cuyahoga SOIL&WATER conservation district

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Field Review
Technical Advisory Report
Long-Term Operation & Maintenance

Report Delivered: ☑

Site Name:	Royal Valley - 053	**Report Date:**	2019-07-22
Location:	Facility 053	**Inspection Date:**	2019-07-01
Permit Holder:	Royal Valley HOA	**Reviewed By:**	Carla Regener, CPESC, CESSWI
Contact:	HOA President	**Site NPDES Number:**	N/A
Address:	6015 Bayleaf Lane North Royalton OH 44133	**Application No:**	N/A

Stormwater Control Measure Field Review of Conditions and Compliance Activities performed through a Memorandum of Understanding in accordance with Ohio Revised Code, Chapter 940 and North Royalton Codified Ordinances

Site Condition Summary

View of retention basin. This basin is in need of dredging. Remove accumulated sediment and debris. Fix erosion and inflow structure. Remove/treat cattails.

Needed Maintenance Activity Details:

See needed maintenance activity details below.
As a stormwater control measure (SCM) owner/operator in the Northeast Ohio Regional Sewer District's (NEORSD) stormwater service area, you may be eligible for a stormwater fee credit. The credit is a conditional reduction in the NEORSD stormwater fee if an account holder takes measures to reduce the stormwater rate or volume and/or protect the water quality of runoff flowing from their property to the regional stormwater system. The credit can be obtained through continued use, operation, and maintenance of approved SCMs. To find out more details about the credit program and to apply for credit you can find details online at: https://www.neorsd.org/fee-credit/, or contact Chris Hartman with NEORSD at 216-881-6600 X6656.

Additional Information:

Stormwater control measures (SCMs) are manmade structures that help reduce flooding by holding back and slowly releasing water during rain events. They include man-made retention ponds, dry detention basins, and underground detention devices. Sites with a constructed SCM are responsible for maintaining the structure. A guidance document has been compiled by local stormwater experts to assist private owners with inspection and maintenance and is available online at the following link:
http://www.neohiostormwater.com/uploads/3/0/9/8/3098302/compressed_scm_om_manual_final_8-21-15.pdf

Sediment

View of of large amount of sediment accumulation at the southern edge of the basin.

View of muddy water within the basin even though it hadn't rained in a couple of days.

Needed Maintenance Activity Details:

A large amount of sediment has accumulated within this basin. Remove sediment and return basin to original design elevations.

Additional Information:

Stormwater control measures are designed to capture sediment and will need periodic sediment removal to maintain proper water storage volume. Sediment should be removed when the designed storage volume has been reduced by 25%, or the pond becomes nutrient enriched (e.g. excessive floating plants). Trapped sediment is usually clean enough for on-site use. However, laboratory analysis of sediment should be performed if the pond has received spills, is in a highly industrial area, or if the watershed has intensive traffic.

Inflow Structure

View of two inflow paths along the southern edge of the basin with large amount of sediment accumulation at the inflow.

View of inflow structure in the northwest with sediment accumulation and invasive plants.

View of inflow structure along the eastern edge of the basin.

View of minor amount of debris at inflow (east).

View of erosion occurring at the headwall (east).

View of inflow with grass clippings (east).

View of of sediment accumulation and algae at the inflow (east).

View of sediment and debris at southern inflow.

Needed Maintenance Activity Details:

Monitor and remove accumulated debris from the inflow structure on a regular basis to ensure proper function.
Monitor for erosion around the inflow structure, repair as needed to prevent failure of infrastructure and sedimentation of the stormwater control measure.
Remove sediment from inflow structure area on a routine basis to prevent sedimentation of the stormwater control measure.

Additional Information:

Inflow structures (pipes, culverts, curb cuts, etc.) direct stormwater runoff into stormwater control measures. These inflow structures can become clogged by overgrown plants, accumulation of sediment, floating trash and debris. A clogged inflow structure can result in erosion and blocked flow. Unclogging the inflow structure is relatively simple. Remove overgrown plants, accumulated sediment, and debris with a shovel, rake, a pole or your hand. Inspect inflow areas regularly as they can become clogged at any time.

Invasive Aquatic Plants

View of phragmites within the basin.

Needed Maintenance Activity Details:

Cut back or treat Phragmites to prevent further growth. Use a contractor with a commercial pesticide license with aquatic endorsement for any chemical treatments. Planting turf or native species to compete with the Phragmites will help stabilize and prevent future Phragmites establishment. Contact Cuyahoga SWCD for additional details about the proper management of Phragmites. Stabilize any areas that are disturbed during vegetation management.

Additional Information:

Stormwater control measures can become overgrown with invasive plants without routine maintenance. The plants form a mat that thickens each year, reducing space in the basin for water detention. Narrowleaf cattails (typha angustifolia), Common Reed Grass (Phragmites), and Reed Canary Grass (Phalaris) form protective thickets which allow for mosquito breeding. Invasive plants can be controlled using physical or chemical methods. When chemical methods are preferred, please first refer to http://epa.ohio.gov/dsw/permits/GP_Pesticide.aspx. As with all plant management in stormwater control measures, any soil disturbance will need to be stabilized with seeding/uniform plant growth. Depending on the length of time the invasive plants have been growing, dredging of accumulated sediment may also be needed before seeding and stabilization.

Outlet Structure

View of outlet structure for the basin.

View of debris accumulation at outlet structure.

Needed Maintenance Activity Details:

Monitor and remove accumulated debris from the outlet structure on a regular basis to ensure proper function.

Additional Information:

Outlets provide a path for water from stormwater control measures to the storm sewer or stream. The outlet structure is designed to slow down water and hold it back within the stormwater control measure during rain events. These outlets can become clogged by accumulation of sediment, floating trash and debris. A clogged outlet can result in loss of storage and flooding of unintended areas. Unclogging the outlet is relatively simple. Remove accumulated sediment and debris with a shovel, rake, a pole or your hand. Inspect the outlet regularly, it can become clogged at any time.

Trash and Debris

View of debris accumulation at the outlet structure.

View of plant debris along the edge of the basin.

View of branch near the inflow.

View of landscaping debris along the edge of the basin.

Needed Maintenance Activity Details:

Remove plant debris from the stormwater control measure during routine maintenance to ensure proper function and aesthetic quality.

Ensure that landscaping staff and residents do not dump landscaping debris in the area around the basins or storm sewer system.

Additional Information:

Excessive amounts of trash and plant debris can clog stormwater control measures and should be removed on a routine basis for proper function, safety, and aesthetic quality.

Other Observations

View of improper tree mulching.

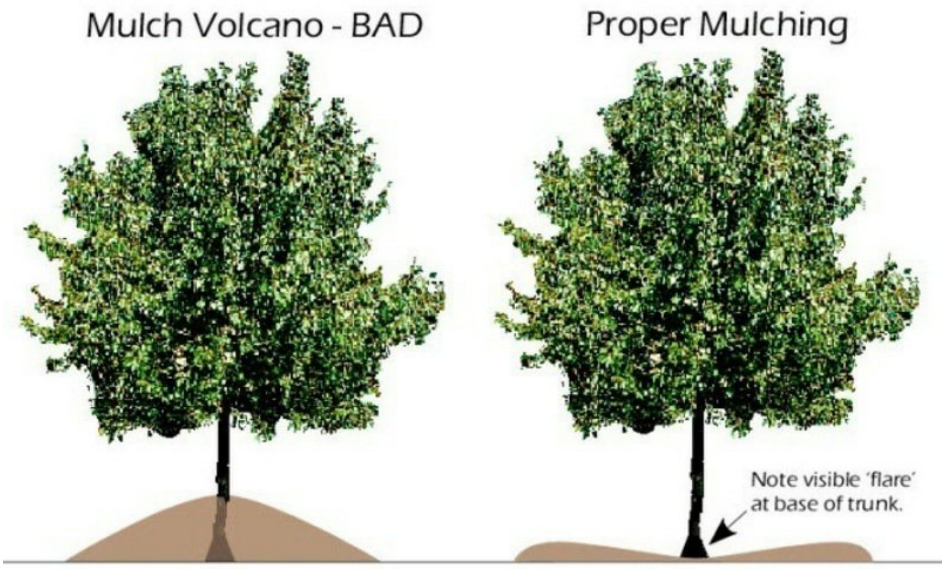

Diagram showing proper mulching techniques.

Additional Details and Recommendations:

Trees can provide important stormwater benefits when cared for properly and allowed to thrive. Improper tree mulching can cause the early demise of a tree. Mulch should be placed around the base of the tree leaving space at the trunk to prevent trunk rot. Mulch should be in a donut shape around the trunk versus a volcano shape up the trunk.

Comments:

Well planned, designed and constructed stormwater control measures remove pollutants, protect stream channels, and mitigate floods. To accomplish these goals and keep these features safe, aesthetic, and mosquito free, they must be maintained. Maintenance items listed above are needed to achieve permit compliance.

Please feel free to contact Carla Regener (cregener@cuyahogaswcd.org), Storm Water Specialist, at the Cuyahoga SWCD if you have any questions.

CC:

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Daniel Collins, City of North Royalton - Engineering

Robert Stefanik, City of North Royalton

Tom Ferrara, Royal Valley HOA

Jeff Paulus, Royal Valley HOA