (Thru W. Sumner)
rc-fernald

cc: without enclosure
(electronic)
Jane Powell, DOE

GEL Lab

Permittee name Fernald Preserve State OH NPDES Permit No. 0009580 EPA Lab Code SC00012

Chemistry/Microbiology Analyte Checklist

DMR-QA Study 31

Analyte Test	Test Required	Laboratory's Graded Result: Acceptable	Laboratory's Graded Result: Not Acceptable (Corrective Action Required)	Analyte determined by state-certified laboratory*
Microbiology				
E. coli	☐	☐	☐	☐
Fecal Coliform, MF or MPN	☐	☐	☐	☐
Total Coliform, MF or MPN	☐	☐	☐	☐
Trace Metals				
Aluminum	☐	☐	☐	☐
Antimony	☐	☐	☐	☐
Arsenic	☐	☐	☐	☐
Barium	☐	☐	☐	☐
Beryllium	☐	☐	☐	☐
Cadmium	☐	☐	☐	☐
Chromium, total	☐	☐	☐	☐
Chromium, hexavalent	☐	☐	☐	☐
Cobalt	☐	☐	☐	☐
Copper	☐	☐	☐	☐
Iron	☐	☐	☐	☐
Lead	☐	☐	☐	☐
Manganese	☒	☐	☐	☐
Mercury	☒	☐	☐	☐
Mercury (Low Level)	☒	☐	☐	☐
Molybdenum	☐	☐	☐	☐
Nickel	☐	☐	☐	☐
Selenium	☐	☐	☐	☐
Silver	☐	☐	☐	☐
Thallium	☐	☐	☐	☐
Vanadium	☐	☐	☐	☐
Zinc	☐	☐	☐	☐
Demands				
5-day BOD	☐	☐	☐	☐
5-day Carbonaceous BOD	☒	☐	☐	☐
COD	☐	☐	☐	☐
TOC	☐	☐	☐	☐
Minerals				
Alkalinity, total ($CaCO_3$)	☐	☐	☐	☐
Chloride	☐	☐	☐	☐
Fluoride	☐	☐	☐	☐
Hardness, total ($CaCO_3$)	☐	☐	☐	☐
Specific conductance (25°C)	☐	☐	☐	☐
Sulfate	☐	☐	☐	☐
Total Dissolved Solids (180°C)	☐	☐	☐	☐
Nutrients				
Ammonia as N	☐	☐	☐	☐
Nitrate as N	☐	☐	☐	☐
Nitrite as N	☐	☐	☐	☐
Orthophosphate as P	☐	☐	☐	☐
Total Kjeldahl-Nitrogen as N	☐	☐	☐	☐
Total Phosphorus as P	☐	☐	☐	☐
Misc. Analytes				
Non-Filterable Residue (TSS)	☒	☐	☐	☐
Oil and Grease	☒	☐	☐	☐
pH	☐	☐	☐	☐
Total Cyanide	☒	☐	☐	☐
Total Phenolics (4-AAP)	☐	☐	☐	☐
Total Residual Chlorine	☐	☐	☐	☐
Total Residual Chlorine (Low Level)	☐	☐	☐	☐
Settleable Solids	☐	☐	☐	☐
Turbidity	☐	☐	☐	☐

Signature Mary Ligenne Date 3-14-2011

*See Footnote 2 on DMR-QA Study 31 Fact Sheet

Use a separate checklist for EACH lab used

Permittee name _____ State _____ NPDES Permit No. _____ EPA Lab Code _____

WET Organisms/Test Conditions/End Points Checklist

DMR-QA Study 31

Analyte Number	Organisms / Conditions	End Points	Test Required	Laboratory's Graded Result		Analyte determined by state-certified laboratory*
				Acceptable	Not Acceptable (Corrective Action Required)	
Test Code 13/EPA Method 2000						
754	Fathead minnow (*Pimephales promelas*) - MHSF 25°C	LC50	☐	☐	☐	☐
Test Code 14/EPA Method 2000						
755	Fathead minnow (*Pimephales promelas*) - 20% DMW	LC50	☐	☐	☐	☐
Test Code 15/EPA Method 1000						
756	Fathead minnow (*Pimephales promelas*) - MHSF	NOEC SURVIVAL	☐	☐	☐	☐
808	Fathead minnow (*Pimephales promelas*) - MHSF	IC25 (ON) GROWTH	☐	☐	☐	☐
810	Fathead minnow (*Pimephales promelas*) - MHSF	NOEC (ON) GROWTH	☐	☐	☐	☐
Test Code 16/EPA Method 1000						
759	Fathead minnow (*Pimephales promelas*) - 20% DMW	NOEC SURVIVAL	☐	☐	☐	☐
812	Fathead minnow (*Pimephales promelas*) - 20% DMW	IC25 (ON) GROWTH	☐	☐	☐	☐
814	Fathead minnow (*Pimephales promelas*) - 20% DMW	NOEC (ON) GROWTH	☐	☐	☐	☐
Test Code 19/EPA Method 2002						
764	*Ceriodaphnia dubia* - MHSF 25°C	LC50	☐	☐	☐	☐
Test Code 20/EPA Method 2002						
765	*Ceriodaphnia dubia* - 20% DMW 25°C	LC50	☐	☐	☐	☐
Test Code 21/EPA Method 1002						
766	*Ceriodaphnia dubia* - MHSF	NOEC SURVIVAL	☐	☐	☐	☐
767	*Ceriodaphnia dubia* - MHSF	IC25 REPRODUCTION	☐	☐	☐	☐
768	*Ceriodaphnia dubia* - MHSF	NOEC REPRODUCTION	☐	☐	☐	☐
Test Code 22/EPA Method 1002						
769	*Ceriodaphnia dubia* - 20% DMW	NOEC SURVIVAL	☐	☐	☐	☐
770	*Ceriodaphnia dubia* - 20% DMW	IC25 REPRODUCTION	☐	☐	☐	☐
771	*Ceriodaphnia dubia* - 20% DMW	NOEC REPRODUCTION	☐	☐	☐	☐
Test Code 32/EPA Method 2021						
788	*Daphnia magna* - MHSF 25°C	LC50	☐	☐	☐	☐
Test Code 38/EPA Method 2021						
794	*Daphnia pulex* - MHSF 25°C	LC50	☐	☐	☐	☐
Test Code 42/EPA Method 2007						
798	Mysid (*Mysidopsis bahia*) 25°C	LC50	☐	☐	☐	☐
Test Code 43/EPA Method 1007						
799	Mysid (*Mysidopsis bahia*)	NOEC SURVIVAL	☐	☐	☐	☐
816	Mysid (*Mysidopsis bahia*)	IC25 (ON) GROWTH	☐	☐	☐	☐
818	Mysid (*Mysidopsis bahia*)	NOEC (ON) GROWTH	☐	☐	☐	☐
Test Code 44/EPA Method 2006						
803	Inland silverside (*Menidia beryllina*) 25°C	LC50	☐	☐	☐	☐
Test Code 45/EPA Method 1006						
824	Inland silverside (*Menidia beryllina*)	NOEC SURVIVAL	☐	☐	☐	☐
825	Inland silverside (*Menidia beryllina*)	IC25 (ON) GROWTH	☐	☐	☐	☐
826	Inland silverside (*Menidia beryllina*)	NOEC (ON) GROWTH	☐	☐	☐	☐
Test Code 46/EPA Method 2004						
804	Sheepshead minnow (*Cyprinodon variegatus*) 25°C	LC50	☐	☐	☐	☐
Test Code 47/EPA Method 1004						
805	Sheepshead minnow (*Cyprinodon variegatus*)	NOEC SURVIVAL	☐	☐	☐	☐
820	Sheepshead minnow (*Cyprinodon variegatus*)	IC25 (ON) GROWTH	☐	☐	☐	☐
822	Sheepshead minnow (*Cyprinodon variegatus*)	NOEC (ON) GROWTH	☐	☐	☐	☐

Name Mary Sizemore Signature Mary Sizemore Date 3-14-2011

*See Footnote 2 on DMR-QA Study 31 Fact Sheet

Use a separate checklist for EACH lab used

ERA

A Waters Company

Permittee Name: SM Stoller **Permit Number:** OH0009580 **EPA Lab Code:** SC00012

Chemistry/Microbiology Analyte Checklist

DMRQA Study 31

Analyte Test / Method	Test Required	Laboratory's Graded Result	
		Acceptable	Not Acceptable (Corrective Action Required)
Minerals Alkalinity as CaCO3 Chloride Conductivity at 25°C Fluoride Potassium Sodium Sulfate Total Dissolved Solids at 180°C Total Solids at 105°C			
Hardness Non-Filterable Residue (TSS) SM2540D Calcium Magnesium Calcium Hardness as CaCO3 Total Hardness as CaCO3	☐	☒	☐
pH pH			
Settleable Solids Settleable Solids			
Solids Concentrate Non-Filterable Residue (TSS) Total Dissolved Solids at 180°C Total Solids at 105°C			
Solids Non-Filterable Residue (TSS) Total Dissolved Solids at 180°C Total Solids at 105°C			
Simple Nutrients Ammonia as N Nitrate + Nitrite as N Nitrate as N ortho-Phosphate as P			
Complex Nutrients Total Kjeldahl Nitrogen Total phosphorus as P			
Nitrite Nitrite as N			

ERA

A Waters Company

Permittee Name: SM Stoller **Permit Number:** OH0009580 **EPA Lab Code:** SC00012

Chemistry/Microbiology Analyte Checklist

DMRQA Study 31

Analyte Test / Method	Test Required	Laboratory's Graded Result	
		Acceptable	Not Acceptable (Corrective Action Required)
Demand			
BOD			
CBOD			
SM5210B	☐	☒	☐
COD			
TOC			
Oil & Grease Concentrate			
Oil & Grease (Gravimetric)			
Oil & Grease			
Oil & Grease (Gravimetric)			
EPA 1664A	☐	☒	☐
Oil & Grease (Infrared)			
Trace Metals			
Aluminum			
Antimony			
Arsenic			
Barium			
Beryllium			
Boron			
Cadmium			
Chromium			
Cobalt			
Copper			
Iron			
Lead			
Manganese			
EPA 200.7	☐	☒	☐
EPA 200.8	☐	☒	☐
Molybdenum			
Nickel			
Selenium			
Silver			
Strontium			
Thallium			
Vanadium			
Zinc			
Mercury			
Mercury			
EPA 1631E	☐	☒	☐
EPA 245.2	☐	☒	☐
Low-Level Mercury			
Low Level Mercury			
Hexavalent Chromium			
Hexavalent Chromium			

ERA

A Waters Company

Permittee Name: SM Stoller **Permit Number:** OH0009580 **EPA Lab Code:** SC00012

Chemistry/Microbiology Analyte Checklist

DMRQA Study 31

Analyte Test / Method	Test Required	Laboratory's Graded Result	
		Acceptable	Not Acceptable (Corrective Action Required)
Turbidity			
Turbidity			
Total Cyanide			
Cyanide, total			
EPA 335.3	☐	☒	☐
EPA 335.4	☐	☒	☐
SM4500CN C	☐	☒	☐
Total Phenolics (4-AAP)			
Phenolics, total			
Total Residual Chlorine			
Total Residual Chlorine			
Low-Level Total Residual Chlorine			
Low Level Total Residual Chlorine			
WasteWatR™ Coliform MicrobE™			
Total Coliforms (MF)			
Fecal Coliforms (MF)			
E.coli (MF)			
Total Coliforms (MPN)			
Fecal Coliforms (MPN)			
E.coli (MPN)			

Print Name

Date

Signature/Title

Use a separate checklist for EACH lab used

ERA

A Waters Company

Study: **DMRQA-31**

NPDES Permit #: **OH0009580**

Laboratory Name: **SM Stoller**

Inorganic Results

ERA
A Waters Company

DMRQA-31 Final Complete Report

NPDES Permit #: OH0009580
Permit Holder: Frank Johnston
Site Manager
SM Stoller
7400 Willey Road
Harrison, OH 45030
513-648-5294

ERA Customer Number: W210001
Report Issued: 07/22/11
Study Dates: 03/14/11 - 07/01/11

Analyte	Performance Evaluation	Reported Value	Assigned Value	Acceptance Limits	Units	Method Description	USEPA Lab Code	Study
Hardness								
Non-Filterable Residue (TSS)	Acceptable	44.5	46.2	35.4 - 53.2	mg/L	SM2540D	SC00012	DMRQA31
Demand								
CBOD	Acceptable	50.0	64.8	29.1 - 100	mg/L	SM5210B	SC00012	DMRQA31
Oil & Grease								
Oil & Grease (Gravimetric)	Acceptable	42.9	44.0	27.5 - 54.4	mg/L	EPA 1664A	SC00012	DMRQA31
Trace Metals								
Manganese	Acceptable	691	691	620 - 768	µg/L	EPA 200.7	SC00012	DMRQA31
Manganese	Acceptable	652	691	620 - 768	µg/L	EPA 200.8	SC00012	DMRQA31
Mercury								
Mercury	Acceptable	5.83	6.29	3.88 - 8.61	µg/L	EPA 1631E	SC00012	DMRQA31
Mercury	Acceptable	6.43	6.29	3.88 - 8.61	µg/L	EPA 245.2	SC00012	DMRQA31
Total Cyanide								
Cyanide, total	Acceptable	0.318	0.480	0.279 - 0.685	mg/L	SM4500CN C	SC00012	DMRQA31
Cyanide, total	Acceptable	0.318	0.480	0.279 - 0.685	mg/L	EPA 335.3	SC00012	DMRQA31
Cyanide, total	Acceptable	0.318	0.480	0.279 - 0.685	mg/L	EPA 335.4	SC00012	DMRQA31

ACCREDITED Lab Code: 1539-01

All analytes are included in ERA's A2LA accreditation. Lab Code: 1539-01

Permittee name Fernald Preserve State OH NPDES Permit No. 0009580 EPA Lab Code OH01006

Chemistry/Microbiology Analyte Checklist

DMR-QA Study 31

Analyte Test	Test Required	Laboratory's Graded Result		Analyte determined by state-certified laboratory*
		Acceptable	Not Acceptable (Corrective Action Required)	
Microbiology				
E. coli.	☐	☐	☐	☐
Fecal Coliform, MF or MPN	☐	☐	☐	☐
Total Coliform, MF or MPN	☐	☐	☐	☐
Trace Metals				
Aluminum	☐	☐	☐	☐
Antimony	☐	☐	☐	☐
Arsenic	☐	☐	☐	☐
Barium	☐	☐	☐	☐
Beryllium	☐	☐	☐	☐
Cadmium	☐	☐	☐	☐
Chromium, total	☐	☐	☐	☐
Chromium, hexavalent	☐	☐	☐	☐
Cobalt	☐	☐	☐	☐
Copper	☐	☐	☐	☐
Iron	☐	☐	☐	☐
Lead	☐	☐	☐	☐
Manganese	☐	☐	☐	☐
Mercury	☐	☐	☐	☐
Mercury (Low Level)	☐	☐	☐	☐
Molybdenum	☐	☐	☐	☐
Nickel	☐	☐	☐	☐
Selenium	☐	☐	☐	☐
Silver	☐	☐	☐	☐
Thallium	☐	☐	☐	☐
Vanadium	☐	☐	☐	☐
Zinc	☐	☐	☐	☐
Demands				
5-day BOD	☐	☐	☐	☐
5-day Carbonaceous BOD	☒	☐	☐	☐
COD	☐	☐	☐	☐
TOC	☐	☐	☐	☐
Minerals				
Alkalinity, total ($CaCO_3$)	☐	☐	☐	☐
Chloride	☐	☐	☐	☐
Fluoride	☒	☐	☐	☐
Hardness, total ($CaCO_3$)	☒	☐	☐	☐
Specific conductance (25°C)	☐	☐	☐	☐
Sulfate	☐	☐	☐	☐
Total Dissolved Solids (180°C)	☐	☐	☐	☐
Nutrients				
Ammonia as N	☐	☐	☐	☐
Nitrate as N	☐	☐	☐	☐
Nitrite as N	☐	☐	☐	☐
Orthophosphate as P	☒	☐	☐	☐
Total Kjeldahl-Nitrogen as N	☐	☐	☐	☐
Total Phosphorus as P	☐	☐	☐	☐
Misc. Analytes				
Non-Filterable Residue (TSS)	☒	☐	☐	☐
Oil and Grease	☐	☐	☐	☐
pH	☒	☐	☐	☐
Total Cyanide	☐	☐	☐	☐
Total Phenolics (4-AAP)	☐	☐	☐	☐
Total Residual Chlorine	☐	☐	☐	☐
Total Residual Chlorine (Low Level)	☐	☐	☐	☐
Settleable Solids	☐	☐	☐	☐
Turbidity	☐	☐	☐	☐

Signature Mary Zeimer Date 3-8-2011

*See Footnote 2 on DMR-QA Study 31 Fact Sheet

Use a separate checklist for EACH lab used

United States
ENVIRONMENTAL PROTECTION AGENCY
Washington, DC 20460
Laboratory DMR-QA Evaluation Study 31
Laboratory Performance Evaluation
Office of Enforcement and Compliance Assurance
(These data are collected under the authority of the Federal Water Pollution Control Act.)

Permittee name	State	NPDES Permit No.	Permit Extension
U.S. Dept. of Energy, Fernald Preserve	OH	0009580	———

Identification of all CHEM, MICRO and WET laboratories who did analyses for this permit

Name of Laboratory	Address of Laboratory	U.S. EPA Lab Code	Lab Analysis Check box(es) that apply			Lab Type*	State-certified Laboratory**
			Chem	Micro	WET		
General Electronics Laboratories, LLC	2040 Savage Rd. Charlestown, S.C. 29407	SC00012	☒	☐	☐	C	☐
Fernald Preserve Lab	10995 Hamilton-Cleves Hwy. Harrison, OH 45030	OH01006	☒	☒	☐	O	☐
			☐	☐	☐		☐
			☐	☐	☐		☐
			☐	☐	☐		☐
			☐	☐	☐		☐

* Lab Types: C = Commercial F = Federal G = Local Government I = Industrial O = Other S = State
** See Footnote 2 on DMR-QA Study 31 Fact Sheet

If you need additional space, please make a copy of this page for additional laboratories.

Permittee name Fernald Preserve State OH NPDES Permit No 0009850 EPA Lab Code OH01006

WET Organisms/Test Conditions/End Points Checklist

DMR-QA Study 31

Analyte Number	Organisms / Conditions	End Points	Test Required	Laboratory's Graded Result		Analyte determined by state-certified laboratory*
				Acceptable	Not Acceptable (Corrective Action Required)	
Test Code 13/EPA Method 2000						
754	Fathead minnow (*Pimephales promelas*) - MHSF 25°C	LC50	☐	☐	☐	☐
Test Code 14/EPA Method 2000						
755	Fathead minnow (*Pimephales promelas*) - 20% DMW	LC50	☐	☐	☐	☐
Test Code 15/EPA Method 1000						
756	Fathead minnow (*Pimephales promelas*) - MHSF	NOEC SURVIVAL	☐	☐	☐	☐
308	Fathead minnow (*Pimephales promelas*) - MHSF	IC25 (ON) GROWTH	☐	☐	☐	☐
310	Fathead minnow (*Pimephales promelas*) - MHSF	NOEC (ON) GROWTH	☐	☐	☐	☐
Test Code 16/EPA Method 1000						
759	Fathead minnow (*Pimephales promelas*) - 20% DMW	NOEC SURVIVAL	☐	☐	☐	☐
312	Fathead minnow (*Pimephales promelas*) - 20% DMW	IC25 (ON) GROWTH	☐	☐	☐	☐
314	Fathead minnow (*Pimephales promelas*) - 20% DMW	NOEC (ON) GROWTH	☐	☐	☐	☐
Test Code 19/EPA Method 2002						
764	*Ceriodaphnia dubia* - MHSF 25°C	LC50	☐	☐	☐	☐
Test Code 20/EPA Method 2002						
765	*Ceriodaphnia dubia* - 20% DMW 25°C	LC50	☐	☐	☐	☐
Test Code 21/EPA Method 1002						
766	*Ceriodaphnia dubia* - MHSF	NOEC SURVIVAL	☐	☐	☐	☐
767	*Ceriodaphnia dubia* - MHSF	IC25 REPRODUCTION	☐	☐	☐	☐
768	*Ceriodaphnia dubia* - MHSF	NOEC REPRODUCTION	☐	☐	☐	☐
Test Code 22/EPA Method 1002						
769	*Ceriodaphnia dubia* - 20% DMW	NOEC SURVIVAL	☐	☐	☐	☐
770	*Ceriodaphnia dubia* - 20% DMW	IC25 REPRODUCTION	☐	☐	☐	☐
771	*Ceriodaphnia dubia* - 20% DMW	NOEC REPRODUCTION	☐	☐	☐	☐
Test Code 32/EPA Method 2021						
788	*Daphnia magna* - MHSF 25°C	LC50	☐	☐	☐	☐
Test Code 38/EPA Method 2021						
794	*Daphnia pulex* - MHSF 25°C	LC50	☐	☐	☐	☐
Test Code 42/EPA Method 2007						
798	Mysid (*Mysidopsis bahia*) 25°C	LC50	☐	☐	☐	☐
Test Code 43/EPA Method 1007						
799	Mysid (*Mysidopsis bahia*)	NOEC SURVIVAL	☐	☐	☐	☐
316	Mysid (*Mysidopsis bahia*)	IC25 (ON) GROWTH	☐	☐	☐	☐
318	Mysid (*Mysidopsis bahia*)	NOEC (ON) GROWTH	☐	☐	☐	☐
Test Code 44/EPA Method 2006						
303	Inland silverside (*Menidia berylina*) 25°C	LC50	☐	☐	☐	☐
Test Code 45/EPA Method 1006						
324	Inland silverside (*Menidia berylina*)	NOEC SURVIVAL	☐	☐	☐	☐
325	Inland silverside (*Menidia berylina*)	IC25 (ON) GROWTH	☐	☐	☐	☐
326	Inland silverside (*Menidia berylina*)	NOEC (ON) GROWTH	☐	☐	☐	☐
Test Code 46/EPA Method 2004						
304	Sheepshead minnow (*Cyprinodon variegatus*) 25°C	LC50	☐	☐	☐	☐
Test Code 47/EPA Method 1004						
305	Sheepshead minnow (*Cyprinodon variegatus*)	NOEC SURVIVAL	☐	☐	☐	☐
320	Sheepshead minnow (*Cyprinodon variegatus*)	IC25 (ON) GROWTH	☐	☐	☐	☐
322	Sheepshead minnow (*Cyprinodon variegatus*)	NOEC (ON) GROWTH	☐	☐	☐	☐

Name Mary Sizemore Signature MARY SIZEMORE Date 3-8-2011

*See Footnote 2 on DMR-QA Study 31 Fact Sheet

Use a separate checklist for EACH lab used

ERA
A Waters Company

SM Stoller
Final Limits
For Study DMR-QA 31

LABORATORY INFORMATION

SM Stoller 10995 Hamilton-Cleves Hwy Harrison, OH 45030	**Customer ID:** S991968 **Fax:** **Email:** cathy.glassmeyer@lm.doe.gov **Phone:** (513) 648-5927	**USEPA ID:** **Contact:** Kathy Leslie **Contact Title:** **Approval Date:** 6/14/2011

REGULATORY AGENCY INFORMATION

There are no agencies listed to receive reports.

THIRD PARTY INFORMATION

There are no third parties listed to receive reports.

Study
Exception Report

All reported values were evaluated as 'Acceptable'.

Study DMR-QA 31
Complete Final Report

Minerals (cat# 581)

Analyte	Units	Reported Value	Assigned Value	Acceptance Limits	Performance Evaluation	Method Description
Alkalinity as CaCO3	mg/L		104	92.4 - 114	Not Reported	
Chloride	mg/L		58.8	50.1 - 68.0	Not Reported	
Conductivity at 25°C	µmhos/cm		479	431 - 528	Not Reported	
Fluoride	mg/L	3.16	3.18	2.66 - 3.71	Acceptable	
Potassium	mg/L		34.9	28.9 - 41.5	Not Reported	
Sodium	mg/L		83.8	71.1 - 96.0	Not Reported	
Sulfate	mg/L		34.9	28.1 - 40.8	Not Reported	
Total Dissolved Solids at 180°C	mg/L		380	289 - 471	Not Reported	
Total Solids at 105°C	mg/L		405	360 - 446	Not Reported	

Hardness (cat# 580)

Analyte	Units	Reported Value	Assigned Value	Acceptance Limits	Performance Evaluation	Method Description
Non-Filterable Residue (TSS)	mg/L		46.2	35.4 - 53.2	Not Reported	
Calcium	mg/L		29.7	26.3 - 33.9	Not Reported	
Magnesium	mg/L		12.1	10.3 - 13.9	Not Reported	
Calcium Hardness as CaCO3	mg/L		74.2	65.8 - 84.6	Not Reported	
Total Hardness as CaCO3	mg/L	126.8	124	106 - 142	Acceptable	

pH (cat# 577)

Analyte	Units	Reported Value	Assigned Value	Acceptance Limits	Performance Evaluation	Method Description
pH	S.U.	7.63	7.65	7.45 - 7.85	Acceptable	

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Solids Concentrate (cat# 4030)

Analyte	Units	Reported Value	Assigned Value	Acceptance Limits	Performance Evaluation	Method Description
Non-Filterable Residue (TSS)	mg/L	58.2	59.3	47.0 - 67.1	Acceptable	
Total Dissolved Solids at 180°C	mg/L	499.3	498	382 - 613	Acceptable	
Total Solids at 105°C	mg/L	557.5	561	505 - 617	Acceptable	

Complex Nutrients (cat# 579)

Analyte	Units	Reported Value	Assigned Value	Acceptance Limits	Performance Evaluation	Method Description
Total Kjeldahl Nitrogen	mg/L		19.3	12.7 - 24.9	Not Reported	
Total phosphorus as P	mg/L	6.80	6.65	5.48 - 7.88	Acceptable	

Demand (cat# 578)

Analyte	Units	Reported Value	Assigned Value	Acceptance Limits	Performance Evaluation	Method Description
BOD	mg/L		75.3	38.0 - 113	Not Reported	
CBOD	mg/L	69.1	64.8	29.1 - 100	Acceptable	
COD	mg/L		122	92.0 - 141	Not Reported	
TOC	mg/L		48.1	40.1 - 55.5	Not Reported	