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**STORMWATER MANAGEMENT SYSTEM  
INSPECTION AND MAINTENANCE PLAN**

Proposed Unutil Facility  
357 Electric Avenue  
Lunenburg, Massachusetts

Prepared for:

Unutil  
Fitchburg Gas and Electric Light Company  
6 Liberty Lane West  
Hampton, NH 03842

Date: November 20, 2015  
Revised: January 11, 2016

The proposed Unutil Facility site has been designed to function properly provided that routine maintenance is performed. Maintenance of the parking area, driveways, catch basin, vegetated filter strip, stone check dams and grass channels are required to ensure that sedimentation and pollution is controlled and storm water retention capacity is sustained. To ensure the proper functioning of these facilities the following maintenance practices will be used:

Owner and Party Responsible for Maintenance:

Unutil  
Fitchburg Gas and Electric Light Company  
6 Liberty Lane West  
Hampton, NH 03842  
Office: 603-772-0775

The owner shall develop a chart with a list of the following Best Management Practices (BMP's) with the chart listing the maintenance requirement, frequency of maintenance and the date the maintenance was performed.

## PART 1 - INSPECTION AND MAINTENANCE (DURING CONSTRUCTION)

- A. It shall be the responsibility of the General Contractor to ensure that the inspection, maintenance and protection of the stormwater management system (defined in Section 2a below) is performed during the construction phase of the project and up to final stabilization of the site (refer to attached plan).
- B. The on-site stormwater management system shall be protected from the introduction of sediments and debris both during installation and throughout the duration of site construction in order to provide a fully functioning and long lasting system upon completion of construction.
- C. The following steps shall be implemented, at a minimum, to protect the stormwater management system during construction:
  - 1. During construction of the grass channels the open excavation shall be protected from on-site sediments from storm runoff and snow melt by providing a line of erosion controls consisting of haybales or silt fence or a combination of both. In the event that the excavation is compromised by sediment, the sediments shall be removed and the bottom of the excavation restored.
  - 2. An inspection of the stormwater management system shall be conducted by the General Contractor weekly as well as during and after all rainstorms until the completion of construction. In case of any noted introduction of sediments into the system, the General Contractor shall immediately remove said sediments and take any necessary steps to limit further introduction of sediments and notify the engineer of any problems involving storm water management systems.
    - a) The stormwater management system shall be defined as the catch basin, drain manhole, vegetated filter strip, stone check dams and grass channels.
    - b) A rainstorm shall be defined by all or one of the following thresholds:
      - i. Any storm in which rain is predicted to last for twelve consecutive hours or more.
      - ii. Any storm for which a flash flood watch or warning is issued.
      - iii. Any single storm predicted to have a cumulative rainfall of greater than one-half inch.
      - iv. Any storm not meeting the previous three thresholds but which would mark a third consecutive day of measurable rainfall.
  - 3. The General Contractor shall also inspect the stormwater management systems at times of significant increase in surface water runoff due to rapid thawing when the risk of sediment migration is significant.
  - 4. All collected/removed sediments shall be removed from the site and disposed of in a legal manner.

## PART 2 - INSPECTION AND MAINTENANCE (POST-CONSTRUCTION)

- A. It shall be the responsibility of the Owner to ensure that the long-term inspection and maintenance of the stormwater management system on-site is performed. The on-site system shall include the following individual components of the stormwater management system: catch basin, drain manhole, vegetated filter strip, stone check dams and grass channels on the approved plans. The Owner shall obtain the services of a qualified Contractor to perform the required inspections and maintenance of the individual components of the stormwater management system on-site, as listed above. All inspections and maintenance of the components of the stormwater management system.
- B. It shall be the responsibility of the Owner to maintain adequate records to demonstrate conformance with this inspection and maintenance plan.
- C. The inspection and maintenance plan for the on-site stormwater management system (as listed in Section A above) shall be carried out by the current owner (project applicant) and by any and all future owners of the site in perpetuity.
- D. The inspection and maintenance plan shall be carried out as outlined below upon completion and final stabilization of the project site:
- E. During the first six months of operation of the facility the stormwater management system shall be inspected a minimum of once per month and after every rainstorm (defined in Part 1 above). A portion of this time period must be in the growing season. As warranted by these inspections maintenance of the system shall be performed including, but not limited to the following:
  - 1. Visual inspection of the catch basin, vegetated filter strip, stone check dams and grass channels to ensure that the system is not backed up and is emptying properly.
- F. After the six month time period above has elapsed, thorough investigations shall be conducted four times a year. Maintenance requirements may be adjusted based upon the results obtained from the first year of operation. As warranted by these inspections maintenance of the system shall be performed including, but not limited to the following:
  - 1. The vegetated filter strip, stone check dams, grass channel and retention basin requires an annual inspection for necessary maintenance (refer to attached plan). This consists of visually inspecting for the accumulation of sediment; obstructions within the dams, filter strip and grass channels. Remove sediments from the stone check dams (replace stone as necessary), filter strip and grass channels. Sediment, which is removed, shall be legally disposed of. The grass channels shall be monitored at several intervals during and after a small and large rainfall event to ensure they are functional.

2. Street sweeping shall be conducted by a high efficiency vacuum sweeper with sweeping scheduled primarily in the spring and fall with a monthly average sweeping in order to achieve 10 percent TSS removal.
3. The Grass channels have been designed to convey up to a 100 year storm event. The grass channel shall be mowed once a month during the growing season. Remove sediments from forebays and grass channels annually. In the spring repair areas of erosion or die off of grasses due to de-icing and revegetate these areas as needed.
4. The vegetated filter strip shall be maintained as follows: Inspect the crushed stone diaphragm (level spreader) for sediment buildup and the filter strip vegetation for signs of erosion, bare spots, and overall health every six months. Mow the grass, remove sediment and reseed bare spots as needed.
5. The transformer storage area is an area with an impervious surface that is protected by a 6 inch berm around the perimeter. A catch basin is located in this area with outlet to the south and a pipe outlet to the west into a 2,000 gallon precast reinforced, waterproof and watertight concrete tank. The outlet pipe to the south will have a petro barrier or similar product installed. The petro barrier is a barrier that is activated when oil is present in the runoff. Once the barrier is activated it swells, therefore blocking the outlet pipe to the south, rising within catch basin structure and flowing into the pipe to the east and backing the runoff into the 2,000 gallon concrete tank for proper containment and then disposal. The petro barrier will be inspected once a month and if it has not been used is replaced once per year per manufacturer recommendations.

## MAINTENANCE LOGS

Maintain a log of all operation and maintenance activities including without limitation inspections, repairs, replacement and disposal (for disposal, the log shall indicate the type of material and disposal location). A copy of the yearly maintenance logs shall be made accessible to the following agencies:

Planning Board  
Ritter Memorial Building  
960 Massachusetts Avenue  
Lunenburg, MA 01462

Department of Environmental Protection  
Central Regional Office  
627 Main Street  
Worcester, MA 01608

**WHITMAN & BINGHAM ASSOCIATES, INC.**  
*Registered Engineers and Land Surveyors*

**CATCH BASIN INSPECTION FORM**

Unitil  
Fitchburg Gas and Electric Light Company  
6 Liberty Lane West  
Hampton, NH 03842

Owner: \_\_\_\_\_

Property Manager: \_\_\_\_\_

Inspected By: \_\_\_\_\_

Date of Inspection: \_\_\_\_\_

Catch Basins Inspected (circle):

Acceptable  Needs Work

Add notes below if structures need work:

Date of cleaning: \_\_\_\_\_ By Whom: \_\_\_\_\_

Date of repair: \_\_\_\_\_ By Whom: \_\_\_\_\_

Below note any further actions that need to be taken as necessary:

**DRAIN MANHOLE INSPECTION FORM**

Unitil  
Fitchburg Gas and Electric Light Company  
6 Liberty Lane West  
Hampton, NH 03842

Owner: \_\_\_\_\_

Property Manager: \_\_\_\_\_

Inspected By: \_\_\_\_\_

Date of Inspection: \_\_\_\_\_

Drain Manhole Inspected (circle):

Acceptable  Needs Work

Add notes below if structures need work:

Date of cleaning: \_\_\_\_\_ By Whom: \_\_\_\_\_

Date of repair: \_\_\_\_\_ By Whom: \_\_\_\_\_

Below note any further actions that need to be taken as necessary:

**STONE CHECK DAMS**

Unitil  
Fitchburg Gas and Electric Light Company  
6 Liberty Lane West  
Hampton, NH 03842

Owner: \_\_\_\_\_

Property Manager: \_\_\_\_\_

Inspected By: \_\_\_\_\_

Date of Inspection: \_\_\_\_\_

Stone Check Dams Inspected (Describe location of dam):

Acceptable  Needs Work

Add notes below if structures need work:

Date of cleaning: \_\_\_\_\_ By Whom: \_\_\_\_\_

Date of repair: \_\_\_\_\_ By Whom: \_\_\_\_\_

Below note any further actions that need to be taken as necessary:

**GRASS CHANNEL INSPECTION FORM**

Unitil  
Fitchburg Gas and Electric Light Company  
6 Liberty Lane West  
Hampton, NH 03842

Owner: \_\_\_\_\_

Property Manager: \_\_\_\_\_

Inspected By: \_\_\_\_\_

Date of Inspection: \_\_\_\_\_

Grass Channel Inspected (Describe location of channel):

Acceptable  Needs Work

Add notes below if structures need work:

Date of cleaning: \_\_\_\_\_ By Whom: \_\_\_\_\_

Date of repair: \_\_\_\_\_ By Whom: \_\_\_\_\_

Below note any further actions that need to be taken as necessary:

**VEGETATED FILTER STRIP INSPECTION FORM**

Unitil  
Fitchburg Gas and Electric Light Company  
6 Liberty Lane West  
Hampton, NH 03842

Owner: \_\_\_\_\_

Property Manager: \_\_\_\_\_

Inspected By: \_\_\_\_\_

Date of Inspection: \_\_\_\_\_

Vegetated Filter Strip Inspected (Describe location of filter strip):

Acceptable  Needs Work

Add notes below if structures need work:

Date of cleaning: \_\_\_\_\_ By Whom: \_\_\_\_\_

Date of repair: \_\_\_\_\_ By Whom: \_\_\_\_\_

Below note any further actions that need to be taken as necessary:

**PETROL BARRIER INSPECTION FORM**

Unitil  
Fitchburg Gas and Electric Light Company  
6 Liberty Lane West  
Hampton, NH 03842

Owner: \_\_\_\_\_

Property Manager: \_\_\_\_\_

Inspected By: \_\_\_\_\_

Date of Inspection: \_\_\_\_\_

Vegetated Filter Strip Inspected (Describe location of filter strip):

Acceptable  Needs Work

Add notes below if structures need work:

Date of cleaning: \_\_\_\_\_ By Whom: \_\_\_\_\_

Date of repair: \_\_\_\_\_ By Whom: \_\_\_\_\_

Below note any further actions that need to be taken as necessary: