

FACILITY: POND - MICROPOL EXTENDED DETENTION (P-1)*



GENERAL MAINTENANCE CARD

Stormwater Coalition of Albany County
swcoalition@albanycounty.com

Funding for This Project Provided by the
New York State Department of Environmental Conservation
Environmental Protection Fund

Prepared By: HAZENAND SAWYER

May 2010

PURPOSE AND FUNCTION

A pond that treats the majority of the water quality volume through extended detention, and incorporates a forebay at the inlet and a micropool at the outlet of the pond to prevent sediment resuspension.

SHORT-TERM MEASURES (FREQUENCY: AT LEAST ONCE A MONTH)

Drainage Issues:

1. Inspect wetland surface area.

- Remove accumulated debris/floatables manually or by other approved means, if required. Dispose of debris off-site.
- Note the existence of excessive algae. If present, refer to Item 2 of Medium-Term Measures.
- Correct any issues relating to flow short-circuiting, if present.

2. Inspect the inlet structure (Location B) and sediment forebay (Location C).

- Remove accumulated debris/floatables near the inlet pipe/sediment forebay/rip-rap apron manually or by other approved means, if required. Dispose of debris off-site.
- Note any cracks in pipe, and headwall/concrete pipe collar.
- Note any displaced field stone. Remove as required.

3. Inspect the outlet structure (riser/barrel at Location E), micropool (Location D), and outfall (Location F).

a. Riser/Barrel

- Manually remove debris accumulated on the trash rack; dispose of debris off-site.
- Note any damage to riser/barrel (see critical maintenance issues box).
- Manually remove debris lodged in reverse-flow pipe; dispose off-site.

b. Micropool

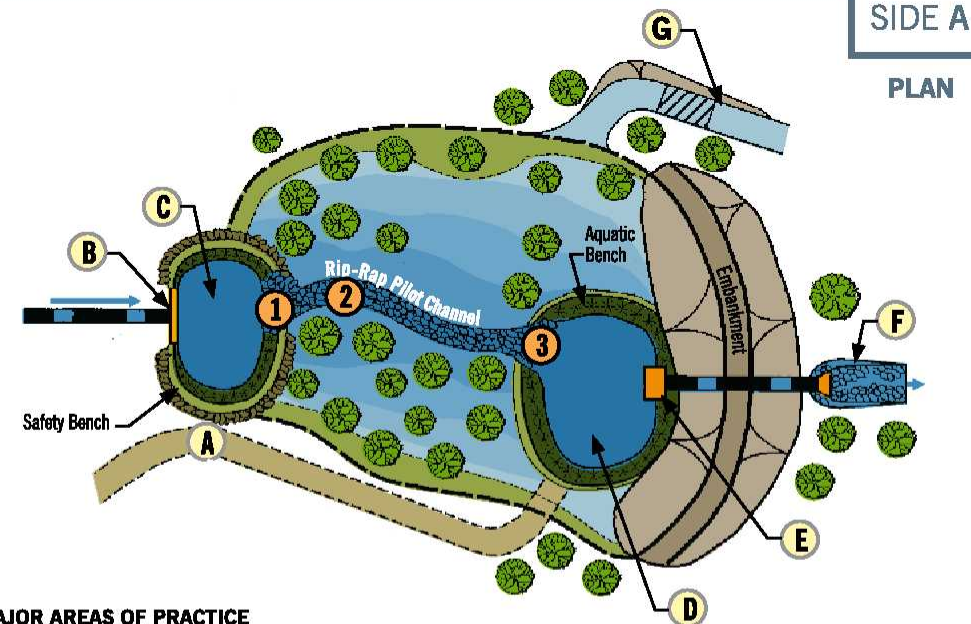
- Remove accumulated debris/floatables near the inlet pipe/sediment forebay/rip-rap apron manually or by other approved means, if required. Dispose of debris off-site.
- Note any displaced stone. Remove as required.

c. Outfall

- Remove accumulated debris/floatables near the outfall spillway approach and discharge channels manually or by other approved means, if required. Dispose of debris off-site.
- Note any displaced field stone. Remove as required.

4. Inspect the emergency spillway (Location G).

- Vegetated emergency spillway channels should be mowed and should not be cut to less than 6 to 8 inches in height.
- The emergency spillway approach and discharge channels should be cleared of brush and other woody growth.
- After any flow has passed through the emergency spillway, the spillway crest (control section) and exit channel should be inspected for erosion. Note location of any eroded areas. Stabilize for future maintenance.



MAJOR AREAS OF PRACTICE

- | | | |
|--------------------------|---------------------|-----------------------|
| A. Maintenance Accessway | D. Micropool | F. Outfall |
| B. Inlet Structure | E. Outlet Structure | G. Emergency Spillway |
| C. Sediment Forebay | | |

5. Inspect adjacent catch basin grates and manhole covers.

- Remove accumulated debris; dispose off-site.

Landscaping Issues:

6. Inspect overall condition of installed vegetation.

- Remove vegetative invasives manually, ensuring root removal, to extent possible. Refer to Appendix 1: New York State Invasive Plants for key species. Note any significant establishment for future removal/maintenance.
- Relocate rodents and/or provide exclusion devices, as required.
- Trim shrubs and cut grass along street frontages, as required.
- Note condition of embankments (see critical maintenance issues box).

Perimeter Treatment (perimeter boundaries not shown in figures):

7. Inspect overall condition of the perimeter treatment items.

- Remove accumulated litter/debris by hand; dispose off-site.
- Promptly notify NYSDEC police regarding illegal dumping.
- Secure gates, guiderails, signs, and boulders, as required.

Critical Maintenance Issues

- 1) Risers and barrels
 - Presence of corrosion
 - Weld joint weakness
 - Valves operational
 - Security key in known location
 - Clogging of barrel outlets
- 2) Embankments
 - No rodents
 - No trees and shrubs
 - No seepage and settlement

Albany County	City of Albany	Town of Bethlehem	City of Cohoes	Town of Colonie	Village of Colonie	Village of Green Island	Town of Guilderland	Village of Menands	Town of New Scotland	Village of Voorheesville	City of Watervliet	SUNY Albany
---------------	----------------	-------------------	----------------	-----------------	--------------------	-------------------------	---------------------	--------------------	----------------------	--------------------------	--------------------	-------------

* Facility abbreviations refer to 2003 NYSDEC Stormwater Design Manual practice labels

MEDIUM-TERM MEASURES (FREQUENCY: ONCE EVERY SIX MONTHS)

Drainage Issues:

1. Measure the sediment depth in sediment forebay and micropool (Locations C & D).
2. If excessive algae persists after large storms, flush wetland surface area with clean water.
3. Inspect the inlet structure (Location B) and sediment forebay (Location C).
 - Repair cracks/damaged stones on headwall, as required.
 - Repair cracks in pipe or concrete pipe collar using a sealant, as required.
 - Replace displaced field stone, as required.
4. Inspect the outlet structure (Location E) and micropool (Location D).
 - Repair cracks/damage to concrete riser box/weir wall and baffle, as required.
 - Replace displaced field stone, as required.
5. Inspect the emergency spillway (Location G).
- Repair and stabilize eroded areas in the exit channel, as necessary.
6. Inspect for unstable embankments.
 - Repair/reinforce unstable embankments using field stone, plantings, etc.

Landscaping Issues:

7. Inspect for plant mortality.
 - Remove dead plants by hand; dispose off-site; replant as required.
 - Trim and remove specified trees, as required.
8. Inspect for significant establishment of invasives and develop an area-wide plan for removal.
9. Inspect for herbivore damage.
 - Repair burrows/damage created by rodents, as required.
 - Introduce alternative plantings, as required.

Perimeter Treatment (perimeter boundaries not shown in figures):

10. Lubricate locks and hinges on gates, as required.
11. Refurbish wood chips on accessway and site perimeter, as required.
12. Inspect and repair damaged sidewalks, fencing, gulderall, and signs, as required.

LONG-TERM MEASURES (FREQUENCY: ONCE EVERY TWO YEARS)

Drainage Issues:

1. Remove sediment from sediment forebay/micropool and adjacent catch basins; "vactoring" recommended.

DEWATERING PROCEDURE AT FOREBAY/MICROPOOL

The forebay/micropool must be dewatered before proceeding with "vactoring" operations.

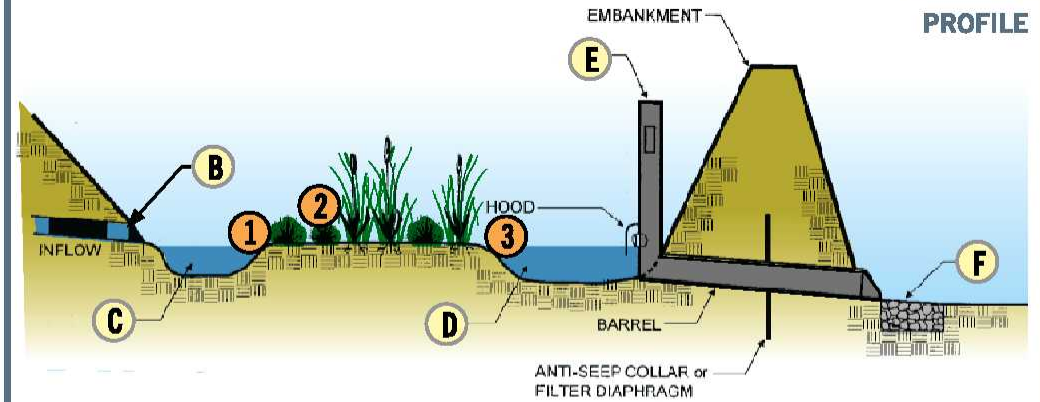
Methodology:

1. Park the "vactor" truck along the maintenance accessway near the inlet (Location A). The boom should be extended in the direction of the forebay/micropool.
2. Ensure clear access for a two-person crew down the slope near the forebay/micropool (Locations C & D).
3. Isolate the forebay/micropool by erecting a sand bag wall perpendicular to the direction of flow at Locations 1 & 3.
4. The sand bag wall should extend up the slopes of the aquatic bench beyond the edge of water to ensure no flow conveyance.
5. Pump out water from the forebay to the riprap channel downstream (Location 2) or in the case of the micropool, to a sediment tank on the other side of the embankment.
6. Proceed with "vactoring" operations.
7. On completion of "vactoring" work, disassemble the sand bag wall manually and remove from site.

"VACTORING" PROCEDURE AT FOREBAY/MICROPOOL

Methodology:

1. Connect the "vactor" truck to an approved nearby source of clean water for "vactoring" purposes.
2. Place water jet hose down the slope of the forebay/micropool (Locations C & D). Use hose to loosen accumulated sediment.



MAJOR AREAS OF PRACTICE

- | | | |
|---------------------|---------------------|------------|
| B. Inlet Structure | D. Micropool | F. Outfall |
| C. Sediment Forebay | E. Outlet Structure | |

3. Place the flexible suction hose into the forebay/micropool (Locations C & D).
4. Perform "vactoring" operations by simultaneously using the suction arm and water jet hose to remove slurry until the rip-rap base is reached.
5. Continue slurry removal until capacity of "vactor" truck is reached.
6. Stop "vactoring" work. Dispose of slurry off-site.
7. Repeat Steps 1-6 until all the sediment has been removed.
8. After "vactoring" work is complete, carefully remove the flexible suction hose and the water jet hose from the forebay/micropool, and transport them back to the truck.
9. Inspect the accessway and adjacent area for damage, such as dislodged field stone, wood chips, etc., and refurbish as required.

Note: Secure locks on gates as necessary prior to exiting site.

Paperwork and Reporting

- 1) Refer to site specific SWPPP and regulated MS4 for reporting requirements related to maintenance
- 2) Report practice failures to owner-operator and relevant regulated MS4

Required Maintenance Permits

Issuing Agency	Regulated Parameters
1. U.S. Army Corps of Engineers	- Sediment Removal and Placement of fill within wetlands
2. NYSDEC	- Temporary dewatering of wetland - Revegetation - Herbicide application

Maintenance Considerations During Design

- Erosion and Sediment Control
 - Inlet/Outlet Protection
 - Sediment Removal
- Landscaping
- Mechanical Issues
 - Pipe Considerations
 - Adjustable Gate Valve
- Pond Drain
- Maintenance Access
- Cold Climate Considerations