

**From:** [Paul Leeper](#)  
**To:** [Maloney, Kelly](#)  
**Subject:** Fwd: Union River bug data  
**Date:** Thursday, April 16, 2020 2:47:03 PM  
**Attachments:** [pre-EDD Stream MI Field Union R 2019.xls](#)  
[Pre-EDD MI Taxonomist Union R 2019.xlsx](#)

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----- Forwarded Message -----

**Subject:** Union River bug data  
**Date:** Thu, 19 Dec 2019 13:49:10 -0500  
**From:** Paul Leeper <[moodymtn@tidewater.net](mailto:moodymtn@tidewater.net)>  
**To:** Meidel, Susanne K <[Susanne.K.Meidel@maine.gov](mailto:Susanne.K.Meidel@maine.gov)>  
**CC:** Dunlap, Frank <[Frank.Dunlap@brookfieldrenewable.com](mailto:Frank.Dunlap@brookfieldrenewable.com)>

Susanne,

Here are the files for one site downstream of the Graham Lake Dam.  
If you have any questions or I screwed something up please contact me.

Thanks as always,

Paul

--  
Paul C. Leeper  
Moody Mountain Env.  
137 Diamond Str.  
Searsmont, ME 04973



**Maine Department of Environmental Protection  
Biological Monitoring Program  
Aquatic Life Classification Attainment Report**

**Station Information**

<b>Station Number:</b> S-1051	River Basin:	Maine Coastal	
Waterbody:	Union River - Station 1051	HUC8 Name:	Maine Coastal
Town:	Ellsworth	Latitude:	44 35 22.72 N
Directions:	100 METERS BELOW THE DAM.	Longitude:	68 26 28.28 W
		Stream Order:	4

**Sample Information**

<b>Log Number:</b> 2785	Type of Sample:	ROCK BAG	Date Deployed:	8/9/2019	
Subsample Factor:	X1	Replicates:	3	Date Retrieved:	9/6/2019

**Classification Attainment**

<b>Statutory Class:</b> B	<b>Final Determination:</b> NA	Date:	1/21/2020
Model Result with P≥0.6:	NA	<b>Reason for Determination:</b>	Model
Date Last Calculated:	1/21/2020	Comments:	

**Model Probabilities**

<u>First Stage Model</u>		<u>C or Better Model</u>	
Class A	0.00	Class C	0.66
Class B	0.00	Class A, B, or C	0.20
		Non-Attainment	0.80
<u>B or Better Model</u>		<u>A Model</u>	
Class A or B	0.00	Class A	0.00
Class C or Non-Attainment	1.00	Class B or C or Non-Attainment	1.00

**Model Variables**

01 Total Mean Abundance	1182.00	18 Relative Abundance Ephemeroptera	0.01
02 Generic Richness	21.00	19 EPT Generic Richness	10.00
03 Plecoptera Mean Abundance	0.00	21 Sum of Abundances: <i>Dicrotendipes</i> , <i>Micropsectra</i> , <i>Parachironomus</i> , <i>Helobdella</i>	0.00
04 Ephemeroptera Mean Abundance	12.33	23 Relative Generic Richness- Plecoptera	0.00
05 Shannon-Wiener Generic Diversity	2.42	25 Sum of Abundances: <i>Cheumatopsyche</i> , <i>Cricotopus</i> , <i>Tanytarsus</i> , <i>Ablabesmyia</i>	532.16
06 Hilsenhoff Biotic Index	5.85	26 Sum of Abundances: <i>Acroneuria</i> , <i>Maccaffertium</i> , <i>Stenonema</i>	4.00
07 Relative Abundance - Chironomidae	0.05	28 EP Generic Richness/14	0.21
08 Relative Generic Richness Diptera	0.29	30 Presence of Class A Indicator Taxa/7	0.00
09 <i>Hydropsyche</i> Abundance	0.00		
11 <i>Cheumatopsyche</i> Abundance	500.83		
12 EPT Generic Richness/ Diptera Generic Richness	1.67		
13 Relative Abundance - Oligochaeta	0.00		
15 Perlidae Mean Abundance (Family Functional Group)	0.00		
16 Tanypodinae Mean Abundance (Family Functional Group)	4.00		
17 Chironomini Abundance (Family Functional Group)	3.00		

**Five Most Dominant Taxa**

Rank	Taxon Name	Percent
1	<i>Cheumatopsyche</i>	42.37
2	<i>Neureclipsis</i>	28.93
3	<i>Polycentropus</i>	9.95
4	Planariidae	5.75
5	<i>Oecetis</i>	2.88



**Maine Department of Environmental Protection  
Biological Monitoring Program  
Aquatic Life Classification Attainment Report**

<b>Station Number:</b> S-1051	Town: Ellsworth	Date Deployed: 8/9/2019
<b>Log Number:</b> 2785	Waterbody: Union River - Station 1051	Date Retrieved: 9/6/2019

**Sample Collection and Processing Information**

Sampling Organization: PAUL LEEPER (MOODY MOUNTAIN ENVIRONMENTAL)	Taxonomist: PAUL LEEPER (MOODY MOUNTAIN ENVIRONMENTAL)
---	--

**Waterbody Information - Deployment**

Temperature: 23.6 deg C  
 Dissolved Oxygen: 8.2 mg/l  
 Dissolved Oxygen Saturation:  
 Specific Conductance:  
 Velocity: 12 cm/s  
 pH:  
 Wetted Width:  
 Bankfull Width:  
 Depth:

**Waterbody Information - Retrieval**

**Water Chemistry**

**Summary of Habitat Characteristics**

<u>Landuse Name</u>	<u>Canopy Cover</u>	<u>Terrain</u>
Swamp Hardwood	Open	Rolling
Upland Hardwood		
<u>Potential Stressor</u>	<u>Location</u>	<u>Substrate</u>
Regulated Flows	Below Dam	Boulder 20 %
		Clay 10 %
		Gravel 10 %
		Rubble/Cobble 69 %

**Landcover Summary - 2004 Data**

**Sample Comments**

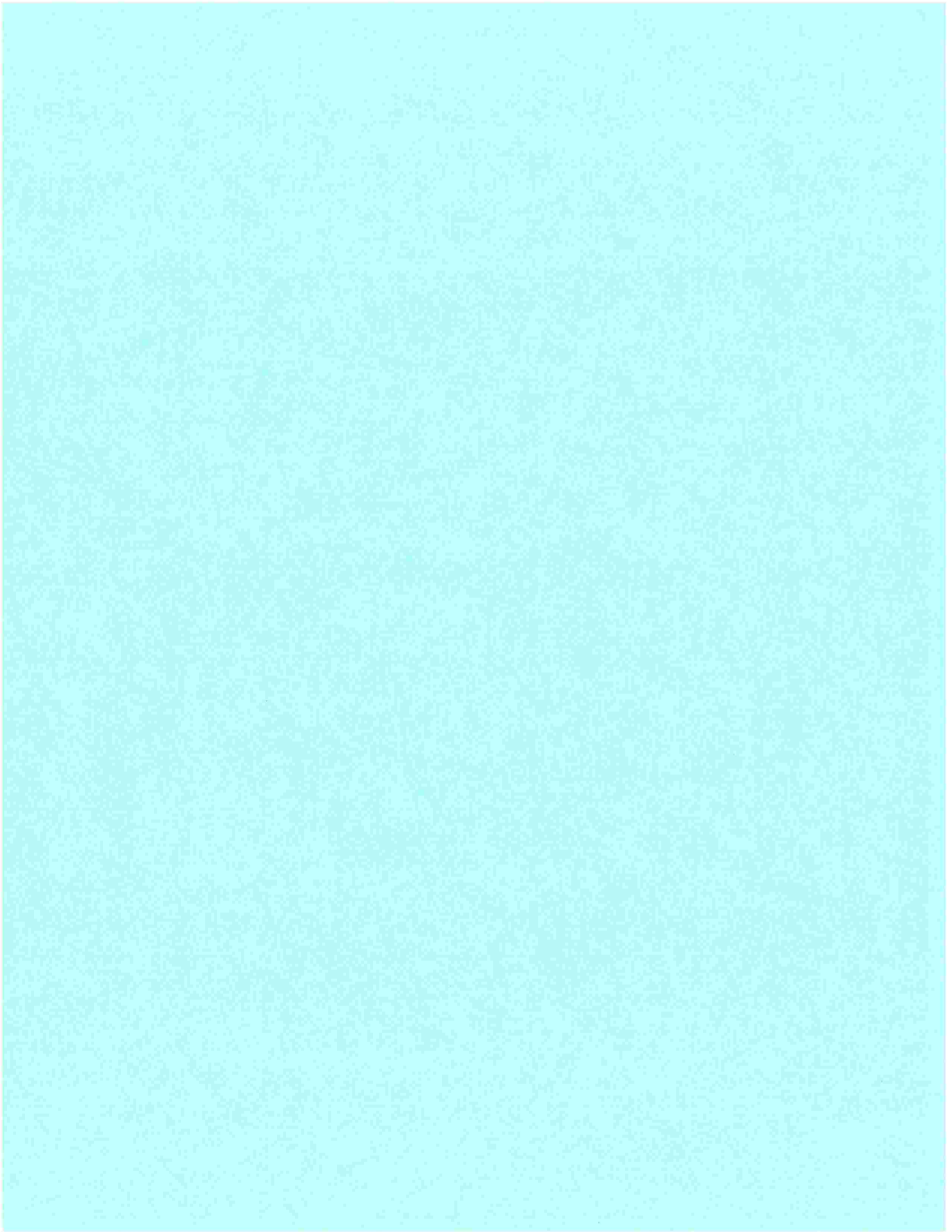
ATTACHED ALGAE



**Maine Department of Environmental Protection  
Biological Monitoring Program  
Aquatic Life Taxonomic Inventory Report**

Station Number: S-1051		Waterbody: Union River - Station 1051		Town: Ellsworth			
Log Number: 2785		Subsample Factor: X1		Replicates: 3		Calculated: 1/21/2020	
Taxon	Maine Taxonomic Code	Count (Mean of Samplers)		Hilsenhoff Biotic Index	Functional Feeding Group	Relative Abundance %	
		Actual	Adjusted			Actual	Adjusted
Planariidae	03010101	68.00	68.00		--	5.8	5.8
<i>Hyalella</i>	09010203006	6.67	6.67	8	CG	0.6	0.6
Odonata	090203	0.33	0.33		--	0.0	0.0
Heptageniidae	09020402	7.67	7.67		--	0.6	0.6
<i>Stenonema</i>	09020402016	4.00	4.00	4	SC	0.3	0.3
<i>Tricorythodes</i>	09020411038	0.67	0.67	4	CG	0.1	0.1
<i>Chimarra</i>	09020601003	18.33	18.33	2	CF	1.6	1.6
<i>Neureclipsis</i>	09020603008	342.00	342.00	7	CF	28.9	28.9
<i>Polycentropus</i>	09020603010	117.67	117.67	6	PR	10.0	10.0
Hydropsychidae	09020604	79.33			--	6.7	
<i>Cheumatopsyche</i>	09020604015	422.67	500.83	5	CF	35.8	42.4
<i>Macrostemum</i>	09020604018	6.33	7.50	3	CF	0.5	0.6
<i>Agraylea</i>	09020607024	0.33	0.33	8	P	0.0	0.0
<i>Oecetis</i>	09020618078	34.00	34.00	8	PR	2.9	2.9
<i>Thienemannimyia</i>	09021011020	4.00	4.00	3	PR	0.3	0.3
<i>Cricotopus</i>	09021011037	31.33	31.33	7	SH	2.7	2.7
<i>Eukiefferiella</i>	09021011041	6.33	6.33	8	CG	0.5	0.5
<i>Nanocladius</i>	09021011049	3.67	3.67	3	CG	0.3	0.3
<i>Rheotanytarsus</i>	09021011072	16.00	16.00	6	CF	1.4	1.4
<i>Polypedilum</i>	09021011102	3.00	3.00	6	SH	0.3	0.3
Hydrobiidae	10010104	9.33	9.33		--	0.8	0.8
<i>Gyraulus</i>	10010203029	0.33	0.33		SC	0.0	0.0





**From:** [Paul Leeper](#)  
**To:** [Maloney, Kelly](#)  
**Subject:** Fwd: Graham Lake bug data  
**Date:** Thursday, April 16, 2020 2:39:57 PM  
**Attachments:** [pre-EDD Stream MI Field Graham L CG-1 8-15-2019.xls](#)  
[pre-EDD Stream MI Field Graham L CG-2 8-15-2019.xls](#)  
[pre-EDD Stream MI Field Graham L S-1 8-15-2019.xls](#)  
[pre-EDD Stream MI Field Graham L S-2 8-15-2019.xls](#)  
[pre-EDD Stream MI Field Graham L W-1 8-15-2019.xls](#)  
[pre-EDD Stream MI Field Graham L W-2 8-15-2019.xls](#)  
[Pre-EDD MI Taxonomist Graham L CG-1 8-15-2019.xlsx](#)  
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[Pre-EDD MI Taxonomist Graham L CG-2 8-15-2019.xlsx](#)  
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[Pre-EDD MI Taxonomist Graham L S-2 8-15-2019.xlsx](#)  
[Pre-EDD MI Taxonomist Graham L S-2 9-19-2019.xlsx](#)  
[Pre-EDD MI Taxonomist Graham L W-1 8-15-2019.xlsx](#)  
[Pre-EDD MI Taxonomist Graham L W-1 9-19-2019.xlsx](#)  
[Pre-EDD MI Taxonomist Graham L W-2 8-15-2019.xlsx](#)  
[Pre-EDD MI Taxonomist Graham L W-2 9-19-2019.xlsx](#)  
[Graham Lake Macroinvertebrate Sites 2019.pdf](#)

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**Subject:**Graham Lake bug data

**Date:**Tue, 10 Mar 2020 07:40:13 -0400

**From:**Paul Leeper <[moodymtn@tidewater.net](mailto:moodymtn@tidewater.net)>

**To:**DiFranco, Jeanne L <[Jeanne.L.DiFranco@maine.gov](mailto:Jeanne.L.DiFranco@maine.gov)>

**CC:**Dunlap, Frank <[frank.dunlap@brookfieldrenewable.com](mailto:frank.dunlap@brookfieldrenewable.com)>

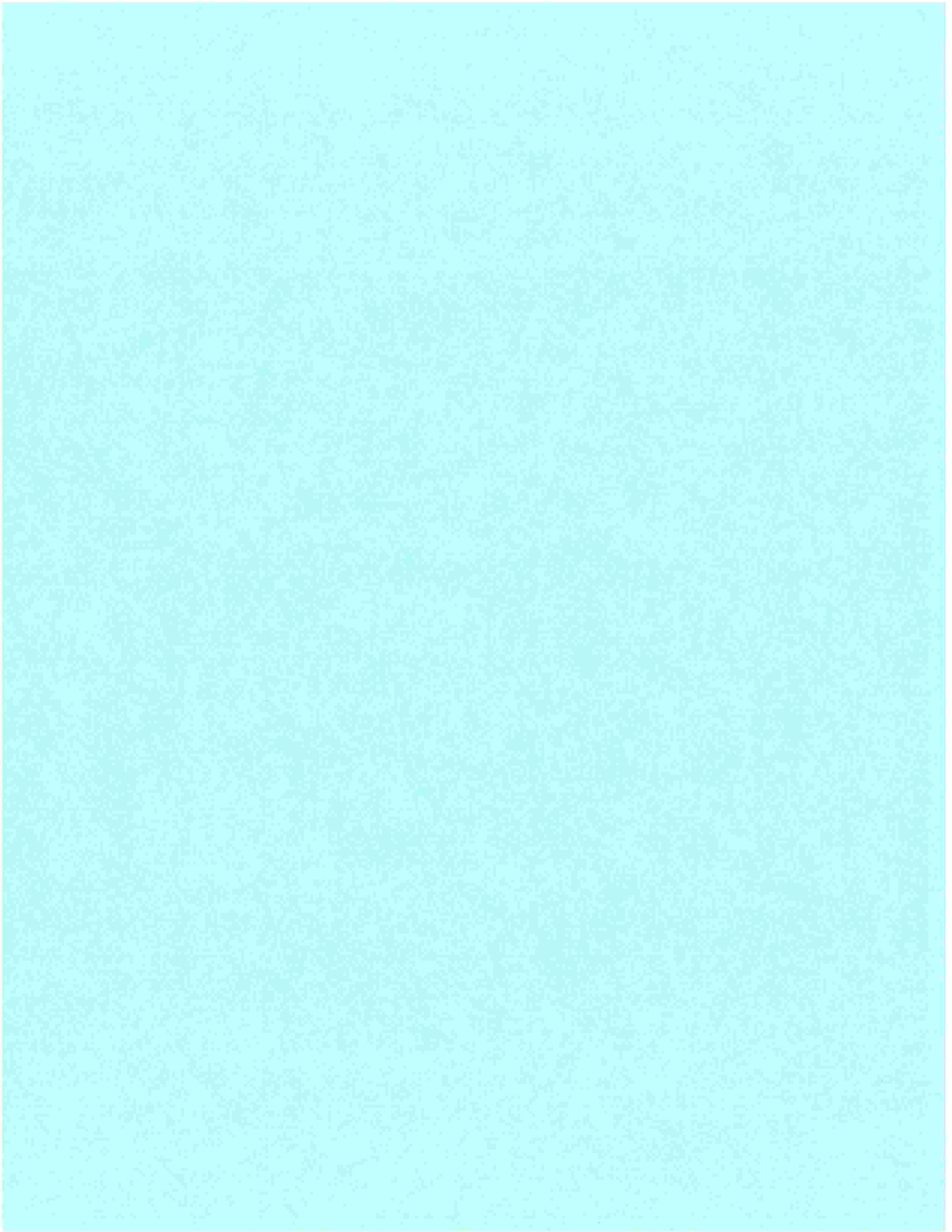
Morning Jeanne,

Frank Dunlap asked me to send over the bug data files for Graham Lake (2019) and Attean Pond (Normandeau 2009). Here are the files for Graham Lake as well as a map showing site locations. Attean data will be over later today.

If you have any questions please contact me.

Paul

--  
 Paul C. Leeper  
 Moody Mountain Env.  
 137 Diamond Str.  
 Searsmont, ME 04973



**From:** [Paul Leeper](#)  
**To:** [Maloney, Kelly](#)  
**Subject:** Fwd: Attean Pond bug data  
**Date:** Thursday, April 16, 2020 2:41:47 PM  
**Attachments:** [pre-EDD Stream MI Field Attean Pond ATT-1 8-24-08.xls](#)  
[pre-EDD Stream MI Field Attean Pond ATT-2 8-24-08.xls](#)  
[pre-EDD Stream MI Field Attean Pond ATT-3 8-24-08.xls](#)  
[pre-EDD Stream MI Field Attean Pond ATT-4 8-24-08.xls](#)  
[pre-EDD Stream MI Field Attean Pond ATT-5 8-24-08.xls](#)  
[pre-EDD Stream MI Field Attean Pond ATT-6 8-24-08.xls](#)  
[Pre-EDD MI Taxonomist Attean 1-2008.xlsx](#)  
[Pre-EDD MI Taxonomist Attean 2-2008.xlsx](#)  
[Pre-EDD MI Taxonomist Attean 3-2008.xlsx](#)  
[Pre-EDD MI Taxonomist Attean 4-2008.xlsx](#)  
[Pre-EDD MI Taxonomist Attean 5-2008.xlsx](#)  
[Pre-EDD MI Taxonomist Attean 6-2008.xlsx](#)  
[AtteanMacroinvertebrateSites2008Normandeau.pdf](#)

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**Subject:**Attean Pond bug data

**Date:**Tue, 10 Mar 2020 09:27:04 -0400

**From:**Paul Leeper <[moodymtn@tidewater.net](mailto:moodymtn@tidewater.net)>

**To:**DiFranco, Jeanne L <[Jeanne.L.DiFranco@maine.gov](mailto:Jeanne.L.DiFranco@maine.gov)>

**CC:**Dunlap, Frank <[frank.dunlap@brookfieldrenewable.com](mailto:frank.dunlap@brookfieldrenewable.com)>

Morning again Jeanne,

Please find enclosed bug data files for 2008 sampling done on Attean Pond by Normandeau Associates. The data was gleaned from the following report:

Brassua Hydroelectric Project (FERC No. 2615)  
 Macroinvertebrate Survey  
 Initial Study Report  
 Prepared for  
 Owners of Brassua Dam  
 Prepared by  
 Normandeau Associates, Inc.  
 February 2008

A few notes regarding the data files.

Biomonitoring Stream Macroinvertebrate Field Data Entry Forms: I didn't have a lot of data to input but did have substrate info. I couldn't find GPS coordinates but have included a map with locations noted.

Taxa ID worksheets: Data Input methodology

1. I copied the raw data to a new sheet
2. I took out extraneous rows and columns to allow data to line up with template and then copied the data into the template
3. I, conservatively, adjusted the taxa names to conform with the DEP taxa list, mainly removing "sp." from the end of genus names and "grp" from chiros.
4. You will notice some taxa do not have codes, I left them as is.

If you have any questions please contact me.

Paul

Paul C. Leeper  
Moody Mountain Env.  
137 Diamond Str.  
Searsmont, ME 04973

On 3/10/2020 7:40 AM, Paul Leeper wrote:

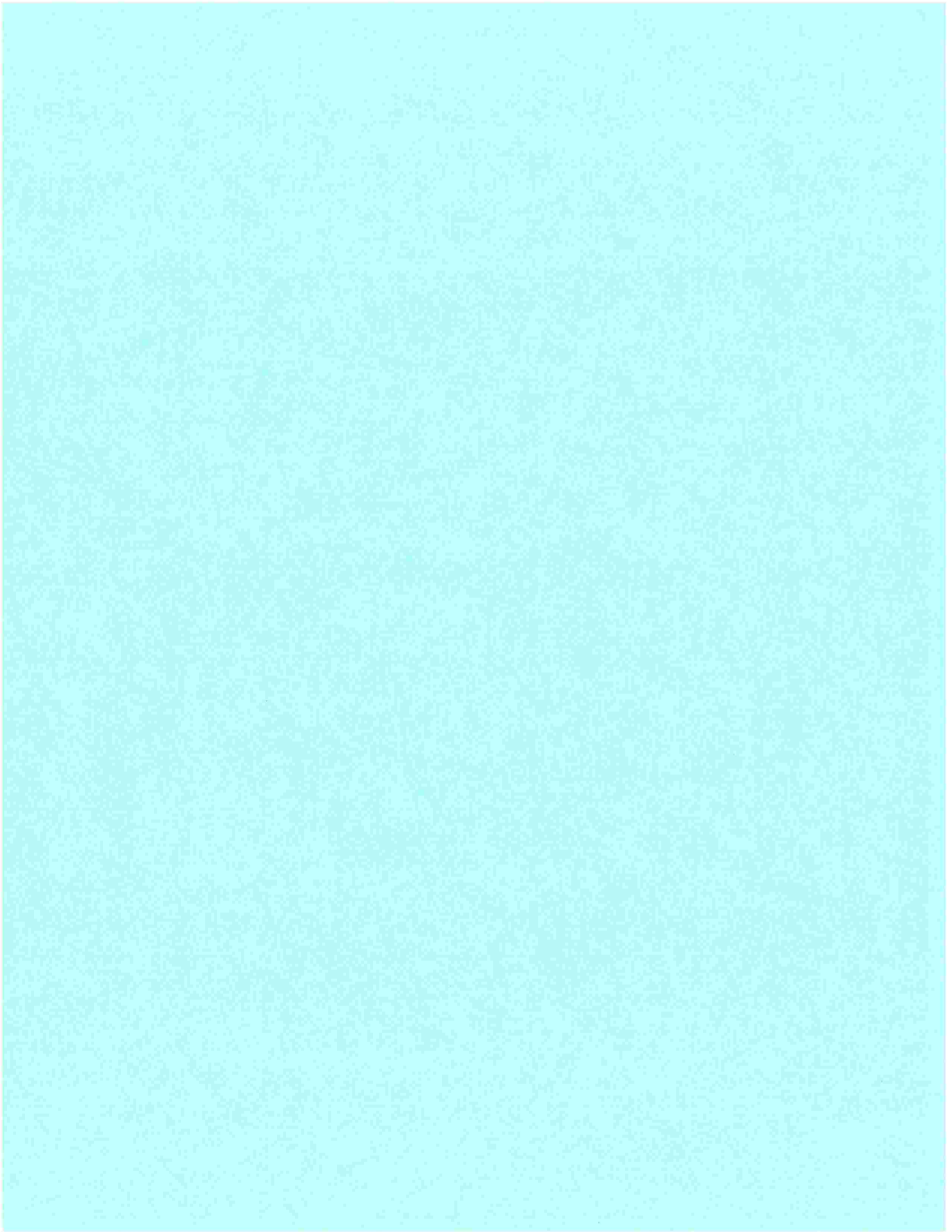
Morning Jeanne,

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If you have any questions please contact me.

Paul







FPL Energy Maine Hydro LLC  
160 Capitol Street, Suite 8, Augusta, ME 04330  
207-623-8413

February 5, 2009  
Filed Electronically

Kimberly D. Bose, Secretary  
Federal Energy Regulatory Commission  
888 First Street, N.E.  
Washington, DC 20426

Brassua Hydroelectric Project, FERC Project No. 2615  
Initial Study Report

Dear Secretary Bose,

On behalf of the Licensees for the Brassua Hydroelectric Project, FPL Energy Maine Hydro LLC respectfully submits the Initial Study Report for filing with the Federal Energy Regulatory Commission (FERC). The Initial Study Report is being filed in accordance with the Integrated Licensing Process (ILP) and includes study reports developed from the results of the field studies conducted primarily during the 2008 field season. Studies conducted include:

1. Impoundment Fluctuation Study
2. Bathymetric Study
3. Water Quality Monitoring Study
4. Fisheries Survey
5. Fisheries Entrainment and Impingement Assessment
6. Moose River Instream Flow and Habitat Assessment
7. Evaluation of Tailwater Fisheries Enhancements
8. Reservoir Tributary Access Survey
9. Macroinvertebrate Survey
10. Aquatic Resources Survey
11. Terrestrial Resources Survey
12. Cultural Resources Survey (filed under separate cover as privileged)
13. Mercury Sampling for Fish and Wildlife
14. Shoreline Ownership and Development Inventory
15. Project Redevelopment Study
16. Project Operations Overview
17. Desktop Review of Upstream Fish Passage Information
18. Recreation Survey
19. Upper Moose River Telemetry Study (2006)

Studies conducted and included in the Initial Study Report are consistent with the approach and methodology described in the Revised Proposed Study Plan (Study Plan), that was approved by FERC in its Study Plan Determination letter dated March 6, 2008. Any changes to scope or

Brassua Project No. 2615  
Initial Study Report

2

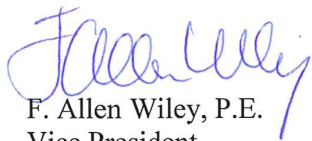
methodology to studies that were made during the course of the field season were done in consultation with the ILP participants and are described in the study reports.

In accordance with FERC's practice, the Cultural Resources Initial Study Report is being treated as a confidential document, and is only being provided to the Maine Historic Preservation Commission, area Native American Tribes and FERC. Licensees request that the report be placed in the Commission's non-public file.

In accordance with FERC regulations 18 CFR § 5.15(c), within 15 days following the filing of the Initial Study Report, Licensees will hold a meeting with the participants and Commission staff to discuss the study results and to discuss modifications to the study plan, if necessary, in light of the progress of the studies and data collected. Licensees will conduct the Initial Study Report meeting on Friday, February 20, 2009 at the Sportsman's Alliance of Maine, in Augusta, Maine, from 9:00 AM until 4:00 PM.

If you have any questions regarding the Initial Study Report or require any additional information, please contact Frank Dunlap at (207) 623-8417 or [Frank\\_Dunlap@fpl.com](mailto:Frank_Dunlap@fpl.com).

Sincerely,



F. Allen Wiley, P.E.  
Vice President  
FPL Energy Maine Hydro LLC

cc: Distribution List

**CERTIFICATE OF SERVICE**

I hereby certify that I have provided a copy via First Class Mail or electronic mail of the Initial Study Report for the Brassua Hydroelectric Project to each entity designated on the attached Distribution List.

Dated at Richmond, VA this 5th day of February, 2009.



---

Wendy Bley  
Long View Associates  
2416 Mountainbrook Dr.  
Richmond, Virginia 23233

**Brassua Project (FERC No. 2615)  
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Concord, NH 03391

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New York, NY 10001

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Countyhouse  
Skowhegan, ME 04976

Maine Office of the  
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Station 6  
Augusta, ME 04330

Maine Office of the Governor  
State House, Station 112  
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Sarah E. Tomalty  
Senior Attorney  
FPL Energy, Inc  
801 Pennsylvania Ave., NW  
Suite 220  
Washington, DC 20004

*Brassua Hydroelectric Project (FERC No. 2615)*

*Initial Study Report*

*Volume I of V*

**Prepared for  
Owners of Brassua Dam**

**Prepared by  
Long View Associates, Inc.**

**February 2009**

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---	-----

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#### Section II - Initial Study Reports

##### Brassua Reservoir Impoundment Fluctuation Study

###### Littoral Habitat Survey

##### Brassua Reservoir Bathymetric Study

##### Water Quality Monitoring Study

##### Fisheries Survey

###### Brassua Reservoir - Moose River Fish Community Survey

###### Moose River Brook Trout and Landlocked Salmon Radio-Telemetry Study

###### Moose River Smelt Drift Study

###### Moose River Wild Salmon Production Evaluation

###### Moose River Salmonid Redd Survey

###### Upper Moose River Brook Trout Fishery Assessment



Fish Entrainment and Impingement Assessment  
Moose River Instream Flow and Habitat Assessment  
Moose River Evaluation of Tailwater Fishery Enhancements  
Brassua Reservoir Tributary Habitat and Access Study

## **Volume II**

### **Section II - Initial Study Reports**

Macroinvertebrate Survey  
Brassua Reservoir Aquatic Resources Survey

## **Volume III**

### **Section II - Initial Study Reports**

Terrestrial Resources Study  
    Terrestrial Resources Survey  
    Aquatic Furbearer Study

## **Volume IV**

### **Section II - Initial Study Reports**

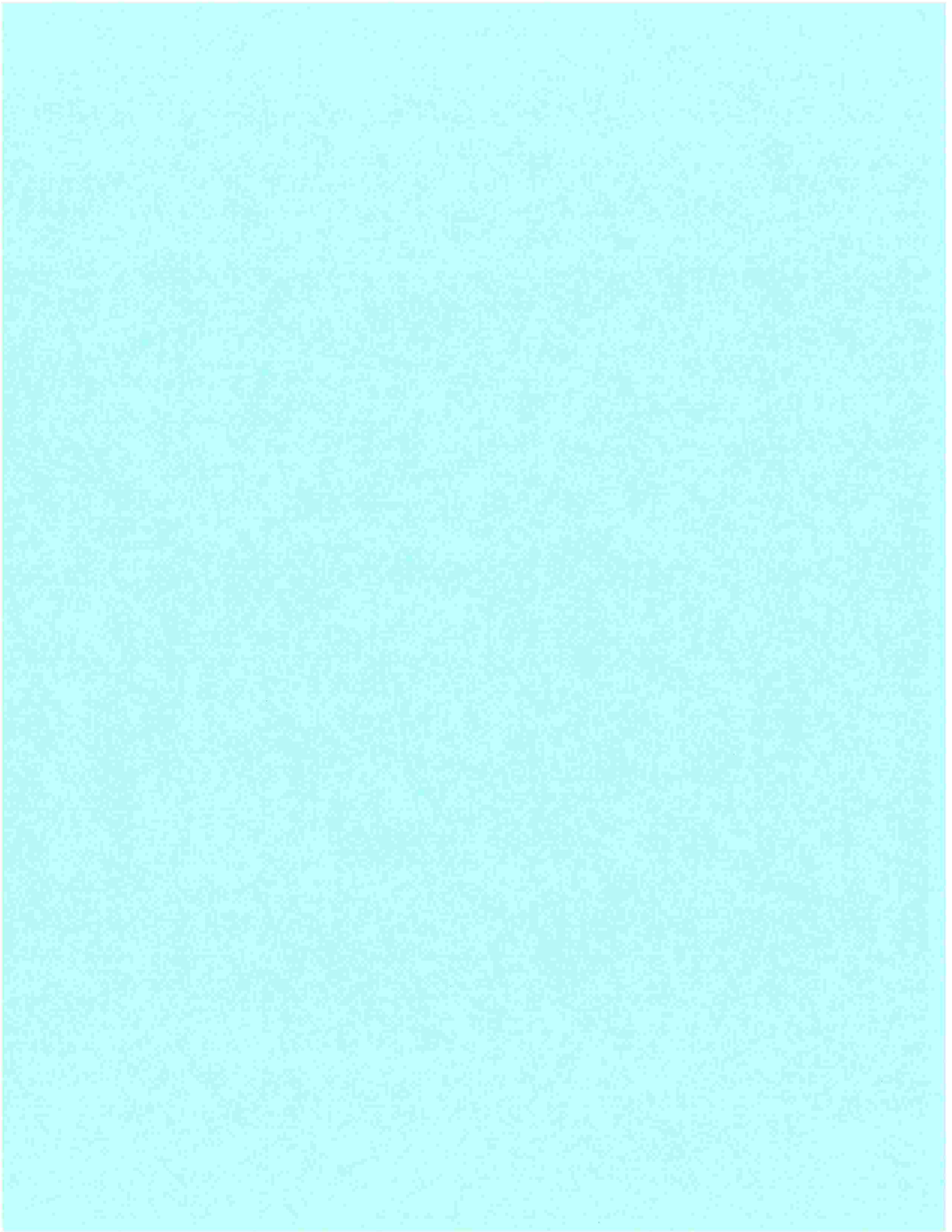
Mercury Sampling for Fish and Wildlife  
Shoreline Ownership and Development Inventory  
Project Redevelopment Study  
Project Operations Overview  
Desktop Review of Moose River Upstream Fish Passage  
Recreational Resources Inventory

### **Section III - ISR Appendices**

Appendix A: FERC-Approved Study Plan  
Appendix B: Study Consultation Record

## **Volume V - Privileged**

Cultural Resources Survey



**From:** [Maloney, Kelly](#)  
**To:** [Howatt, Kathy](#); ["Livesay, Nick"](#); [Dorman, Randy](#)  
**Subject:** Ellsworth Final BMI Reports  
**Date:** Friday, January 31, 2020 11:14:00 AM  
**Attachments:** [Graham Lake Final Macro Report-1-30-20.pdf](#)  
[Union River Macroinverts Final 1-30-20.pdf](#)  
[image002.png](#)

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Hi, Nick and Kathy,

Ahead of our meeting next Thursday, please find attached the final BMI reports for Graham Lake and the Union River. We are pleasantly surprised to report that Paul Leeper is of the opinion the Graham Lake meets aquatic life designated use standards. We are disappointed but not at all surprised that his analysis of the river resulted in affirmation of the previous analysis showing non-attainment. That said, there are many aspects of our current relicensing proposal that we think are worth revisiting in terms of potential remediation and we look forward to discussing those with you.

Thank you,

**Kelly Maloney**

Manager, Compliance – Northeast

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