



431 River Road
Bow, NH 03304

GSP MERRIMACK

April 4, 2019

U.S. Environmental Protection Agency
Region 1: New England
Office of Ecosystem Protection
Water Technical Unit (OES04 – SMR)
5 Post Office Square - Suite 100
Boston, MA 02109-3912

Dear Sir/Madam:

Merrimack Station
NPDES Permit No. NH0001465
2018 Annual Fish Impingement Report

Granite Shore Power LLC (GSP) herein submits this Annual Fish Impingement Report for the year 2018 pursuant to Part I., Section A.10.b. of the Merrimack Station NPDES Permit, No. NH0001465. This permit condition requires GSP to conduct impingement monitoring at Merrimack Station according to the provisions below.

- GSP shall provide impingement monitoring at Merrimack Station when flows from Garvins Falls Hydroelectric Station are less than 900 cubic feet per second (cfs) during any period from July 1 through October 15.
- GSP shall collect all fish from both MK-1 and MK-2 traveling screen washes during one continuous 48-hour period per week when the conditions outlined above are met.
- GSP shall report in writing to the New Hampshire Fish & Game Department (NHFGD), United States Fish and Wildlife Service (USFWS), New Hampshire Department of Environmental Services (NHDES) and the United States Environmental Protection Agency (USEPA) any Extraordinary Impingement Event (EIE) at Merrimack Station. An EIE is defined as an event when 50 or more fish at any one time, of any size or species, are either distressed or killed as a result of impingement.

Weekly sampling logs are attached which show that no impingement samples were collected in 2018 because the river flow was greater than 900 cfs at all times that Merrimack Station was withdrawing water to run the generating units. There were no extraordinary impingement events in 2018.

If you have any questions regarding this report, please call Allan Palmer at (603) 230-7951.

Sincerely,

GRANITE SHORE POWER

Elizabeth H. Tillotson
Executive Director of Administration & Regulatory Affairs

cc: Ms. Sharon M. DeMeo
US Environmental Protection Agency
Region 1: New England
Office of Ecosystem Protection
Mail Code: OEP
5 Post Office Square - Suite 100
Boston, MA 02109-3912

Mr. Eric Nelson
US Environmental Protection Agency
Region 1: New England
Office of Ecosystem Protection
Mail Code: OEP
5 Post Office Square - Suite 100
Boston, MA 02109-3912

NH Department of Environmental Services
Water Division
Wastewater Engineering Bureau
Permits and Compliance Section
29 Hazen Drive, P.O. Box 95
Concord, NH 03302-0095

Mr. Joseph F. McKeon
US Fish and Wildlife Service
Central New England Fishery Resources Office
151 Broad Street
Nashua, NH 03063

Mr. John Magee, Fish Habitat Biologist
New Hampshire Fish and Game Department
Inland Fisheries Division
11 Hazen Drive
Concord, NH 03301

Ms. Carol Henderson, Environmental Review Coordinator
New Hampshire Fish and Game Department
11 Hazen Drive
Concord, NH 03301



GSP MERRIMACK

MERRIMACK STATION
FISH IMPINGEMENT MONITORING
REPORT

JULY 1 TO OCTOBER 15
2018

ENVIRONMENTAL DATA

FISH IMPINGEMENT MONITORING WEEKLY DATA SHEET MERRIMACK STATION

Week Ending 7/7/18

SAMPLING PERIOD

Begin	/
End	/

RIVER FLOW
< > 900 cfs

> 900 cfs

UNIT STATUS
On/Off

MK-1	ON
MK-2	ON

PUMP STATUS
On/Off

MK-1	A+B
MK-2	A+B

Alewife																				
American Shad																				
Small mouth Bass																				
Largemouth Bass																				
Bluegill Sunfish																				
Pumpkinseed Sunfish																				
Redbreasted Sunfish																				
Brown Bullhead																				
White Sucker																				
Yellow Perch																				
Common Shiner																				
Spottail Shiner																				
American eel																				

FISH IMPINGEMENT MONITORING WEEKLY DATA SHEET MERRIMACK STATION

Week Ending 7/14/18

<p>SAMPLING PERIOD</p> <p>Begin <input style="width: 100px; height: 20px;" type="text"/></p> <p>End <input style="width: 100px; height: 20px;" type="text"/></p>	<p>RIVER FLOW < > 900 cfs</p> <p><input style="width: 100px; height: 20px;" type="text" value="~"/></p>	<p>UNIT STATUS On/Off</p> <p>MK-1 <input style="width: 100px; height: 20px;" type="text" value="off"/></p> <p>MK-2 <input style="width: 100px; height: 20px;" type="text" value="off"/></p>	<p>PUMP STATUS On/Off</p> <p>MK-1 <input style="width: 100px; height: 20px;" type="text" value="off"/></p> <p>MK-2 <input style="width: 100px; height: 20px;" type="text" value="off"/></p>
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Alewife																				
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Small mouth Bass																				
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Yellow Perch																				
Common Shiner																				
Spottail Shiner																				
American eel																				

FISH IMPINGEMENT MONITORING WEEKLY DATA SHEET MERRIMACK STATION


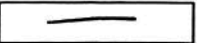




Week Ending 7/21/18

<p>SAMPLING PERIOD</p> <p>Begin </p> <p>End </p>	<p>RIVER FLOW < > 900 cfs</p> <p style="text-align: center;"></p>	<p>UNIT STATUS On/Off</p> <p>MK-1 </p> <p>MK-2 </p>	<p>PUMP STATUS On/Off</p> <p>MK-1 </p> <p>MK-2 </p>
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Alewife																				
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White Sucker																				
Yellow Perch																				
Common Shiner																				
Spottail Shiner																				
American eel																				

FISH IMPINGEMENT MONITORING WEEKLY DATA SHEET MERRIMACK STATION

Week Ending 7/28/18

SAMPLING PERIOD Begin  End	RIVER FLOW < > 900 cfs 	UNIT STATUS On/Off MK-1  MK-2 	PUMP STATUS On/Off MK-1  MK-2 
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Alewife																		
American Shad																		
Small mouth Bass																		
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White Sucker																		
Yellow Perch																		
Common Shiner																		
Spottail Shiner																		
American eel																		

FISH IMPINGEMENT MONITORING WEEKLY DATA SHEET MERRIMACK STATION

Week Ending 8/4/18

<p>SAMPLING PERIOD</p> <p>Begin </p> <p>End </p>	<p>RIVER FLOW < > 900 cfs</p> <p style="text-align: center;"></p>	<p>UNIT STATUS On/Off</p> <p>MK-1 </p> <p>MK-2 </p>	<p>PUMP STATUS On/Off</p> <p>MK-1 </p> <p>MK-2 </p>
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Alewife																	
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White Sucker																	
Yellow Perch																	
Common Shiner																	
Spottail Shiner																	
American eel																	

FISH IMPINGEMENT MONITORING WEEKLY DATA SHEET MERRIMACK STATION

Week Ending 8/11/18

SAMPLING PERIOD Begin <input style="width: 100%; height: 15px;" type="text"/> End <input style="width: 100%; height: 15px;" type="text"/>	RIVER FLOW < > 900 cfs <input style="width: 100%; height: 20px;" type="text" value=" > 900cfs "/>	UNIT STATUS On/Off MK-1 <input style="width: 100%; height: 20px;" type="text" value=" ON"/> MK-2 <input style="width: 100%; height: 20px;" type="text" value=" ON"/>	PUMP STATUS On/Off MK-1 <input style="width: 100%; height: 20px;" type="text" value=" A+B"/> MK-2 <input style="width: 100%; height: 20px;" type="text" value=" A+B"/>
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Alewife															
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Yellow Perch															
Common Shiner															
Spottail Shiner															
American eel															

FISH IMPINGEMENT MONITORING WEEKLY DATA SHEET MERRIMACK STATION

Week Ending 8/18/18

SAMPLING PERIOD Begin <input style="width: 100%; height: 15px;" type="text"/> End <input style="width: 100%; height: 15px;" type="text"/>	RIVER FLOW < > 900 cfs <input style="width: 100%; height: 20px;" type="text" value=" > 900 cfs"/>	UNIT STATUS On/Off MK-1 <input style="width: 100%; height: 20px;" type="text" value=" off"/> MK-2 <input style="width: 100%; height: 20px;" type="text" value=" ON"/>	PUMP STATUS On/Off MK-1 <input style="width: 100%; height: 20px;" type="text" value=" —"/> MK-2 <input style="width: 100%; height: 20px;" type="text" value=" A+B"/>
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White Sucker															
Yellow Perch															
Common Shiner															
Spottail Shiner															
American eel															

FISH IMPINGEMENT MONITORING WEEKLY DATA SHEET MERRIMACK STATION

Week Ending 8/25/18

<p>SAMPLING PERIOD</p> <p>Begin </p> <p>End </p>	<p>RIVER FLOW</p> <p>< > 900 cfs</p> <p>—</p>	<p>UNIT STATUS</p> <p>On/Off</p> <p>MK-1 off</p> <p>MK-2 off</p>	<p>PUMP STATUS</p> <p>On/Off</p> <p>MK-1 off</p> <p>MK-2 off</p>
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Alewife																			
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White Sucker																			
Yellow Perch																			
Common Shiner																			
Spottail Shiner																			
American eel																			

FISH IMPINGEMENT MONITORING WEEKLY DATA SHEET MERRIMACK STATION

Week Ending 9/1/18

SAMPLING PERIOD

Begin	
End	/

RIVER FLOW
< > 900 cfs

> 900 cfs

UNIT STATUS
On/Off

MK-1	ON
MK-2	ON

PUMP STATUS
On/Off

MK-1	A+B
MK-2	A+B

Alewife																				
American Shad																				
Small mouth Bass																				
Largemouth Bass																				
Bluegill Sunfish																				
Pumpkinseed Sunfish																				
Redbreasted Sunfish																				
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Yellow Perch																				
Common Shiner																				
Spottail Shiner																				
American eel																				

**FISH IMPINGEMENT MONITORING
WEEKLY DATA SHEET
MERRIMACK STATION**

Week Ending 9/8/18

SAMPLING PERIOD
Begin
End

RIVER FLOW
< > 900 cfs
 > 900 cfs

UNIT STATUS
On/Off
MK-1 ON
MK-2 ON

PUMP STATUS
On/Off
MK-1 A+B
MK-2 A+B

Alewife														
American Shad														
Small mouth Bass														
Largemouth Bass														
Bluegill Sunfish														
Pumpkinseed Sunfish														
Redbreasted Sunfish														
Brown Bullhead														
White Sucker														
Yellow Perch														
Common Shiner														
Spottail Shiner														
American eel														

FISH IMPINGEMENT MONITORING WEEKLY DATA SHEET MERRIMACK STATION

Week Ending 9/15/18

SAMPLING PERIOD

Begin

End

RIVER FLOW
< > 900 cfs

UNIT STATUS
On/Off

MK-1

MK-2

PUMP STATUS
On/Off

MK-1

MK-2

Alewife																				
American Shad																				
Small mouth Bass																				
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Yellow Perch																				
Common Shiner																				
Spottail Shiner																				
American eel																				

FISH IMPINGEMENT MONITORING WEEKLY DATA SHEET MERRIMACK STATION

Week Ending 9/22/18

SAMPLING PERIOD Begin End 	RIVER FLOW < > 900 cfs —	UNIT STATUS On/Off MK-1 off MK-2 off	PUMP STATUS On/Off MK-1 off MK-2 off
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Alewife																		
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Yellow Perch																		
Common Shiner																		
Spottail Shiner																		
American eel																		

FISH IMPINGEMENT MONITORING WEEKLY DATA SHEET MERRIMACK STATION

Week Ending 9/29/18

SAMPLING PERIOD

Begin	
End	/

RIVER FLOW
< > 900 cfs

—

UNIT STATUS
On/Off

MK-1	off
MK-2	off

PUMP STATUS
On/Off

MK-1	off
MK-2	off

Alewife																			
American Shad																			
Small mouth Bass																			
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FISH IMPINGEMENT MONITORING WEEKLY DATA SHEET MERRIMACK STATION




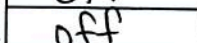
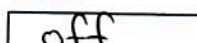
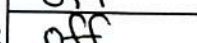
Week Ending 10/6/18

SAMPLING PERIOD	RIVER FLOW < > 900 cfs	UNIT STATUS On/Off	PUMP STATUS On/Off
Begin <input style="width: 100px; height: 20px;" type="text"/> End <input style="width: 100px; height: 20px;" type="text"/>	<input style="width: 100px; height: 20px;" type="text"/>	MK-1 <input style="width: 60px; height: 20px;" type="text"/> MK-2 <input style="width: 60px; height: 20px;" type="text"/>	MK-1 <input style="width: 60px; height: 20px;" type="text"/> MK-2 <input style="width: 60px; height: 20px;" type="text"/>

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Common Shiner																			
Spottail Shiner																			
American eel																			

FISH IMPINGEMENT MONITORING WEEKLY DATA SHEET MERRIMACK STATION

Week Ending 10/15/18*

SAMPLING PERIOD	RIVER FLOW < > 900 cfs	UNIT STATUS On/Off	PUMP STATUS On/Off
Begin  End 		MK-1  MK-2 	MK-1  MK-2 

* End of monitoring period.

Alewife																			
American Shad																			
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Pumpkinseed Sunfish																			
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