United States Environmental Protection Agency
Office of Environmental Measurement & Evaluation
11 Technology Drive
North Chelmsford, MA 01863-2431

Laboratory Results

July 10, 2017

Danielle Gaito - Mail Code OEP06-4
Evan Lewis - Mail Code OEP06-1
US EPA New England R1

Project No: 17060015
Project: Merrymeeting River - Durham, NH
Analysis: Total Phosphorus in Water as P
EPA Chemist: Bhavita Patel

Date Samples Received by the Laboratory: 06/14/2017

Analytical Procedure:

All samples were received and logged in by the laboratory according to the USEPA New England Laboratory SOP for Sample Log-in.

Sample preparation and analysis was done following the EPA Region I SOP, EIASOP-INGTP11.

The SOP is based on the Lachat Method 10-115-01-1-F and EPA method 365.1 "Determination of Phosphorous by Semi-Automated Colorimetry", Revision 2.0, August 1993 .

The method used for digestion of soil samples was developed at NERL.

Samples were analyzed on a Lachat Automated Ion Analyzer.

Results relate only to the items tested or to the samples as received by the Laboratory. This analytical report shall not be reproduced except in full, without written approval of the laboratory.

Data were reviewed in accordance with the internal verification procedures described in the EPA New England Quality Manual for NERL.

If you have any questions please call me at 617-918-8340.

Sincerely,

Digitally signed by Dan Boudreau
DN: cn=Dan Boudreau, o=EPA, ou=EIA, email=boudreau.dan@epa.gov, c=US
Date: 2017.07.10 13:50:52 -04'00'

17060015TP

Qualifiers:

RL = Reporting limit
ND = Not Detected above Reporting limit
NA = Not Applicable due to high sample dilutions or sample interferences
NC = Not calculated since analyte concentration is ND.
J = Estimated value
J1 = Estimated value due to MS recovery outside accceptance criteria
J2 = Estimated value due to LFB result outside acceptance criteria
J3 = Estimated value due to RPD result outside acceptance criteria
J4 = Estimated value due to LCS result outside acceptance criteria
E = Estimated value exceeds the calibration range
L = Estimated value is below the calibration range
B = Analyte is associated with the lab blank or trip blank contamination. Values are qualified when the observed concentration of the contamination in the sample extract is less than 10 times the concentration in the blank.
R = No recovery was calculated since the analyte concentration is greater than four times the spike level.
P = The confirmation value exceeded 35% difference and is less than 100%. The lower value is reported.
C = The identification has been confirmed by GC/MS.
A = Suspected Aldol condensation product.
N = Tentatively identified compound.

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Merrymeeting River - Durham, NH

Total Phosphorus in Water as P

Matrix: Water

Sample Number	Lab ID	Collected	Extracted	Analysis	Concentration ug/L	RL ug/L	Qualifier
MM1 Comments:	AB67580	06/14/2017 10:20	06/28/2017	06/29/2017	**6.9**	5	
PM01 Comments:	AB67581	06/14/2017 10:30	06/28/2017	06/29/2017	**36**	5	
PM02 Comments:	AB67582	06/14/2017 10:48	06/28/2017	06/29/2017	**32**	5	
MM2 Comments:	AB67583	06/14/2017 11:00	06/28/2017	06/29/2017	**22**	5	
MM3 Comments:	AB67584	06/14/2017 11:15	06/28/2017	06/29/2017	**22**	5	
DUP01 Comments:	AB67585	06/14/2017 0:00	06/28/2017	06/29/2017	**5.8**	5	
Blank Comments:			06/28/2017	06/29/2017	ND	5	

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Merrymeeting River - Durham, NH

MATRIX SPIKE (MS) Results

SAMPLE ID	PARAMETER	SPIKE ADDED ug/L	SAMPLE CONCENTRATION ug/L	MS CONCENTRATION ug/L	MS % REC	QC LIMITS (% REC)
AB67582	Total Phosphorus in Water as P	97.8	32	124	94.1	85 - 115

Comments:

MATRIX SPIKE DUPE (MSD) RESULTS

SAMPLE ID	PARAMETER	MSD SPIKE ADDED	MSD CONCENTRATION ug/L	MSD % REC	RPD %	QC LIMITS RPD
AB67582	Total Phosphorus in Water as P	97.8	127	97.1	2	20

Comments:

Laboratory Duplicate Results

SAMPLE ID	PARAMETER	SAMPLE RESULT ug/L	SAMPLE DUP RESULT ug/L	PRECISION RPD %	QC LIMITS (%RPD)
AB67582	Total Phosphorus in Water as P	32	34	6	20

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Merrymeeting River - Durham, NH

Laboratory Fortified Blank (LFB) Results

PARAMETER	LFB AMOUNT SPIKED ug/L	LFB RESULT ug/L	LFB RECOVERY %	QC LIMITS %
Total Phosphorus in Water as P	97.8	95.6	97.8	90 - 110

Samples in Batch: AB67580, AB67581, AB67582, AB67583, AB67584

ENVIRONMENTAL PROTECTION AGENCY

REGION 1

CHAIN OF CUSTODY RECORD

PROJ. NO.: 17060015

PROJECT NAME: Merrymeeting River

SAMPLERS: (Signature)

STA. NO.	DATE 17	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	TSS	Orthophosphate	Total Phosphorus	NH3 as N	Total Nitrogen	NO2+NO3		REMARKS
MM1	6/14	1020		✓		2	✓	✓	✓	✓	✓	✓		
PM01		1030		✓		2	✓	✓	✓	✓	✓	✓		
PM02		1048		✓		2	✓	✓	✓	✓	✓	✓		
MM2		1100		✓		2	✓	✓	✓	✓	✓	✓		
MM3		1115		✓		2	✓	✓	✓	✓	✓	✓		
DUP01	✓			✓		2	✓	✓	✓	✓	✓	✓		
						12								

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
	6/14/17 1300				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	
			6/14/17 13:08	TN, TP, NO2+NO3 Preserved w/ H2SO4 pH<2 ICE <6°C	

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

3°C

17060015 TSS
17060015 OPHOS
17060015 AMMO
17060015 TP
17060015 $TNL

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