

# Fort Belvoir Directorate of Public Works (DPW) Municipal Separate Storm Sewer System (MS4) Program

# Erosion & Sediment Control Technical Bulletin #1: DEWATERING OPERATIONS

## **APPLICABILITY**

This bulletin is applicable to Garrison, Tenant and Contractor Operations for emergency and non-emergency dewatering operations.

#### **BACKGROUND**

In order to comply with the Virginia Pollution Discharge Elimination System (VPDES), Virginia Stormwater Management Program (VSMP) Permits, and the Virginia Erosion and Sediment Control Program (VESCP) published by the Virginia Department of Environmental Quality (VADEQ), specific guidelines must be followed during dewatering operations on construction sites and during maintenance and repair operations to prevent unauthorized discharges of sediment into the Fort Belvoir storm sewer system and wetlands. Guidance can be found in the Virginia Stormwater Management Handbook, Version 1.1 (VSMH).

#### **NOTIFICATION**

For construction sites, when dewatering operations, either emergency or nonemergency, are to be employed, please contact the ESC inspector that has been assigned to your project. All others may contact Mr. Wayne Strebe at 571-644-3131.

#### GENERAL CONSIDERATIONS

- 1. IN ALL INSTANCES, PUMPING DIRECTLY INTO THE STORM SEWER SYSTEM IS PROHIBITED!
- 2. The accumulated sediment which is removed from a dewatering device must be spread on-site and stabilized.
- **3.** Furnishing materials necessary for meeting dewatering best management practice standards is the responsibility of the personnel performing the construction/maintenance activity.

#### **BEST MANAGEMENT PRACTICES**

The following practices are examples of potential best management practices to meet the minimum standards and regulations from VADEQ for use during both emergency and non-emergency dewatering operations.

- Portable Sediment Tank (VSMH C-SCM-10-1): Direct all pump discharge into a portable sediment tank.
  - Consult VSMH for design, construction, and maintenance of the portable sediment tank to ensure that the device adequately performs the function of sediment filtration.
  - Transport sediment tanks that have reached their capacity to a location within the construction site LOD and redistribute onsite.

- 2. Filter Box (VSMH C-SCM-10-2): Direct all pump discharge through a filter box.
  - Consult VSMH for design, construction, and maintenance of the filter box to ensure that the device adequately performs the function of sediment filtration.
  - The discharge from the filter box must be directed onto a wellestablished grass area with a minimum distance of 50 feet between the discharge point and any channel.
  - Install gravel curb inlet sediment filters, or "rock socks", to all curb inlets that may receive discharge water.
- Straw Bale/Silt Fence Pit (VSMH C-SCM-10-3): For exceptionally large dewatering operations, construct a straw bale/silt fence pit in an area without underground utilities or environmental constraints. Install gravel curb inlet sediment filters (VSMH C-SCM-04), or "rock socks", to all curb inlets that may receive discharge water.
- Pumped Water Filter Bag (VSMH C-SCM-10-4): Direct all pump discharge into a geotextile silt bag. The following specifications must be followed to ensure proper use of a silt bag:
  - The silt bag must be sized according to the pump size.
  - The silt bag must be located on top of non-erodible material. This can be well established grass, stone, pavement, riprap, etc. In no case may the silt bag be located on top of bare earth/mud.
  - If the silt bag is located adjacent to a stormwater structure (curb inlet, yard inlet, etc.), another erosion and sediment control measure should be used on that structure to further filter the water. For example, if the silt bag is placed on the pavement next to a curb inlet, install stone inlet protection or a gutter buddy on the curb inlet for additional filtration.
  - The area where the silt bag is positioned must be flat or gently sloped to encourage the runoff to drain properly.
  - Ensure that the water runoff from the silt bag is not causing erosion.
  - Tie a water-tight connection between the hose and silt bag to prevent unfiltered water from leaving the silt bag.
  - The silt bag should be checked on a regular basis to ensure there is CLEAR water leaving it.
  - Replace the bag if it is damaged, when it no longer filters sediment (i.e. the exiting water is no longer clear), or is not passing water at a reasonable rate.
  - Once full, the silt bag can either be disposed of altogether or opened and the sediment distributed back onsite and stabilized.
  - Restore the surface area beneath the bag to original condition upon removal of the silt bag.
- 5. <u>Existing Sediment Traps or Basins</u>: All pump discharge should be directed toward existing sediment traps or basins located within the construction site

Limits of Disturbance (LOD) in such a manner not to cause bank erosion of the trap or basin.

- Pump discharge into the trap or basin should be directed toward the point furthest away from the outfall to allow for the settling out of sediment before the water reaches the outfall.
- Discharging directly into an outlet or riser is not authorized.
- Additional slope and/or inlet protection may be warranted.
- Existing sediment traps or basins must be properly maintained in accordance with the VSMH C-SCM-11 Temporary Sediment Trap, and VSMH C-SCM-12 Temporary Sediment Basin.

## **DPW-ENVIRONMENTAL DIVISION STORMWATER POCs:**

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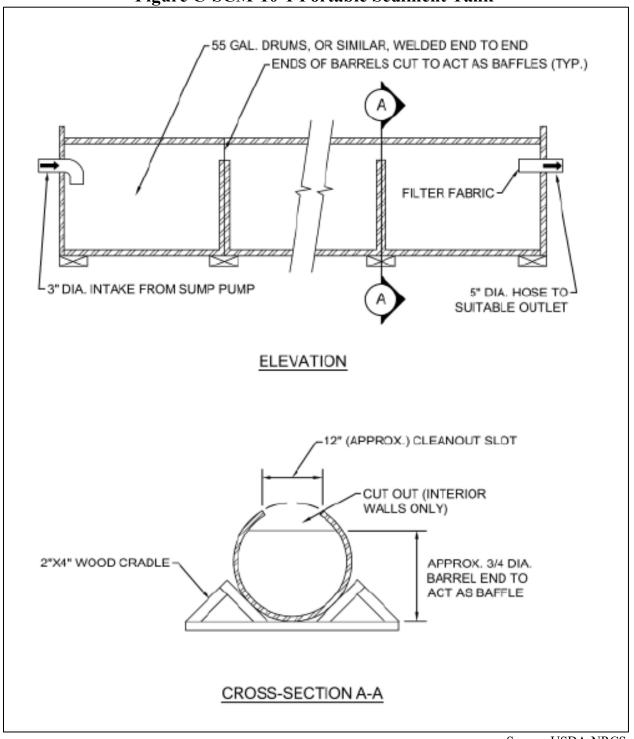
520-725-6207

Physical Location: Bldg. 1442, 2<sup>nd</sup> Floor

Mailing Address: 9430 Jackson Loop, Bldg. 1442

Directorate of Public Works Fort Belvoir, VA 22060

Figure C-SCM-10-1 Portable Sediment Tank



Source: USDA-NRCS

INFLOW HOSE (INSTALL SECURELY) WELD INCOMING SEDIMENT-LADEN 12" 55 GALLON STEEL DRUMS OR WATER MIN. SIMILAR, WELDED TOP TO воттом VDOT #3 COARSE AGGREGATE 12" MIN. (FROM OUTLET HOLES) WOODEN BASE 2-2"X4" STUDS NAILED TOGETHER EXFLITRATION ACROSS WELL-VEGETATED AREA WHICH HAS A MINIMUM 50' LENGTH **ELEVATION VIEW** 

Figure C-SCM-10-2 Filter Box

Source: VA DSWC

CLASS AI RIPRAP SPLASH BLOCK 1' DEPTH FILTER: CLOTH PUMP DISCHARGE 2 STAKES PER BALE (TYP.) Ó NOTE: FILTER CLOTH COVERS 0 6'-0" MIN. SQUARE ENTIRE INSIDE FACE OF STRAW BALE DIKES. INSTALL EXCAVATED AS PER STD. & SPEC. 3.05, AREA-SILT FENCE. VDOT #25 OR #26 AGGREGATE 1'-6" CLASS AI RIPRAP PLAN VIEW **EXISTING** GROUND EXCAVATED AREA FLAT воттом CROSS-SECTION A-A VDOT #25 OR #26 AGGREGATE (4" DEPTH) EXCAVATED AREA DRY RIPRAP CLASS AI CROSS-SECTION B-B Source: VA DSWC

Figure C-SCM-10-3 Straw Bale/Silt Fence Pit

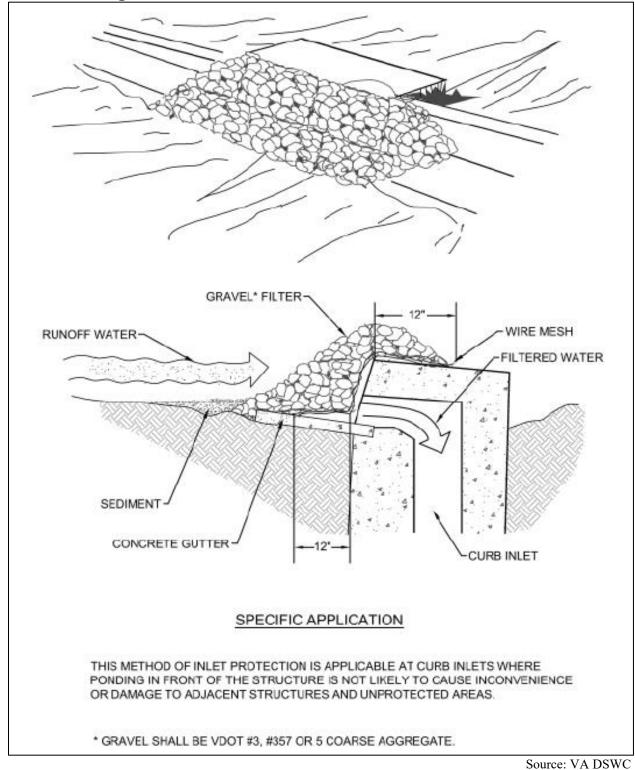


Figure C-SCM-04-5 Gravel Curb Inlet Sediment Filter