Wet Vault MP-50

General Description

A wet vault is a vault with a permanent water pool, generally 3 to 5 feet deep. The vault may also have a constricted outlet that causes a temporary rise of the water level (i.e., extended detention) during each storm. This live volume generally drains within 12 to 48 hours after the end of each storm.

Inspection/Maintenance Considerations

Maintenance of wet vaults requires special equipment. Each manufacturer provides storage capacities with respect to sediments and floatables, with recommendations on the frequency of cleaning as a function of the percentage of the volume in the unit that has been filled by these materials. There is concern about mosquito breeding in standing water. A loss of dissolved pollutants may occur as accumulated organic matter (e.g., leaves) decomposes in the units. If regular maintenance is not performed, accumulated sediment may cause noxious gases to form.

It is important to recognize that as storage of accumulated sediment occurs directly in the operating area of the wet vault, treatment efficiency will decline over time given the reduction in treatment volume. Whether this is significant depends on the design capacity. Some manufactured wet vaults have relatively little sediment storage and therefore must be cleaned frequently (e.g., annually) while others have sufficient capacity to reduce cleaning frequency. Vault maintenance procedures must meet OSHA confined space entry requirements.

Sediment should be tested for toxicants in compliance with current disposal requirements if land uses in the catchment include commercial or industrial zones, or if visual or olfactory indications of pollution are noticed.

Maintenance Concerns, Objectives, and Goals

- Sediment Removal
- Vector Control

Targeted Constituents

- ✓ Sediment
- ✓ Nutrients
- ✓ Trash
- ✓ Metals
- Bacteria
- ✓ Oil and Grease
- ✓ Organics
- ✓ Oxygen Demanding

Removal Effectiveness

See New Development and Redevelopment BMP Handbook-Section 5.

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Inspection Activities	Suggested Frequency
■ Inspect the unit twice during the first wet season of operation, setting the cleaning frequency accordingly.	Post construction
■ Inspect for floating debris, sediment buildup, and accumulated petroleum products.	Annual
Maintenance Activities	**Suggested Frequency**
■ Remove sediment that has accumulated in the vault after construction in the drainage area is complete.	Post construction
■ The recommended frequency of cleaning differs with the manufacturer, ranging from one to two years. ■ Maintenance consists of the removal of accumulated material with an eductor truck. It may be necessary to remove and dispose the floatables separately due to the presence of petroleum product. Annual maintenance is typical.	Annual, or per manufacturers recommendations
■ Remove floating debris and accumulated petroleum products as needed. Floating oil should be removed from wet vaults that are used as oil/water separators when oil accumulation exceeds one inch.	Annual, or more frequent as needed

References

Metropolitan Council, Urban Small Sites Best Management Practices Manual. Available at: http://www.metrocouncil.org/environment/Watershed/BMP/manual.htm