

FT-2

Media Filter

BMP MAINTENANCE FACT SHEET FOR FLOW-THRU STRUCTURAL BMP FT-2 MEDIA FILTER

Media filters are manufactured devices that consist of a series of modular filters packed with engineered media that can be contained in a catch basin, manhole, or vault that provide treatment through filtration and sedimentation. The manhole or vault may be divided into multiple chambers where the first chamber acts as a presettling basin for removal of coarse sediment while the next chamber acts as the filter bay and houses the filter cartridges. A variety of configurations and media types are available from various manufacturers. Typical media filter components include:

- Vault for flow storage and media housing
- Inlet and outlet
- Media filters

Normal Expected Maintenance

Media filters require routine maintenance to: remove accumulated materials such as sediment, trash, and debris; replace filter cartridges; and maintain integrity of any internal components such as weirs and piping. A summary table of standard inspection and maintenance indicators is provided within this Fact Sheet.

Non-Standard Maintenance or BMP Failure

The normal expected maintenance described above ensures the BMP functionality. Lapses in the normal expected maintenance can lead to clogging of the BMP and potentially blocking the storm drain system. If clogging is observed, the BMP is not performing as intended to protect downstream waterways from pollution and/or erosion. In addition, clogged BMPs can lead to flooding, standing water and mosquito breeding habitat. Maintenance is critical to ensure the flood protection capacity of the storm drain system is not compromised. If proper routine maintenance is not performed, corrective maintenance and increased inspection and maintenance will be required. For persistent clogging or presence of mosquitos, contact the [City Engineer] to determine a permanent solution. For example, adding pretreatment measures within the tributary area draining to the BMP to intercept sediment, trash, and debris. Pretreatment components, especially for sediment, will extend the life of the filter media. For mosquitos, a Vector Management Plan, prepared with concurrence from the County of San Diego Department of Environmental Health, may be required.

Other Special Considerations

Media filters are proprietary systems that include proprietary media that must be replaced as part of normal expected maintenance. They are typically installed underground and may require entry into the underground vault to perform the maintenance. The BMP owner is responsible to hire a maintenance operator qualified to service the units. The maintenance operator must obtain the appropriate filter media and/or any parts that need to be replaced. If maintenance conditions require maintenance personnel to enter the underground structure, the maintenance personnel must be trained and certified in confined space entry. To find a qualified maintenance operator, the BMP owner shall contact the manufacturer of the proprietary BMP.

The design of media filters includes consideration of the specific pollutants expected from the area tributary to the media filter and the specific pollutants of concern for the downstream waterways. Therefore, it is expected that the filter media selected during design of the project will not be substituted. If a need arises to substitute a different filter configuration or filter media, the [City Engineer] shall be contacted prior to any changes.

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SUMMARY OF STANDARD INSPECTION AND MAINTENANCE FOR FT-2 MEDIA FILTER		
<p>The property owner is responsible to ensure inspection, operation and maintenance of permanent BMPs on their property unless responsibility has been formally transferred to an agency, community facilities district, homeowners association, property owners association, or other special district.</p> <p>Maintenance frequencies listed in this table are average/typical frequencies. Actual maintenance needs are site-specific, and maintenance may be required more frequently. Maintenance must be performed whenever needed, based on maintenance indicators presented in this table. The BMP owner is responsible for conducting regular inspections to see when maintenance is needed based on the maintenance indicators. During the first year of operation of a structural BMP, inspection is recommended at least once prior to August 31 and then monthly from September through May. Inspection during a storm event is also recommended. After the initial period of frequent inspections, the minimum inspection and maintenance frequency can be determined based on the results of the first year inspections.</p>		
Threshold/Indicator	Maintenance Action	Typical Maintenance Frequency
<p>Accumulation of sediment, litter, or debris.</p> <p>The threshold for removal of materials depends on the specific type of proprietary filter and configuration and shall be based on the manufacturer's recommendation. In any case, materials must be removed if accumulation blocks flow through the BMP.</p>	<p>Remove and properly dispose of accumulated materials.</p>	<ul style="list-style-type: none"> • Inspect monthly. • Remove materials annually (minimum), or more frequently when BMP reaches manufacturer's threshold for removal of materials in less than one year, or if accumulation blocks outlet.
<p>Spent or clogged filter media.</p> <p>The threshold for changing media depends on the specific type of proprietary media and shall be based on the manufacturer's recommendation. In any case, media must be replaced if flow cannot pass through the media or passes through at less than the design capacity.</p>	<p>Remove and properly dispose filter media, and replace with fresh media.</p>	<ul style="list-style-type: none"> • Inspect condition of media annually or more frequently if recommended by manufacturer. • Inspect BMP drainage monthly and after every 0.5-inch or larger storm event. If standing water has been observed, increase inspection frequency to after every 0.1-inch or larger storm event. • Maintenance when needed based on manufacturer's threshold/indicator for the specific media, or if standing water in the BMP indicates flow cannot pass through the media.
<p>Any other recommendations pursuant to the proprietary filter manufacturer's maintenance guide.</p>	<p>Any other actions pursuant to the proprietary filter manufacturer's maintenance guide.</p>	<ul style="list-style-type: none"> • As recommended by the proprietary filter manufacturer's maintenance guide
<p>Obstructed inlet or outlet structure</p>	<p>Clear blockage.</p>	<ul style="list-style-type: none"> • Inspect monthly and after every 0.5-inch or larger storm event. • Remove any accumulated materials found at each inspection.

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SUMMARY OF STANDARD INSPECTION AND MAINTENANCE FOR FT-2 MEDIA FILTER (Continued from previous page)		
Threshold/Indicator	Maintenance Action	Typical Maintenance Frequency
Presence of mosquitos/larvae For images of egg rafts, larva, pupa, and adult mosquitos, see http://www.mosquito.org/biology	If mosquitos/larvae are observed: first, immediately remove and properly dispose any standing water; second, remove any accumulated materials that obstruct flow through the BMP to restore BMP drainage to prevent standing water. Ensure access covers are tight fitting, with gaps or holes no greater than 1/16 inch, and/or install barriers such as inserts or screens that prevent mosquito access to the subsurface storage. If the BMP includes a permanent sump, contact the [City Engineer] to determine a permanent solution. A different BMP type, or a Vector Management Plan prepared with concurrence from the County of San Diego Department of Environmental Health, may be required.	<ul style="list-style-type: none"> • Inspect monthly and after every 0.5-inch or larger storm event. If mosquitos are observed, increase inspection frequency to after every 0.1-inch or larger storm event. • Maintenance when needed.
Damage to structural components of the filtration system such as weirs, underdrains, inlet or outlet structures	Repair or replace as applicable.	<ul style="list-style-type: none"> • Inspect annually. • Maintenance when needed.

References

American Mosquito Control Association.

<http://www.mosquito.org/>

California Storm Water Quality Association (CASQA). 2003. Municipal BMP Handbook.

<https://www.casqa.org/resources/bmp-handbooks/municipal-bmp-handbook>

County of San Diego. 2014. Low Impact Development Handbook.

<http://www.sandiegocounty.gov/content/sdc/dpw/watersheds/susmp/lid.html>

San Diego County Copermittees. 2016. Model BMP Design Manual, Appendix E, Fact Sheet FT-2.

http://www.projectcleanwater.org/index.php?option=com_content&view=article&id=250&Itemid=220

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Date:	Inspector:	BMP ID No.:
Permit No.:	APN(s):	
Property / Development Name:		Responsible Party Name and Phone Number:
Property Address of BMP:		Responsible Party Address:

INSPECTION AND MAINTENANCE CHECKLIST FOR FT-2 MEDIA FILTER PAGE 1 of 2			
Threshold/Indicator	Maintenance Recommendation	Date	Description of Maintenance Conducted
Accumulation of sediment, litter, or debris Maintenance Needed? <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A	<input type="checkbox"/> Remove and properly dispose of accumulated materials <input type="checkbox"/> Other / Comments:		
Spent or clogged filter media Maintenance Needed? <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A	<input type="checkbox"/> Remove and properly dispose filter media, and replace with fresh media <input type="checkbox"/> Other / Comments:		
Obstructed inlet or outlet structure Maintenance Needed? <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A	<input type="checkbox"/> Clear blockage <input type="checkbox"/> Other / Comments:		

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Date:	Inspector:	BMP ID No.:
Permit No.:	APN(s):	

INSPECTION AND MAINTENANCE CHECKLIST FOR FT-2 MEDIA FILTER PAGE 2 of 2			
Threshold/Indicator	Maintenance Recommendation	Date	Description of Maintenance Conducted
Presence of mosquitos/larvae For images of egg rafts, larva, pupa, and adult mosquitos, see http://www.mosquito.org/biology Maintenance Needed? <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A	<input type="checkbox"/> Remove and properly dispose standing water <input type="checkbox"/> Remove accumulated materials that obstruct flow through the BMP* <input type="checkbox"/> Other / Comments:		
Damage to structural components of the filtration system such as weirs, underdrains, inlet or outlet structures Maintenance Needed? <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A	<input type="checkbox"/> Repair or replace as applicable <input type="checkbox"/> Other / Comments:		
Any other recommendations pursuant to the proprietary filter manufacturer's maintenance guide Maintenance Needed? <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A	<input type="checkbox"/> Any other recommendations pursuant to the proprietary filter manufacturer's maintenance guide <input type="checkbox"/> Other / Comments:		

*If the BMP includes a permanent sump, contact the [City Engineer] to determine a permanent solution. A different BMP type, or a Vector Management Plan prepared with concurrence from the County of San Diego Department of Environmental Health, may be required.