



Public Service  
of New Hampshire

# 225

PSNH Energy Park  
780 North Commercial Street, Manchester, NH 03101

Public Service Company of New Hampshire  
P.O. Box 330  
Manchester, NH 03105-0330  
(603) 634-2236  
Fax (603) 634-2213  
macdojm@psnh.com

The Northeast Utilities System

May 5, 2010

John M. MacDonald  
Vice President - Generation

D28957

Ms. Shelley Puleo  
Environmental Protection Specialist  
US Environmental Protection Agency  
Region 1: New England  
Office of EcoSystem Protection  
5 Post Office Square  
Suite 100 (OEP06-3)  
Boston, MA 02114

**Re: Merrimack Station, Bow, New Hampshire  
NPDES Permit Application for Renewal of NPDES Permit No.NH0001465**

Dear Ms. Puleo:

On March 10, 1997, Public Service Company of New Hampshire (PSNH) submitted a timely and complete application to the US Environmental Protection Agency (EPA) for the renewal of NPDES Permit No. NH0001465, issued June 25, 1992 and modified October 22, 1992, for Merrimack Station in Bow, NH. The station continues to operate under an administratively continued permit since a draft permit has not been issued to date.

In June 2006, the State of New Hampshire passed RSA 125-O: 11-18, requiring PSNH to install a wet flue gas desulfurization system (also known as FGD or scrubber) at Merrimack Station, and to have it operational no later than July 1, 2013. The Clean Air Project (CAP) is presently under construction to comply with the law and reduce mercury emissions by at least 80-percent, as well as reduce sulfur dioxide emissions by at least 90-percent. When complete, the CAP will reduce mercury deposition by more than 200 pounds annually and bring Merrimack Station into full compliance with Phase II of the Northeast Regional Mercury TMDL.

One part of the CAP is to build a new dedicated wastewater treatment system (WWTS) designed with state-of-the-art technology to fully treat the FGD blowdown. PSNH has attended several meetings with staff from the New Hampshire Department of Environmental Services (DES) to assess the performance of the FGD WWTS and determine if additional permit conditions are necessary. Since much of the historical analytical data collected was below traditional method detection levels, PSNH implemented a river and effluent monitoring program to collect trace metal data. PSNH hired URS Corporation, as the project manager for CAP, to evaluate the data and build a model to calculate the potential effect of the FGD WWTS discharge, if any, on the existing treatment system and the water quality of the river.

Results from the URS model have been submitted to DES; DES staff has also modeled the system and confirmed our results. It is our understanding that for every pollutant analyzed, it has been demonstrated that there is no increase in loading from current conditions or that the effect on the river water quality is insignificant in accordance with New Hampshire antidegradation regulation. We have also submitted data to reflect maximum loading conditions and DES has confirmed that, with the possible exception of copper, there is no reasonable potential for the effluent to exceed the future maximum allowable permit concentrations. Based on these findings, we expect that DES will propose a Merrimack Station monitoring program to EPA that will confirm compliance with NH water quality standards.

The blowdown from the FGD is only 50,000 gallons per day (gpd), a relatively modest flow by industry standards. The level of pollutant loading maintains compliance with water quality standards due to the high level of treatment provided by the FGD WWTS. As part of the scrubber system project, PSNH has also committed to reusing over one million gallons of wastewater daily to reduce the overall loading even further. The new effluent will be blended into roughly five million gallons per day (mgd) of flow in the treatment pond before mixing with the 70 to 275 mgd of cooling water in the canal, and ultimately discharging to the river. Since the proposed discharge from the FGD WWTS can be added to the existing system while still maintaining full compliance with current permit conditions, PSNH requests approval from EPA to operate the new system under the existing permit. If a specific monitoring program is established, operational effluent data can be collected that will provide valuable information and verification to determine if additional conditions are necessary when the permit is ultimately reissued.

As requested by DES, PSNH is submitting this information to supplement the 1997 permit renewal application to provide the new data collected from the water quality study. Among other correspondence, please find enclosed:

- A revised Form 1.
- A revised Form 2C for Outfall 003A with a brief narrative and a supplemental sheet showing projected maximum daily loads with an operational FGD WWTS.
- The URS Executive Summary of the Water Quality Study.
- Various plans and schematics that show details of the station as well as the new and existing treatment systems. Please note that two of these plans have been labeled as Confidential Business Information since they contain critical energy infrastructure information as defined by the Federal Energy Regulatory Commission (specific, detailed engineering or structural design information related to the generation of energy).

Beyond the addition of the scrubber system, the only other substantial change to the generation or management of wastewater at Merrimack Station since the renewal application was originally submitted was the isolation of the nearby wetlands. The existing permit required the rerouting of the slag sluice waters and the segregation of the adjacent wetlands from the Merrimack Station treatment pond. Progress reports were submitted to DES up until the project was completed on December 3, 1998.

Shelley Puleo  
D28957/Page 3  
May 5, 2010

Please contact Allan Palmer, Senior Engineer, at (603) 634-2439, if you have any questions or require additional information.

Very truly yours,



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John M. MacDonald  
Vice President

Enclosure: Supplemental NPDES Application

cc: John Paul King, USEPA

Harry T. Stewart, P.E., Director  
NH Department of Environmental Services  
Water Division  
29 Hazen Drive, PO Box 95  
Concord, NH 03302-0095

Jeffrey G. Andrews, NHDES  
Wastewater Engineering Bureau

Linda T. Landis  
Senior Counsel, PSNH

FORM <b>1</b> GENERAL	U.S. ENVIRONMENTAL PROTECTION AGENCY <b>GENERAL INFORMATION</b> Consolidated Permits Program <i>(Read the "General Instructions" before starting.)</i>	I. EPA I.D. NUMBER <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:5%; text-align: center;">S</td> <td style="width:85%;"></td> <td style="width:5%; text-align: center;">T/A</td> <td style="width:5%; text-align: center;">C</td> </tr> <tr> <td style="text-align: center;">F</td> <td>NHD 000 791 509</td> <td></td> <td style="text-align: center;">D</td> </tr> <tr> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> <td style="text-align: center;">13</td> <td style="text-align: center;">14</td> </tr> <tr> <td style="text-align: center;">15</td> <td style="text-align: center;">16</td> <td style="text-align: center;">17</td> <td style="text-align: center;">18</td> </tr> </table>	S		T/A	C	F	NHD 000 791 509		D	1	2	13	14	15	16	17	18
S		T/A	C															
F	NHD 000 791 509		D															
1	2	13	14															
15	16	17	18															

LABEL ITEMS I. EPA I.D. NUMBER III. FACILITY NAME V. FACILITY MAILING ADDRESS VI. FACILITY LOCATION	NHD000791509 Merrimack Station Public Service Company of New Hampshire 780 North Commercial Street Manchester, NH 03101 Attn: John M. MacDonald, Vice President 97 River Road, Bow, NH 03301	GENERAL INSTRUCTIONS If a preprinted label has been provided, affix it in the designated space. Review the information carefully. If any of it is incorrect, cross through it and enter the correct data in the appropriate fill-in area below. Also, if any of the preprinted data is absent (the area to the left of the label space lists the information that should appear), please provide it in the proper fill-in area(s) below. If the label is complete and correct, you need not complete Items I, III, V, and VI (except VI-B which must be completed regardless). Complete all items if no label has been provided. Refer to the instructions for detailed item descriptions and for the legal authorizations under which this data is collected.
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**II. POLLUTANT CHARACTERISTICS**

INSTRUCTIONS: Complete A through J to determine whether you need to submit any permit application forms to the EPA. If you answer "yes" to any questions, you must submit this form and the supplemental form listed in the parenthesis following the question. Mark "X" in the box in the third column if the supplemental form is attached. If you answer "no" to each question, you need not submit any of these forms. You may answer "no" if your activity is excluded from permit requirements; see Section C of the instructions. See also, Section D of the instructions for definitions of **bold-faced terms**.

SPECIFIC QUESTIONS	Mark "X"			SPECIFIC QUESTIONS	Mark "X"		
	YES	NO	FORM ATTACHED		YES	NO	FORM ATTACHED
A. Is this facility a <b>publicly owned treatment works</b> which results in a <b>discharge to waters of the U.S.?</b> (FORM 2A)		X		B. Does or will this facility (either existing or proposed) include a <b>concentrated animal feeding operation</b> or <b>aquatic animal production facility</b> which results in a <b>discharge to waters of the U.S.?</b> (FORM 2B)		X	
C. Is this a facility which currently results in <b>discharges to waters of the U.S.</b> other than those described in A or B above? (FORM 2C)	X		X	D. Is this a proposed facility (other than those described in A or B above) which will result in a <b>discharge to waters of the U.S.?</b> (FORM 2D)		X	
E. Does or will this facility treat, store, or dispose of <b>hazardous wastes?</b> (FORM 3)	X			F. Do you or will you inject at this facility industrial or municipal effluent below the lowermost stratum containing, within one quarter mile of the well bore, <b>underground sources of drinking water?</b> (FORM 4)		X	
G. Do you or will you inject at this facility any produced water or other fluids which are brought to the surface in connection with conventional oil or natural gas production, inject fluids used for enhanced recovery of oil or natural gas, or inject fluids for storage of liquid hydrocarbons? (FORM 4)		X		H. Do you or will you inject at this facility fluids for special processes such as mining of sulfur by the Frasch process, solution mining of minerals, in situ combustion of fossil fuel, or recovery of geothermal energy? (FORM 4)		X	
I. Is this facility a proposed <b>stationary source</b> which is one of the 28 industrial categories listed in the instructions and which will potentially emit 100 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an attainment area? (FORM 5)		X		J. Is this facility a proposed <b>stationary source</b> which is NOT one of the 28 industrial categories listed in the instructions and which will potentially emit 250 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an attainment area? (FORM 5)		X	

**III. NAME OF FACILITY**

C	1	SKIP	MERRIMACK STATION
15	16	29	30

**IV. FACILITY CONTACT**

A. NAME & TITLE (last, first, & title)		B. PHONE (area code & no.)	
C	2	PALMER ALLAN SENIOR ENGINEER	(603) 634-2439
15	16	45	46

**V. FACILITY MAILING ADDRESS**

A. STREET OR P.O. BOX			
C	3	PO BOX 330	
15	16	45	
B. CITY OR TOWN		C. STATE	D. ZIP CODE
C	4	MANCHESTER	NH
15	16	40	41

**VI. FACILITY LOCATION**

A. STREET, ROUTE NO. OR OTHER SPECIFIC IDENTIFIER			
C	5	97 RIVER ROAD	
15	16	45	
B. COUNTY NAME			
MERRIMACK			
46	70		
C. CITY OR TOWN		D. STATE	E. ZIP CODE
C	6	BOW	NH
15	16	40	41

CONTINUED FROM THE FRONT

VII. SIC CODES (4-digit, in order of priority)

A. FIRST										B. SECOND										
C	7	4	9	1	1	(specify) ELECTRIC POWER GENERATION	C	7					(specify)	C	7					(specify)
15	16	17	18	19	15	16	17	18	19	15	16	17	18	19	15	16	17	18	19	
C. THIRD										D. FOURTH										
C	7					(specify)	C	7					(specify)	C	7					(specify)
15	16	17	18	19	15	16	17	18	19	15	16	17	18	19	15	16	17	18	19	

VIII. OPERATOR INFORMATION

A. NAME															B. Is the name listed in Item VIII-A also the owner?				
C	8	PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE													<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO				
15	16														55	56			

C. STATUS OF OPERATOR (Enter the appropriate letter into the answer box: if "Other," specify.)															D. PHONE (area code & no.)												
F = FEDERAL					M = PUBLIC (other than federal or state)					P (specify)					A (603) 669-4000												
S = STATE					O = OTHER (specify)																						
P = PRIVATE																											
15	16														55	56	15	16	17	18	19	20	21	22	23	24	25

E. STREET OR P.O. BOX														
PO BOX 330														
26														55

F. CITY OR TOWN										G. STATE	H. ZIP CODE	IX. INDIAN LAND								
C	B	MANCHESTER								NH	03105	Is the facility located on Indian lands? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO								
15	16									40	41	42	43	44	45	46	47	48	49	50

X. EXISTING ENVIRONMENTAL PERMITS

A. NPDES (Discharges to Surface Water)										D. PSD (Air Emissions from Proposed Sources)									
C	T	I	NH0001465							C	T	I							
9	N									9	P								
15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30				

B. UIC (Underground Injection of Fluids)										E. OTHER (specify)									
C	T	I								C	T	I	GWP-198400065-B-004						
9	U									9			(specify) NHDES GROUNDWATER PERMIT						
15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30				

C. RCRA (Hazardous Wastes)										E. OTHER (specify)									
C	T	I	NHD000791509							C	T	I	TV-0055						
9	R									9			(specify) NHDES TITLE V AIR PERMIT						
15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30				

XI. MAP  
 Attach to this application a topographic map of the area extending to at least one mile beyond property boundaries. The map must show the outline of the facility, the location of each of its existing and proposed intake and discharge structures, each of its hazardous waste treatment, storage, or disposal facilities, and each well where it injects fluids underground. Include all springs, rivers, and other surface water bodies in the map area. See instructions for precise requirements.

XII. NATURE OF BUSINESS (provide a brief description)

Merrimack Station is a four unit, 473 MW, electric generating facility. Unit 1 (113 MW) and Unit 2 (320 MW) are coal-fired, wet bottom cyclone boilers. The remaining two units (40 MW) are combustion turbines fired with #1 fuel oil and are typically operated during periods of highest seasonal peak demand. Coal flyash and boiler slag are produced as byproducts. Merrimack Station is PSNH's primary base load plant and generates approximately 3 million MWhrs of power annually to provide energy for roughly 190,000 New Hampshire homes.

Merrimack Station is part of the Northeast Utilities System.

XIII. CERTIFICATION (see instructions)

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this application and all attachments and that, based on my inquiry of those persons immediately responsible for obtaining the information contained in the application, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

A. NAME & OFFICIAL TITLE (type or print)										B. SIGNATURE										C. DATE SIGNED				
John M. MacDonald Vice President																				5/5/2010				

COMMENTS FOR OFFICIAL USE ONLY															
C															
15	16														55

EPA I.D. NUMBER (copy from Item 1 of Form 1)  
 NHD 000 791 509

Form Approved.  
 OMB No. 2040-0086.  
 Approval expires 3-31-98.

Please print or type in the unshaded areas only.

**FORM 2C NPDES**  **U.S. ENVIRONMENTAL PROTECTION AGENCY**  
**APPLICATION FOR PERMIT TO DISCHARGE WASTEWATER**  
**EXISTING MANUFACTURING, COMMERCIAL, MINING AND SILVICULTURE OPERATIONS**  
*Consolidated Permits Program*

**I. OUTFALL LOCATION**

For each outfall, list the latitude and longitude of its location to the nearest 15 seconds and the name of the receiving water.

A. OUTFALL NUMBER (list)	B. LATITUDE			C. LONGITUDE			D. RECEIVING WATER (name)
	1. DEG.	2. MIN.	3. SEC.	1. DEG.	2. MIN.	3. SEC.	
001	43.00	8.00	23.00	71.00	28.00	5.00	Cooling Water Canal (to 003)
002	43.00	8.00	23.00	71.00	28.00	5.00	Cooling Water Canal (to 003)
003A	43.00	8.00	22.00	71.00	28.00	9.00	Cooling Water Canal (to 003)
003B	43.00	8.00	15.00	71.00	28.00	9.00	Cooling Water Canal (to 003)
003	43.00	8.00	9.00	71.00	27.00	51.00	Merrimack River

**II. FLOWS, SOURCES OF POLLUTION, AND TREATMENT TECHNOLOGIES**

A. Attach a line drawing showing the water flow through the facility. Indicate sources of intake water, operations contributing wastewater to the effluent, and treatment units labeled to correspond to the more detailed descriptions in Item B. Construct a water balance on the line drawing by showing average flows between intakes, operations, treatment units, and outfalls. If a water balance cannot be determined (e.g., for certain mining activities), provide a pictorial description of the nature and amount of any sources of water and any collection or treatment measures.

B. For each outfall, provide a description of: (1) All operations contributing wastewater to the effluent, including process wastewater, sanitary wastewater, cooling water, and storm water runoff; (2) The average flow contributed by each operation; and (3) The treatment received by the wastewater. Continue on additional sheets if necessary.

1. OUTFALL NO. (list)	2. OPERATION(S) CONTRIBUTING FLOW		3. TREATMENT	
	a. OPERATION (list)	b. AVERAGE FLOW (include units)	a. DESCRIPTION	b. LIST CODES FROM TABLE 2C-1
001	U1 once through condenser cooling water	57.5 MGD	Chlorination	
	Internal Monitoring Location		Discharges to Waste Treatment Plant #2 (cooling canal with power spray modules)	
002	U2 once through condenser cooling water	131.2 MGD	Chlorination	
	Internal Monitoring Location		Discharges to Waste Treatment Plant #2 (cooling canal with power spray modules)	
003A	Slag Tank Overflows & Storm Drains	9400 GPD	Waste Treatment #4 (Slag Settling Pond)	1-U 1-O
	U1 Boiler Slowdown	720 GPD <i>1600</i>	Retention Time is roughly 4-10 hours	
	U1 & U2 Boiler Drains	880 GPD	Discharges to WTP #2 (cooling canal with power spray modules) or reused for PGD makeup water	
	Roof & Yard Storm Drains	5000 GPD	Internal Monitoring Location	
	U1 & U2 Slag Sluice Water	6.23 MGD	Conveyed from Wastewater Treatment #3 (Slag Sluice Settling Area)	1-U
	Treated Effluent from WTP #1:	83,000 GPD		
	Demineralizer Regenerations	12,940 GPD ✓	50,000 Gallon Neutralizer	2-K 1-O
	Polishers Regenerations	7150 GPD ✓	Retention time is indefinite	
	Floor & Equipment Drains	40,000 GPD ✓ <i>17,000</i>	250 GPM Oil/Water Recycle collected oil	1-H 1-M
	Chemical Drains	6000 GPD	Settling & Mixing in 3-250,000 Gallon Basins	1-U 2-C
	Miscellaneous Maintenance Drains	106 GPD ✓	Adjust pH and reuse effluent or discharge to Waste Treatment #4 (Slag Settling Pond)	2-D 4-C
	Stormwater	1434 GPD		
	Ash Landfill Leachate	5500 GPD ✓	Filter press and landfill sludge	5-R 5-Q
	Gas Side Ash Washwater; U1 Air Heater, Boilers, Precips, etc.	2750 GPD <i>6350 or 2900</i>	6,000 Gallon Chem Mix Basin (Raise pH, add coagulents, polymers, etc)	1-G 1-O
	Other Low Volume Wastes			

OFFICIAL USE ONLY (effluent guidelines sub-categories)

EPA I.D. NUMBER (copy from Item 1 of Form 1)  
 NHD 000 791 509

Form Approved.  
 OMB No. 2040-0086.  
 Approval expires 3-31-98.

Please print or type in the unshaded areas only.

**FORM 2C NPDES**  **U.S. ENVIRONMENTAL PROTECTION AGENCY**  
**APPLICATION FOR PERMIT TO DISCHARGE WASTEWATER**  
**EXISTING MANUFACTURING, COMMERCIAL, MINING AND SILVICULTURE OPERATIONS**  
*Consolidated Permits Program*

**I. OUTFALL LOCATION**

For each outfall, list the latitude and longitude of its location to the nearest 15 seconds and the name of the receiving water.

A. OUTFALL NUMBER (list)	B. LATITUDE			C. LONGITUDE			D. RECEIVING WATER (name)
	1. DEG.	2. MIN.	3. SEC.	1. DEG.	2. MIN.	3. SEC.	
004	48.00	3.00	31.00	71.00	28.00	5.00	Merrimack River
005	48.00	3.00	31.00	71.00	28.00	5.00	Merrimack River

**II. FLOWS, SOURCES OF POLLUTION, AND TREATMENT TECHNOLOGIES**

A. Attach a line drawing showing the water flow through the facility. Indicate sources of intake water, operations contributing wastewater to the effluent, and treatment units labeled to correspond to the more detailed descriptions in Item B. Construct a water balance on the line drawing by showing average flows between intakes, operations, treatment units, and outfalls. If a water balance cannot be determined (e.g., for certain mining activities), provide a pictorial description of the nature and amount of any sources of water and any collection or treatment measures.

B. For each outfall, provide a description of: (1) All operations contributing wastewater to the effluent, including process wastewater, sanitary wastewater, cooling water, and storm water runoff; (2) The average flow contributed by each operation; and (3) The treatment received by the wastewater. Continue on additional sheets if necessary.

1. OUTFALL NO. (list)	2. OPERATION(S) CONTRIBUTING FLOW		3. TREATMENT	
	a. OPERATION (list)	b. AVERAGE FLOW (include units)	a. DESCRIPTION	b. LIST CODES FROM TABLE 2C-1
003A	FGD Wastewater Treatment System	50,000 GPD	Treated Effluent from FGD	1-G 1-O
	Wastewater Treatment System #5		Chemical Conditioning Tanks, Reaction Tanks	1-P 1-U
	Internal Monitoring Location		Solids Contact Clarifiers, Gravity Filters	1-V 2-C
			Filter press and landfill sludge	2-K 4-C
003B	Boiler Tube Water Side Metal	120 GPD	Same Treatment as Outfall 003A	5-L 5-R
	Cleaning Wastes (Chemical Cleanings)		Internal Monitoring Location	5-Q
003	Outfalls 001, 002 and 003 A/B	192 MGD	Waste Treatment Plant No.2 (cooling canal)	
			Spray Evaporative Cooling	XX 1-O
			Retention Time of 5 to 10 Hours	
			Discharges to Merrimack River	4-A
004	U1/U2 Screenhouse Operation		No Treatment	4-A
	- Inlet Screen Washwater	1.72 MGD		
	- Floor Sumps	110 GPD		
	- Roof Drains	27 GPD		
	- U1 Fire Main Pump Overflow	0.72 MGD		
	- Equipment Deicing Steam	100 GPD		
	- Deicing Headers	21 MGD		
	- Ice Dam Removal Spray (Fire Hose)	0.3 MGD		
005	U1/U2 Screenhouse Maintenance Sumps		No Treatment	4-A
	- Dewater Tunnel & Screenwells	0.3 MGD		

OFFICIAL USE ONLY (effluent guidelines sub-categories)

CONTINUED FROM THE FRONT

C. Except for storm runoff, leaks, or spills, are any of the discharges described in Items II-A or B intermittent or seasonal?  
 YES (complete the following table)  NO (go to Section III)

1. OUTFALL NUMBER (list)	2. OPERATION(S) CONTRIBUTING FLOW (list)	3. FREQUENCY		4. FLOW				C. DURATION (in days)
		a. DAYS PER WEEK (specify average)	b. MONTHS PER YEAR (specify average)	a. FLOW RATE (in mgd)		B. TOTAL VOLUME (specify with units)		
				1. LONG TERM AVERAGE	2. MAXIMUM DAILY	1. LONG TERM AVERAGE	2. MAXIMUM DAILY	
003B	U1 & U2 Boiler Tube Water Side Chemical Cleaning Wastes	0.01	0.3	0.075	0.15	150,000 gal	150,000 gal	2
005	U1 Screenhouse Maintenance Sumps	0.2	0.5	0.006	0.2	6,500 gal	72,000 gal	24
	U2 Screenhouse Maintenance Sumps	0.1	1	0.11	0.2	65,000 gal	188,000 gal	7

III. PRODUCTION

A. Does an effluent guideline limitation promulgated by EPA under Section 304 of the Clean Water Act apply to your facility?  
 YES (complete Item III-B)  NO (go to Section IV)

B. Are the limitations in the applicable effluent guideline expressed in terms of production (or other measure of operation)?  
 YES (complete Item III-C)  NO (go to Section II)

C. If you answered "yes" to Item III-B, list the quantity which represents an actual measurement of your level of production, expressed in the terms and units used in the applicable effluent guideline, and indicate the affected outfalls.

1. AVERAGE DAILY PRODUCTION			2. AFFECTED OUTFALLS (list outfall numbers)
a. QUANTITY PER DAY	b. UNITS OF MEASURE	c. OPERATION, PRODUCT, MATERIAL, ETC. (specify)	

IV. IMPROVEMENTS

A. Are you now required by any Federal, State or local authority to meet any implementation schedule for the construction, upgrading or operations of wastewater treatment equipment or practices or any other environmental programs which may affect the discharges described in this application? This includes, but is not limited to, permit conditions, administrative or enforcement orders, enforcement compliance schedule letters, stipulations, court orders, and grant or loan conditions.  
 YES (complete the following table)  NO (go to Item IV-B)

1. IDENTIFICATION OF CONDITION, AGREEMENT, ETC.	2. AFFECTED OUTFALLS		3. BRIEF DESCRIPTION OF PROJECT	4. FINAL COMPLIANCE DATE	
	a. NO.	b. SOURCE OF DISCHARGE		a. REQUIRED	b. PROJECTED
NH State law (RSA 125-0:11-18) requires PSNH to install a wet flue gas desulfurization system (scrubber technology) at Merrimack Station and to have it operational no later than July 1, 2013.	003A	Scrubber wastewater treatment system	The Clean Air Project is underway at Merrimack Station to install scrubber technology. A new dedicated wastewater treatment system (WWTs) is required to treat the water blowdown from the scrubber. Following treatment, the relatively small flow of 0.05 mgd will discharge to the existing treatment pond which maintains an average flow of 5.3 mgd. *The February 1, 2011 projected date (IV.A. Column 4.b.) is for the WWTs only, and not the scrubber system or any other component or system.	July 1, 2013	February 1, 2011*

B. OPTIONAL: You may attach additional sheets describing any additional water pollution control programs (or other environmental projects which may affect your discharges) you now have underway or which you plan. Indicate whether each program is now underway or planned, and indicate your actual or planned schedules for construction.

MARK "X" IF DESCRIPTION OF ADDITIONAL CONTROL PROGRAMS IS ATTACHED

CONTINUED FROM PAGE 2

**V. INTAKE AND EFFLUENT CHARACTERISTICS**

A, B, & C: See instructions before proceeding – Complete one set of tables for each outfall – Annotate the outfall number in the space provided.  
 NOTE: Tables V-A, V-B, and V-C are included on separate sheets numbered V-1 through V-9.

D. Use the space below to list any of the pollutants listed in Table 2c-3 of the instructions, which you know or have reason to believe is discharged or may be discharged from any outfall. For every pollutant you list, briefly describe the reasons you believe it to be present and report any analytical data in your possession.

1. POLLUTANT	2. SOURCE	1. POLLUTANT	2. SOURCE
Monoethyl amine (MEA)	Laboratory personnel use 33% monoethyl amine as a reagent to increase the pH of samples in the station sodium analyzers. Total use is about 2 gallons per year. Samples drain to the neutralizer and through the wastewater treatment system. There is no analytical data specific to MEA, however it is certainly below the detection limit upon discharge.		

**VI. POTENTIAL DISCHARGES NOT COVERED BY ANALYSIS**

Is any pollutant listed in Item V-C a substance or a component of a substance which you currently use or manufacture as an intermediate or final product or byproduct?

YES (list all such pollutants below)

NO (go to Item VI-B)

Empty space for listing pollutants not covered by analysis.

**VII. BIOLOGICAL TOXICITY TESTING DATA**

Do you have any knowledge or reason to believe that any biological test for acute or chronic toxicity has been made on any of your discharges or on a receiving water in relation to your discharge within the last 3 years?

YES (identify the test(s) and describe their purposes below)

NO (go to Section VIII)

*(This area is blank as the respondent selected "NO")*

**VIII. CONTRACT ANALYSIS INFORMATION**

Were any of the analyses reported in Item V performed by a contract laboratory or consulting firm?

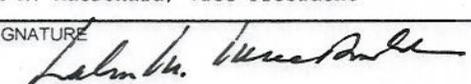
YES (list the name, address, and telephone number of, and pollutants analyzed by, each such laboratory or firm below)

NO (go to Section IX)

A. NAME	B. ADDRESS	C. TELEPHONE (area code & no.)	D. POLLUTANTS ANALYZED (list)
Eastern Analytical, Inc.	25 Chenell Drive, Concord, NH	603-228-0525	All
Frontier Geosciences, Inc.	414 Pontius Ave. North, Seattle, WA	206-622-6960	Metals (Be, Cr, Zn, Ag, Cd, Sb, Hg, Tl, Pb, Se, As, Al, Cu)

**IX. CERTIFICATION**

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

A. NAME & OFFICIAL TITLE (type or print) John M. MacDonald, Vice President	B. PHONE NO. (area code & no.) (603) 634-2236
C. SIGNATURE 	D. DATE SIGNED May 5, 2010

### OUTFALL 003A

This outfall represents the routine, day-to-day, treatment pond discharge which consists primarily of six main inflows:

1. The slag sluice tank overflow for Unit 1 which also includes Unit 1 boiler blowdown, station roof drains, the north yard drains and initial boiler drains.
2. The slag sluice tank overflow for Unit 2 which includes some storm drains including the water wash truck pad when not in use.
3. The culvert from the settling pond for the slag sluice water for both units.
4. The wastewater treatment plant effluent which consists primarily of demineralizer and polisher regeneration wastes, floor and equipment drains, sampling-related drains, nonchemical metal cleaning wastes and stormwater runoff.
5. The new wastewater treatment system (WWTS) effluent which consists of blowdown from the flue gas desulfurization system (FGD).
6. Nonpoint and point source stormwater runoff, principally from the southwest yard drain system.

As required by the existing permit, PSNH completed the separation of the nearby wetlands from the Merrimack Station treatment operations on December 3, 1998. Other than slightly reduced flows, there have been no significant effects detected at Outfall 003A/B since the project was completed.

The addition of the FGD WWTS represents the only other substantial modification to NPDES operations since the 1997 application was submitted. Calculations from the "anti-degradation study" provided by the URS Corporation show that the 50,000 gallon daily addition will have an insignificant effect on water quality due to the high degree of treatment that is being provided. As part of the scrubber system project, PSNH has also committed to reusing over one million gallons of wastewater daily which reduces the overall loading from current levels. The FGD WWTS effluent will be discharged into the roughly 5 million gallons of daily flow in the treatment pond before mixing with the 70 to 275 million gallons per day (mgd) of river water in the cooling canal.

All of the required Part V analytical data is on the attached Form 2C. The application data from a 1996 effluent sample has been supplemented with a second round that was collected in 2006. Much of the metals data reported were collected in 2009/2010 to support the URS water quality study, and some intake data collected from the river are also included. Based on historical data and wastewater recycling, PSNH is able to reduce the maximum daily flow from 19.1 to 14.03 mgd, and the average monthly flow from 10.0 to 6.33 mgd. Supplemental information from the study is included with this application to characterize future conditions. In support of the water quality study, PSNH is continuing to provide the NHDES with information to determine the appropriate discharge monitoring parameters.

PLEASE PRINT OR TYPE IN THE UNSHADED AREAS ONLY. You may report some or all of this information on separate sheets (use the same format) instead of completing these pages. SEE INSTRUCTIONS.

EPA I.D. NUMBER (copy from Item 1 of Form 1)  
NHD 000 791 509

V. INTAKE AND EFFLUENT CHARACTERISTICS (continued from page 3 of Form 2-C)

OUTFALL NO.  
003A

PART A - You must provide the results of at least one analysis for every pollutant in this table. Complete one table for each outfall. See instructions for additional details.

1. POLLUTANT	2. EFFLUENT				3. UNITS (specify if blank)				4. INTAKE (optional)			
	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVRG. VALUE (if available)		d. NO. OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO. OF ANALYSES
	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
a. Biochemical Oxygen Demand (BOD)	<6	-					2	mg/l				
b. Chemical Oxygen Demand (COD)	30	3511					2	mg/l	1bs			
c. Total Organic Carbon (TOC)	6.3	737					2	mg/l	1bs			
d. Total Suspended Solids (TSS)	9.0	1053	6.1	322			12	mg/l	1bs			
e. Ammonia (as N)	2.6	304					6	mg/l	1bs	0.08		4
f. Flow	VALUE	14.03	VALUE	6.33	VALUE		NA	mgd	-	VALUE		
g. Temperature (winter)	VALUE	6.0	VALUE	NA	VALUE		2	°C		VALUE		
h. Temperature (summer)	VALUE	24.2	VALUE	NA	VALUE		4	°C		VALUE		
i. pH	MINIMUM 4.2	MAXIMUM 9.4	MINIMUM 4.2	MAXIMUM 9.4			365	STANDARD UNITS				

PART B - Mark "X" in column 2-a for each pollutant you know or have reason to believe is present. Mark "X" in column 2-b for each pollutant you believe to be absent. If you mark column 2a for any pollutant which is limited either directly, or indirectly but expressly, in an effluent limitations guideline, you must provide the results of at least one analysis for that pollutant. For other pollutants for which you mark column 2a, you must provide quantitative data or an explanation of their presence in your discharge. Complete one table for each outfall. See the instructions for additional details and requirements.

1. POLLUTANT AND CAS NO. (if available)	2. MARK "X"				3. EFFLUENT				4. UNITS				5. INTAKE (optional)			
	a. BELIEVED PRESENT	b. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVRG. VALUE (if available)		d. NO. OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO. OF ANALYSES		
			(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS			
a. Bromide (24959-67-9)		X	<0.1	-					2	mg/l						
b. Chlorine, Total Residual		X	<0.05	-					2	mg/l						
c. Color	X		50	-					2	PtCo						
d. Fecal Coliform	X		70	-					2	MPN/0.1L						
e. Fluoride (16984-48-8)	X		0.2	23					2	mg/l	1bs					
f. Nitrate-Nitrite (as N)		X	<0.5	-					6	mg/l		<0.5		4		

ITEM V-B CONTINUED FROM FRONT

1. POLLUTANT AND CAS NO. (if available)	2. MARK "X"		3. EFFLUENT				4. UNITS		5. INTAKE (optional)		
	a. BELIEVED PRESENT	b. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE		d. NO. OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE	b. NO. OF ANALYSES
			(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS					
g. Nitrogen, Total Organic (as N)		X	<0.5	-			2	mg/l			
h. Oil and Grease	X		<5.0	-			12	mg/l			
i. Phosphorus (as P), Total (7723-14-0)		X	<0.05	-			2	mg/l			
j. Radioactivity											
(1) Alpha, Total		X									
(2) Beta, Total		X									
(3) Radium, Total		X									
(4) Radium 226, Total		X									
k. Sulfate (as SO <sub>4</sub> ) (14808-79-8)	X		140	8.19			2	mg/l	ton		
l. Sulfide (as S)		X	<0.1	-			2	mg/l			
m. Sulfite (as SO <sub>3</sub> ) (14265-45-3)		X	<2	-			2	mg/l			
n. Surfactants		X	<0.1	-			1	mg/l			
o. Aluminum, Total (7429-90-5)	X		0.65	76.1			6	mg/l	lbs	0.049	4
p. Barium, Total (7440-39-3)	X		0.013	1.52			2	mg/l	lbs		
q. Boron, Total (7440-42-8)	X		0.32	37.5			2	mg/l	lbs		
r. Cobalt, Total (7440-48-4)	X		<0.001	-			2	mg/l			
s. Iron, Total (7439-89-6)	X		1.0	117	0.7	37	50	mg/l	lbs	0.3	4
t. Magnesium, Total (7439-95-4)	X		2.7	316			2	mg/l	lbs		
u. Molybdenum, Total (7439-98-7)	X		0.23	27			2	mg/l	lbs		
v. Manganese, Total (7439-96-5)	X		0.055	6.44			6	mg/l	lbs	<0.024	4
w. Tin, Total (7440-31-5)	X		<0.01	-			2	mg/l			
x. Titanium, Total (7440-32-6)	X		0.025	2.93			2	mg/l	lbs		

CONTINUED FROM PAGE 3 OF FORM 2-C

EPA I.D. NUMBER (copy from Item 1 of Form 1) **NHD 000 791 509**  
 OUTFALL NUMBER **003A**

**PART C.** If you are a primary industry and this outfall contains process wastewater, refer to Table 2c-2 in the instructions to determine which of the GC/MS fractions you must test for. Mark "X" in column 2-a for all such GC/MS fractions that apply to your industry and for ALL toxic metals, cyanides, and total phenols. If you are not required to mark column 2-a (secondary industries, nonprocess wastewater outfalls, and nonrequired GC/MS fractions), mark "X" in column 2-b for each pollutant you know or have reason to believe is present. Mark "X" in column 2-c for each pollutant you believe is absent. If you mark column 2a for any pollutant, you must provide the results of at least one analysis for that pollutant. If you mark column 2b for any pollutant, you must provide the results of at least one analysis for that pollutant. If you know or have reason to believe it will be discharged in concentrations of 10 ppb or greater, if you mark column 2b for acrolein, acrylonitrile, 2,4 dinitrophenol, or 2-methyl-4, 6 dinitrophenol, you must provide the results of at least one analysis for each of these pollutants which you know or have reason to believe that you discharge in concentrations of 100 ppb or greater. Otherwise, for pollutants for which you mark column 2b, you must either submit at least one analysis or briefly describe the reasons the pollutant is expected to be discharged. Note that there are 7 pages to this part; please review each carefully. Complete one table (all 7 pages) for each outfall. See instructions for additional details and requirements.

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK "X"			3. EFFLUENT				4. UNITS		5. INTAKE (optional)			
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE (1) CONCENTRATION	b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVRG. VALUE (if available)	d. NO. OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO. OF ANALYSES
					(1) CONCENTRATION	(2) MASS					(1) CONCENTRATION	(2) MASS	
METALS, CYANIDE, AND TOTAL PHENOLS													
1M. Antimony, Total (7440-36-0)	X			0.158					ug/l	lbs	0.047		4
2M. Arsenic, Total (7440-38-2)	X			1.9					ug/l	lbs	0.360		4
3M. Beryllium, Total (7440-41-7)	X			0.131					ug/l	lbs	0.060		4
4M. Cadmium, Total (7440-43-9)	X			0.192					ug/l	lbs	0.021		4
5M. Chromium, Total (7440-47-3)	X			1.89					ug/l	lbs	0.227		4
6M. Copper, Total (7440-50-8)	X			0.05	0.01	0.53			mg/l	lbs	0.0005		4
7M. Lead, Total (7439-92-1)	X			1.07					ug/l	lbs	0.132		4
8M. Mercury, Total (7439-97-6)	X			0.0061					ug/l	lbs	0.001		4
9M. Nickel, Total (7440-02-0)	X			2.2					ug/l	lbs	0.276		4
10M. Selenium, Total (7782-49-2)	X			1.5					ug/l	lbs	0.525		4
11M. Silver, Total (7440-22-4)	X			<0.04					ug/l	lbs	0.024		4
12M. Thallium, Total (7440-28-0)	X			0.289					ug/l	lbs	0.009		4
13M. Zinc, Total (7440-66-6)	X			19					ug/l	lbs	2.04		4
14M. Cyanide, Total (57-12-5)	X			<0.02					mg/l				
15M. Phenols, Total	X			<0.05					mg/l				
DIOXIN													
2,3,7,8-Tetra-chlorodibenzo-P-Dioxin (1784-01-6)			X										

DESCRIBE RESULTS

CONTINUED FROM THE FRONT

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK "X"			3. EFFLUENT				4. UNITS		5. INTAKE (optional)		b. NO. OF ANALYSES	
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE (1) CONCENTRATION	b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	c. LONG TERM AVRG. VALUE (if available)		d. NO. OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		
						(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION		(2) MASS
GC/MS FRACTION - VOLATILE COMPOUNDS													
1V. Acrolein (107-02-8)	X			<20					2	ug/l			
2V. Acrylonitrile (107-13-1)	X			<20					2	ug/l			
3V. Benzene (71-43-2)	X			<1					2	ug/l			
4V. Bis (Chloromethyl) Ether (542-88-1)				TESTING IS NO LONGER REQUIRED									
5V. Bromoform (75-25-2)	X			<2					2	ug/l			
6V. Carbon Tetrachloride (56-23-5)	X			<2					2	ug/l			
7V. Chlorobenzene (108-90-7)	X			<1					2	ug/l			
8V. Chlorobromomethane (124-48-1)	X			<2					2	ug/l			
9V. Chloroethane (75-00-3)	X			<5					2	ug/l			
10V. 2-Chloroethylvinyl Ether (110-75-8)	X			<2					2	ug/l			
11V. Chloroform (67-66-3)	X			<2					2	ug/l			
12V. Dichlorobromomethane (75-27-4)	X			<2					2	ug/l			
13V. Dichlorodifluoromethane (75-71-8)				TESTING IS NO LONGER REQUIRED									
14V. 1,1-Dichloroethane (75-34-3)	X			<2					2	ug/l			
15V. 1,2-Dichloroethane (107-06-2)	X			<2					2	ug/l			
16V. 1,1-Dichloroethylene (75-35-4)	X			<1					2	ug/l			
17V. 1,2-Dichloropropane (78-87-5)	X			<2					2	ug/l			
18V. 1,3-Dichloropropylene (542-75-6)	X			<2					2	ug/l			
19V. Ethylbenzene (100-41-4)	X			<1					2	ug/l			
20V. Methyl Bromide (74-83-9)	X			<2					2	ug/l			
21V. Methyl Chloride (74-87-3)	X			<5					2	ug/l			

CONTINUED FROM PAGE V-4

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK "X"			3. EFFLUENT			4. UNITS			5. INTAKE (optional)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE		d. NO. OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE	
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS
GC/MS FRACTION - VOLATILE COMPOUNDS (continued)												
22V. Methylene Chloride (75-09-2)	X			<2				2	ug/l			
23V. 1,1,2,2-Tetrachloroethane (79-34-5)	X			<2				2	ug/l			
24V. Tetrachloroethylene (127-18-4)	X			<2				2	ug/l			
25V. Toluene (108-88-3)	X			<1				2	ug/l			
26V. 1,2-Trans-Dichloroethylene (156-60-5)	X			<2				2	ug/l			
27V. 1,1,1-Trichloroethane (71-55-6)	X			<2				2	ug/l			
28V. 1,1,2-Trichloroethane (79-00-5)	X			<2				2	ug/l			
29V. Trichloroethylene (79-01-6)	X			<2				2	ug/l			
30V. Trichlorofluoromethane (75-69-4)				TESTING IS NO LONGER REQUIRED								
31V. Vinyl Chloride (75-01-4)	X			<2				2	ug/l			
GC/MS FRACTION - ACID COMPOUNDS												
1A. 2-Chlorophenol (95-57-8)	X			<1				2	ug/l			
2A. 2,4-Dichlorophenol (120-83-2)	X			<1				2	ug/l			
3A. 2,4-Dimethylphenol (105-67-9)	X			<1				2	ug/l			
4A. 4,6-Dinitro-O-Cresol (534-52-1)	X			<5				2	ug/l			
5A. 2,4-Dinitrophenol (51-28-5)	X			<5				2	ug/l			
6A. 2-Nitrophenol (88-75-5)	X			<1				2	ug/l			
7A. 4-Nitrophenol (100-02-7)	X			<5				2	ug/l			
8A. P-Chloro-M-Cresol (59-50-7)	X			<1				2	ug/l			
9A. Pentachlorophenol (87-86-5)	X			<5				2	ug/l			
10A. Phenol (108-95-2)	X			<1				2	ug/l			
11A. 2,4,6-Trichlorophenol (88-05-2)	X			<1				2	ug/l			

CONTINUED FROM THE FRONT

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X'			3. EFFLUENT				4. UNITS		5. INTAKE (optional)				
	a. TESTING REQUIRED (if available)	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE (1) CONCENTRATION	b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVRG. VALUE (if available)		d. NO. OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO. OF ANALYSES
					(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION - BASE/NEUTRAL COMPOUNDS														
1B. Acenaphthene (83-32-9)	X			<1					2	ug/l				
2B. Acenaphthylene (208-96-6)	X			<1					2	ug/l				
3B. Anthracene (120-12-7)	X			<1					2	ug/l				
4B. Benzidine (92-87-5)	X			<5					2	ug/l				
5B. Benzo (a) Anthracene (56-55-3)	X			<1					2	ug/l				
6B. Benzo (a) Pyrene (50-32-8)	X			<1					2	ug/l				
7B. 3,4-Benzo-fluoranthene (205-99-2)	X			<1					2	ug/l				
8B. Benzo (ghi) Perylene (191-24-2)	X			<1					2	ug/l				
9B. Benzo (k) Fluoranthene (207-08-9)	X			<1					2	ug/l				
10B. Bis (2-(2-Chloroethyl) Methane (111-91-1)	X			<1					2	ug/l				
11B. Bis (2-(2-Chloroethyl) Ether (111-44-4)	X			<1					2	ug/l				
12B. Bis (2-Chloroisopropyl) Ether (102-80-1)	X			<1					2	ug/l				
13B. Bis (2-Ethylhexyl) Phthalate (117-81-7)	X			<5					2	ug/l				
14B. 4-Bromophenyl Phenyl Ether (101-55-3)	X			<1					2	ug/l				
15B. Butyl Benzyl Phthalate (85-68-7)	X			<1					2	ug/l				
16B. 2-Chloronaphthalene (91-58-7)	X			<1					2	ug/l				
17B. 4-Chlorophenyl Phenyl Ether (7005-72-3)	X			<1					2	ug/l				
18B. Chrysene (218-01-9)	X			<1					2	ug/l				
19B. Dibenzo (a,h) Anthracene (53-70-3)	X			<1					2	ug/l				
20B. 1,2-Dichlorobenzene (95-50-1)	X			<1					2	ug/l				
21B. 1,3-Dichlorobenzene (541-73-1)	X			<1					2	ug/l				

CONTINUED FROM PAGE V-6

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK "X"			3. EFFLUENT				4. UNITS		5. INTAKE (optional)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE (1) CONCENTRATION	b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	c. LONG TERM AVRG. VALUE (if available) (1) CONCENTRATION		d. NO. OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	b. NO. OF ANALYSES
	(if available)	(2) MASS	(2) MASS	(2) MASS	(2) MASS	(2) MASS	(2) MASS	(1)	(2) MASS	(1)	(2) MASS	
GC/MS FRACTION - BASENEUTRAL COMPOUNDS (continued)												
22B. 1,4-Dichloro-benzene (106-46-7)	X			<1				2	ug/l			
23B. 3,3-Dichloro-benzidine (91-94-1)	X			<1				2	ug/l			
24B. Diethyl Phthalate (84-66-2)	X			<2				2	ug/l			
25B. Dimethyl Phthalate (131-11-3)	X			<1				2	ug/l			
26B. Di-N-Butyl Phthalate (84-74-2)	X			<5				2	ug/l			
27B. 2,4-Dinitro-toluene (121-14-2)	X			<1				2	ug/l			
28B. 2,6-Dinitro-toluene (606-20-2)	X			<1				2	ug/l			
29B. Di-N-Octyl Phthalate (117-84-0)	X			<1				2	ug/l			
30B. 1,2-Diphenyl-hydrazine (as Azobenzene) (122-86-7)	X			<1				2	ug/l			
31B. Fluoranthene (206-44-0)	X			<1				2	ug/l			
32B. Fluorene (86-73-7)	X			<1				2	ug/l			
33B. Hexachloro-benzene (118-74-1)	X			<1				2	ug/l			
34B. Hexachloro-butadiene (87-68-3)	X			<1				2	ug/l			
35B. Hexachloro-cyclopentadiene (77-47-4)	X			<5				2	ug/l			
36B. Hexachloro-ethane (67-72-1)	X			<1				2	ug/l			
37B. Indeno (1,2,3-cd) Pyrene (193-39-5)	X			<1				2	ug/l			
38B. Isophorone (78-59-1)	X			<1				2	ug/l			
39B. Naphthalene (91-20-3)	X			<1				2	ug/l			
40B. Nitrobenzene (98-95-3)	X			<1				2	ug/l			
41B. N-Nitrosodimethylamine (62-75-9)	X			<1				2	ug/l			
42B. N-Nitrosodi-N-Propylamine (621-64-7)	X			<1				2	ug/l			

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CONTINUE ON REVERSE

CONTINUED FROM THE FRONT

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X'			3. EFFLUENT				4. UNITS		5. INTAKE (optional)		b. NO. OF ANALYSES		
	a. TESTING REQUIRED (if available)	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVRG. VALUE (if available)	d. NO. OF ANALYSES	a. CONCENTRATION	b. MASS		a. LONG TERM AVERAGE VALUE	
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS						(1) CONCENTRATION	(2) MASS
GC/MS FRACTION - BASE/NEUTRAL COMPOUNDS (continued)														
43B. N-Nitro-sodiphenylamine (86-30-6)	X			<1					2	ug/l				
44B. Phenanthrene (85-01-8)	X			<1					2	ug/l				
45B. Pyrene (129-00-0)	X			<1					2	ug/l				
46B. 1,2,4-Tri-chlorobenzene (120-82-1)	X			<1					2	ug/l				
GC/MS FRACTION - PESTICIDES														
1P. Aldrin (309-00-2)			X											
2P. α-BHC (319-84-6)			X											
3P. β-BHC (319-85-7)			X											
4P. γ-BHC (58-89-9)			X											
5P. δ-BHC (319-86-8)			X											
6P. Chlordane (57-74-9)			X											
7P. 4,4'-DDT (50-29-3)			X											
8P. 4,4'-DDE (72-55-9)			X											
9P. 4,4'-DDD (72-54-8)			X											
10P. Dieldrin (60-57-1)			X											
11P. α-Endosulfan (115-29-7)			X											
12P. β-Endosulfan (115-29-7)			X											
13P. Endosulfan Sulfate (1031-07-8)			X											
14P. Endrin (72-20-8)			X											
15P. Endrin Aldehyde (7421-93-4)			X											
16P. Heptachlor (76-44-8)			X											

EPA I.D. NUMBER (copy from Item 1 of Form 1) **OUTFALL NUMBER**  
 NHD 000 791 509 **003A**

CONTINUED FROM PAGE V-8

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK "X"		3. EFFLUENT		4. UNITS		5. INTAKE (optional)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE (1) CONCENTRATION	b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	c. LONG TERM AVRG. VALUE (if available) (1) CONCENTRATION	d. NO. OF ANALYSES	a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	b. NO. OF ANALYSES
GC/MS FRACTION - PESTICIDES (continued)									
17P. Heptachlor Epoxide (1024-57-3)			X						
18P. PCB-1242 (53469-21-9)			X						
19P. PCB-1254 (11097-69-1)			X						
20P. PCB-1221 (11104-28-2)			X						
21P. PCB-1232 (11141-16-5)			X						
22P. PCB-1248 (12672-29-6)			X						
23P. PCB-1260 (11096-82-5)			X						
24P. PCB-1016 (12674-11-2)			X						
25P. Toxaphene (8001-35-2)			X						

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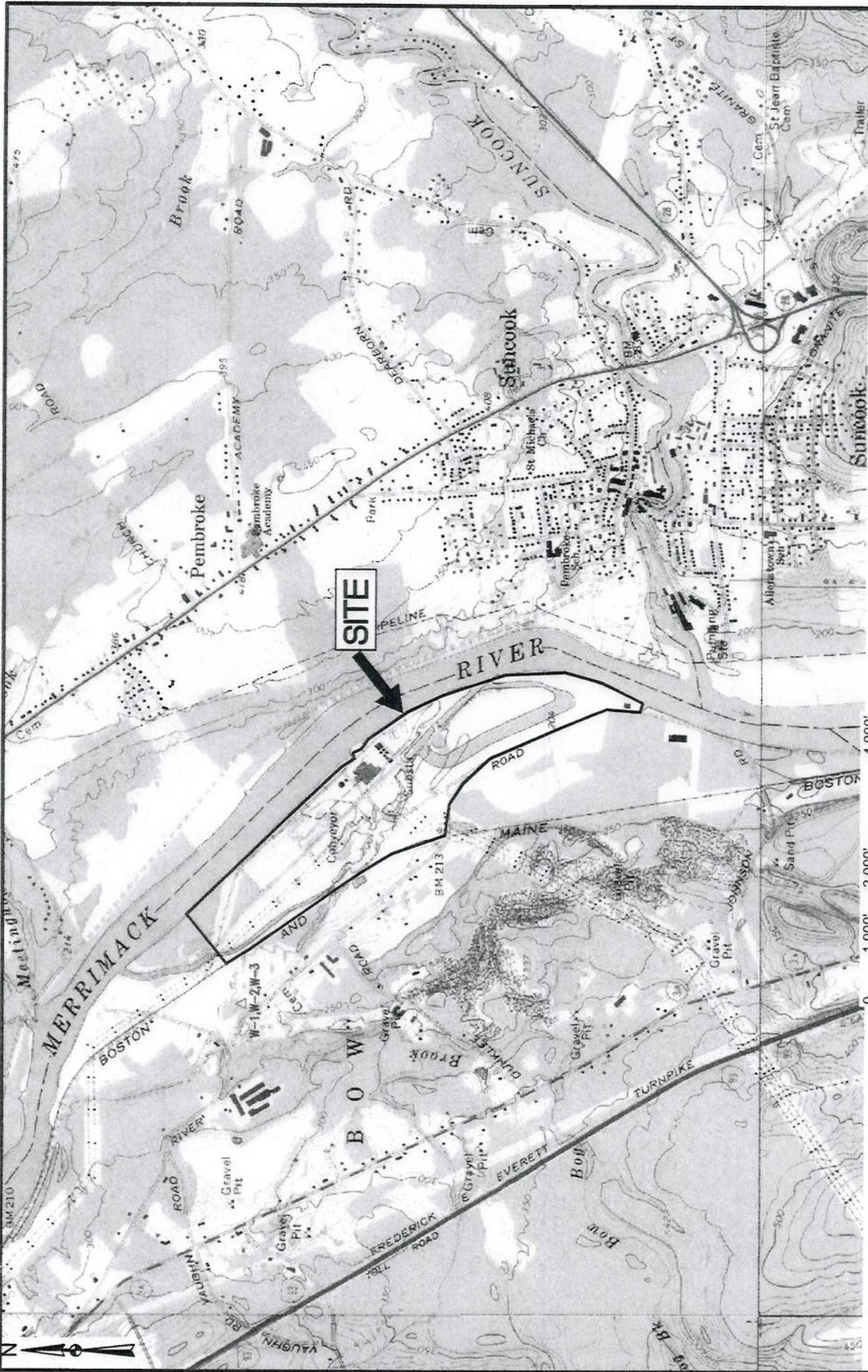
PROJECTED MAXIMUM METALS DAILY LOADING

Form 2C describes conditions that exist at Outfall 003A today. Under the direction of DES, PSNH commissioned a study by the URS Corporation (see Attachment 2 for the Executive Summary) to calculate the effect of adding the discharge from the flue gas desulfurization system (FGD) wastewater treatment system (WWTS). In summary, the study showed that for the various pollutants there is no increase in pollutant loading or that the increase is insignificant per Env-Wq 1708.09. The following tables are provided to describe the projected daily maximum conditions that will exist at Outfall 003A once the FGD WWTS is operational (at 13.0 mgd).

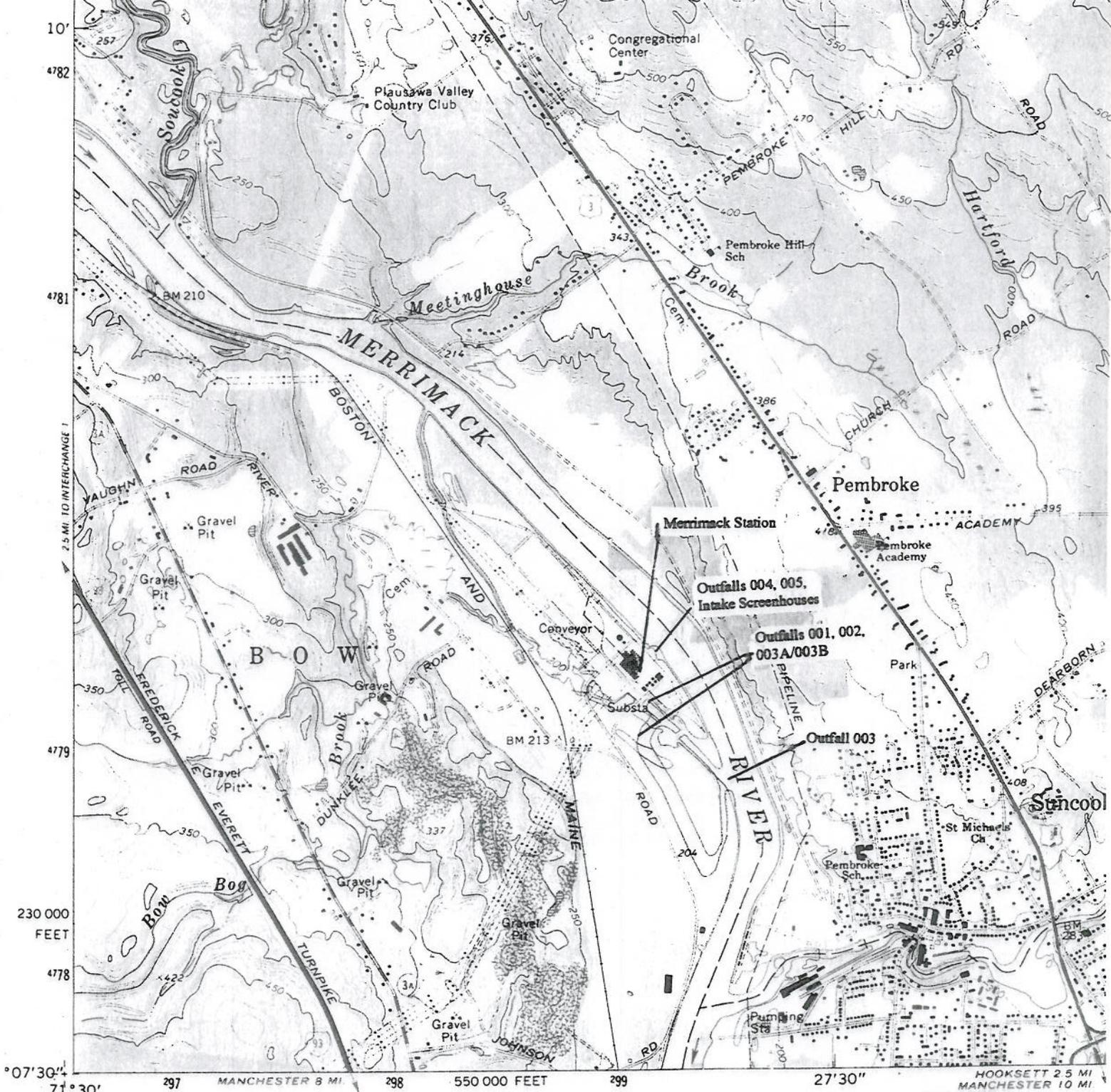
	MAXIMUM DAILY	AVERAGE MONTHLY
FLOW (mgd)	13.00	5.30

POLLUTANT	MAXIMUM DAILY VALUE	
	CONCENTRATION (mg/l)	MASS (lbs)
Aluminum, Total	0.6629	71.9
Iron, Total	1.00	108
Manganese, Total	0.0832	9.02
Antimony, Total	0.0049	0.531
Arsenic, Total	0.0028	0.30
Beryllium, Total	0.00109	0.118
Cadmium, Total	0.00115	0.125
Chromium, Total	0.0028	0.304
Copper, Total	0.0505	5.5
Lead, Total	0.0020	0.217
Mercury, Total	0.000016	0.0017
Nickel, Total	0.0117	1.27
Selenium, Total	0.058	6.29
Silver, Total	0.0005	0.054
Thallium, Total	0.0060	0.651
Zinc, Total	0.0198	2.15

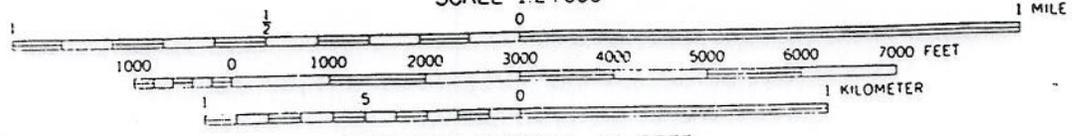
The FGD WWTS has an expected flow of 50,000 gallons per day, a relatively low rate by most standards. Once treated, the effluent mixes in the existing treatment pond which has an average daily inflow of roughly six million gallons per day (mgd). The pond discharges to the cooling canal which is typically flowing water from 70 to 275 mgd, and then ultimately to the Merrimack River. Following the start of construction, a substantial design change was implemented to allow more than 1 mgd of wastewater to be reused, further reducing the pollutant loading. The URS analysis shows that the effect of the FGD WWTS on the Merrimack River is insignificant.



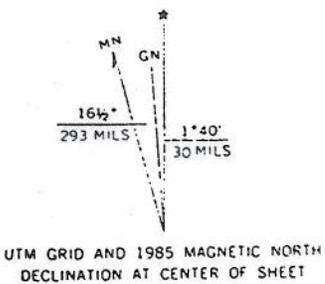
<b>PREPARED BY:</b> <b>GZA GeoEnvironmental, Inc.</b> Engineers and Scientists 380 HARVEY ROAD WINDYBROOK NEW HAMPSHIRE 03103 (603) 233-3325	<b>LOCUS PLAN</b>		<b>DATE:</b> MARCH 2010	<b>FIGURE:</b> 1
			<b>PROJ. MGR.:</b> KOB	<b>DESIGNED BY:</b> DSJ
<b>PREPARED FOR:</b> <b>PUBLIC SERVICE OF NEW HAMPSHIRE</b>	<b>PUBLIC SERVICE OF NEW HAMPSHIRE</b> <b>MERRIMACK STATION</b> <b>97 RIVER ROAD, BOW NEW HAMPSHIRE 03304</b>		<b>REVIEWED BY:</b> RAB	<b>REVISION NO.:</b>
			<b>DRAWN BY:</b> MA	<b>SHEET NO.:</b>
			<b>CHECKED BY:</b> KOB	
			<b>SCALE:</b> AS SHOWN	



SCALE 1:24 000



CONTOUR INTERVAL 10 FEET  
NATIONAL GEODETIC VERTICAL DATUM OF 1929



**Location Map**  
**Merrimack Station**  
**Bow, N.H.**

**SUNCOOK, N. H.**  
SW/4 SUNCOOK 15' QUADRANGLE  
43071-B4-TF-024  
1967  
PHOTOREVISED 1985  
DMA 6770 III NW-SERIES V812

Revisions shown in purple and woodland compiled from aerial photographs taken 1982 and other sources. This information not field checked. Map edited 1985