When the water quality flow rate is used in the treatment flow will be less than the peak discharge flow rate from the site. A by-pass structure allows the filter system to be placed offline with lower flow rates to white higher peak storms are bypassed around the system. Use of a BaySeparate as a pretreatment device can prevent the filters from treating many large particles which are more easily removed by gravity separation. Use of pre-treatment can extend the life of the more costly filter system.

In flow based design there is usually a higher flow rate treated per cartridge but reduced treated sediment load per cartridge. Flow based configurations are generally limited by flow capacity and not sediment loading.

It is advisable for these configurations to utilize a BaySeparate prior to the detention system as pretreatment. For volume-based systems the BayFilter is used on the outlet side of the detention system. This provides not only the detention for the site but the ability to route the water quality volume through the BayFilter. These types of designs are generally fewer cartridges with higher sediment loads.

The offline design of the systems provides for control of sediment scour and resuspension. The larger storms which could scour and resuspend sediment from the structure are routed around the structure and prevent introduction of flow which could deposit sediments downstream.

HOW MANY CARTRIDGES

Each BayFilter system relies on a collection of individual cartridges to achieve the desired removal efficiency as the correct number of cartridges is important. Too few cartridges will result in a system that does not meet performance or requires frequent maintenance while too many results in a system that is too large and overly expensive. To determine the number of cartridges three factors must be considered:

- The flow capacity of the system
- Treated sediment load
- Jurisdiction

In general BayFilter cartridges are designed to handle 100cm (40 ft³/sec) per cartridge. When combined with treated sediment load and jurisdiction requirements the minimum number of cartridges necessary can be determined. More complete design parameters and guidelines are available upon request.

**SPECIFICATIONS**

**INTERNAL COMPONENTS**
- Precipitate Catcher shall be provided according to ASTM C-578, C-618, and C-628. Precipitate catcher vault shall be provided by BayWater Technologies, Inc.
- PVC Standard Pipe: All internal PVC pipe and fittings shall meet ASTM D2191. Manifold piping shall be provided to the contractor pre-cut and pre-assembled.
- Filter Cartridges: Nominal size of the filter cartridges shall be substantially constructed of polyethylene or equivalent material. Filtration media shall be arranged in a layered fashion to maximize available filtration area. An orifice plate shall be supplied with each cartridge to restrict flow rate to a maximum of 35 gpm.
- Flow Meter: Flow meter shall be by BayWater Technologies or a filter manufacturer. The effective particle size of no more than 0.46 mm, it shall have an angular grain shape, a hardness of 7, 28% silica, and 30% red quartz. The media shall also include a blend of Perelite and Activated Alumina.
- Flow Sensor-Energy Shedder: Shall be constructed of polyethylene or equivalent material.

**PERFORMANCE**
- The downstream filter system shall be an offline design capable of treating the stormwater flow for effective detention treatment and capture of all dissolved solids and particulates. When combined with our standard stormwater catchment a downstream filter system shall have no moving parts.
- Downstream filters shall be designed to treat a minimum of total suspended solids, 55% of total phosphorus, 65% of turbidity, 40% of total iron, and 60% of total phosphorus based on load data collected in accordance with the Technology Acceptance Reciprocity Partnership Tier I test protocol.
- The downstream filtration system shall reduce incoming turbidity (measured as FTU) by 60% or more and shall not receive any components that leach nitrate or phosphates.
- The downstream filter system shall be equipped with a hydrodynamic backwash mechanism to extend the filter’s life and optimize its performance. The flow shall be sufficient to remove a minimum of 55% of the incoming Total Phosphorus (TP) load.
- The downstream filtration system’s cartridge vault shall have the following minimum flow and sediment load capacities:

**INSTALLATION**

Installation of the BayFilter System(s) shall be performed by the manufacturer’s Installation Instructions. For more information on BayFilter or the advanced filtration system and other ADS products, please contact our Customer Service Representatives at 1-800-901-9752. ADS™, "BayFilter", "Advanced Drainage Systems", "BayWater", "BaySeparate", and the BayFilter logo are registered trademarks of Advanced Drainage Systems, Inc. "BRO", "EAR", "PERLITE" and "SHELL" are registered trademarks of Advanced Drainage Systems, Inc. Portions of this document are copyright © 2010 Advanced Drainage Systems, Inc. All rights reserved. The text and images in this document may not be reproduced without the written consent of Advanced Drainage Systems, Inc.
ADS BAYFILTER® STORMWATER FILTRATION SYSTEM

With over seven years in research and development, BayFilter is the most efficient, effective, economical, and easy-to-use stormwater treatment filter on the market today. The BayFilter system utilizes proven sand filter principles to remove pollutants such as sediments, oil, metals, organics and nutrients. The modular design allows the units to be sized based on site conditions providing the exact system needed for both large and small sites.

FILTER OPERATION:
The BayFilter system consists of modular cartridges placed in vaults for stormwater treatment. The cartridges consist of a spiral wound media filter cartridge utilizing proprietary sand mix with over 43 square feet of active filtration area. During a storm event, water will begin to enter the vault at the inlet pipe and fill the structure where the filters are housed. When the water surface elevation reaches the operation level, water is forced through the cartridges via hydrostatic head. Water enters the cartridge through the inlet drainage material and is forced through the media filter into the outlet drainage material. Once operation level is reached the filtered stormwater enters the system via the center drain tube into the drainage manifold. During sub-saturation the filters still operate under suction conditions until the siphon is released and backwash occurs. The remaining water in the vault is evacuated through filtered drainline media located in the vault. The cartridge system operate in four phases of flow which are:

1. Vault Fill & Air Release
2. Uniform Bed load hydrodynamic filtration
3. Uniform Bed load siphon filtration
4. Siphon break and hydrodynamic backwash

Due to the backwash cycle of the treatment process, sediment is deposited on the vault floor. The backwash involves an additional level of filter cleaning not provided in other modular filter systems. This extends the life of the filter and reduces maintenance. In addition the filter retains some minor amount of sediment as well.

CONFIGURATION:
There are several different options available for the BayFilter configurations but the most common are the Manhole filter, precast vault filter, and cast-in-place filter. The Manhole configuration is the most economical version of the system. Treatment Capacities are as follows:

Manhole BayFilters are ideal for installation on the downstream side of a detention system. Precast vaults are used on larger sites with more impervious area. The precast BayFilter system is larger than the manhole BayFilter. It has a treatment capacity as follows:

Installations of Precast BayFilter systems can be used independently or in conjunction with a detention system. Pretreatment with a BaySeparator should be considered to extend the filter life.

The last option available is the cast-in-place BayFilter. On sites that require more than the 54 cartridges or where the precast and manhole system is not practical, a cast in place vault can provide the solution. High flow rates, shallow installations, very flat sites, and limited footprints can be reasonable for a cast in place system.

INSTALLATION:
The installation of the BayFilter system can be performed by the same contractor performing the installation of piping and underground utilities. The installation process is very simple and consistent whether installing the system in a manhole, precast vault, or cast in place vault. Once the containment system has been installed the filter system is placed inside the vault. The installation consists of the drainage manifold, energy dissipator level spreader, and cartridges. Because the BayFilter are modular the system can be installed very quickly. The cartridges should be installed after the site has been stabilized to avoid unnecessary filter replacements from construction-related activities.

MAINTENANCE:
As with all stormwater treatment devices the BayFilter systems requires periodic maintenance to continue operating at the design flow rate and efficiency. Maintenance includes the removal and replacement of each cartridge and cleaning of the containment system with a vacuum truck. Maintenance should be performed by trained personnel in the vault.

The maintenance cycle of the system will be driven mostly by the actual solids load on the filter. The system should be monitored periodically to make certain that the system is operating correctly. Maintenance cycles can be variable depending on storm events and sediment loads. For complete maintenance instructions and guidelines contact your ADS representative.

### Treatment Capacities

<table>
<thead>
<tr>
<th>System Type</th>
<th>Manual Bay Filter</th>
<th>Manhole Bay Filter</th>
<th>Precast Bay Filter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size Type</td>
<td>Module (in.)</td>
<td>Number of Filter Cartridges</td>
<td>Maximum Treatment Flow Rate (gpm)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5'</td>
<td>6.3</td>
<td>2</td>
<td>180 (0.27)</td>
</tr>
<tr>
<td>7.5'</td>
<td>22.8</td>
<td>3</td>
<td>360 (0.54)</td>
</tr>
<tr>
<td>10'</td>
<td>42.8</td>
<td>4</td>
<td>720 (1.08)</td>
</tr>
</tbody>
</table>

### System Capacities

<table>
<thead>
<tr>
<th>System Type</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Treatment Flow Rate (gpm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BayFilter</td>
<td>50</td>
<td>150</td>
<td>210 (0.35)</td>
</tr>
<tr>
<td>Manhole BayFilter</td>
<td>180 (0.27)</td>
<td>360 (0.54)</td>
<td>720 (1.08)</td>
</tr>
<tr>
<td>Precast BayFilter</td>
<td>360 (0.54)</td>
<td>720 (1.08)</td>
<td>1500 (2.53)</td>
</tr>
</tbody>
</table>

For Contact Details, please visit: [www.ads-water.com](http://www.ads-water.com)
The larger storms which could scour and remove sediment from the structure are routed around the system. Use of a BaySeparator as a pretreatment device can prevent the flows from treating many larger particles which are more easily removed by gravity separation. Use of pretreatment can extend the life of the more costly filter systems. In the offline design there is usually a higher flow rate treated per cartridge but reduced treated sediment load per cartridge. Flow based configurations are generally limited by flow capacity and not sediment loading. It is advisable for these configurations to utilize a BaySeparator prior to the detention system as pretreatment. For volume-based systems the BayFilter is used on the outlet side of the detention system. This provides not only the detention for the site but the ability to reduce the water quality volume through the BayFilter. These types of design are generally fewer cartridges with higher sediment loads.

The offline design of the systems provides for control of sediment scour and re-suspension. The larger storms which could scour and remove sediment from the structure are routed around the structure and prevent introduction of flow which could deposit sediments downstream.

NOW MANY CARTRIDGES

Each BayFilter system relies on a collection of individual cartridges to achieve the desired removal efficiency as the correct number of cartridges is important. Too few cartridges will result in a system that does not meet performance or requires frequent maintenance while too many results in a system that is too large and overly expensive. To determine the number of cartridges three factors must be considered:

• Floor capacity of the system
• Treated sediment load
• Jurisdiction

In general BayFilter cartridges are designed to handle 30gpm (0.067 cfs) per cartridge. When combined with treated sediment load and jurisdiction requirements the minimum number of cartridges necessary can be determined. More complete design parameters and guidelines are available upon request.

Treated Sediment Load for 80%

<table>
<thead>
<tr>
<th>Design Flow per Cartridge (gpm)</th>
<th>30</th>
<th>25</th>
<th>20</th>
<th>15</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sediment Load (lbs)</td>
<td>8</td>
<td>6</td>
<td>4</td>
<td>3</td>
</tr>
</tbody>
</table>

INSTALLATION

Installation of the BayFilter System(s) will be performed per manufacturer’s Installation Instructions. For more information on BayFilter or Nameplate Filtration System and other ADS products, please contact our Customer Service Representatives at 1-800-925-9710.

BayFilter™

The Exact System Needed for Large & Small Sites

ADC “Terms and Conditions” are available on the ADS website, www.ads-pipe.com. For more information on BayFilter or Nameplate Filtration System and other ADS products, please contact our Customer Service Representatives at 1-800-925-9710.

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The Most Advanced Name in Drainage Systems

**ADS BAYFILTER™ STORMWATER FILTRATION SYSTEM**

With over seven years in research and development, BayFilter is the most efficient, effective, economical, and easy-to-use stormwater treatment filter on the market today. The BayFilter system utilizes well proven sand filter principles to remove pollutants such as sediments, oil, metals, organics and nutrients. The modular design allows the units to be sized based on site conditions providing the exact system needed for both large and small sites.

**FILTERED OPERATION:**

The BayFilter system consists of modular cartridges placed in vaults for stormwater treatment. The cartridges consist of a spiral wound media filter cartridge utilizing proprietary sand mix with over 43 square feet of active filtration area. During a storm event, water will begin to enter the vault at the inlet pipe and fill the structure where the filters are housed. When the water surface elevation reaches the operation level, water is forced through the cartridges via hydrostatic head. Water enters the cartridge through the inlet drainage material and is forced through the media filter into the outlet drainage material. Once operation level is reached the filtered stormwater exits the system via the center drain tube into the drainage manifold. During storm subseuences the filters still operate under siphon operation until the siphon is released and backwash occurs. The remaining water in the vault is evacuated through filtered draindown media located in the vault. The cartridge system operates in four phases of flow which are:

1. Vault Fill & Air Release
2. Uniform Bed load hydraulic filtration
3. Uniform Bed load siphon filtration
4. Siphon break and hydraulic backwash

The backwash cycle of the treatment process, sediment is deposited on the vault face. The backwash provides an additional level of filter cleaning not provided in other modular filter systems. This extends the life of the filter and reduces maintenance. In addition the filter retains some minor amount of sediment as well.

**CONFIGURATION**

There are several different options available for the BayFilter configurations but the most common are the Manhole filter, precast vault filter, and cast-in-place filter. The Manhole configuration is the most economical version of the system. Treatment Capacities are as follows:

<table>
<thead>
<tr>
<th>Treatment Capacities</th>
<th>Manhole Filtration</th>
<th>Pre-Placed Filter Cartridges</th>
<th>Cast-In-Place Filter Cartridges</th>
</tr>
</thead>
<tbody>
<tr>
<td>72</td>
<td>30</td>
<td>190 (0.07)</td>
<td>240 (0.07)</td>
</tr>
<tr>
<td>96</td>
<td>36</td>
<td>250 (0.07)</td>
<td>320 (0.07)</td>
</tr>
</tbody>
</table>

Manhole BayFilter systems are ideal for installation on the downstream side of a detention system. Precast vaults are used on larger sites with more impervious area. The precast BayFilter system is larger than the manhole BayFilter. It has a treatment capacity as follows:

<table>
<thead>
<tr>
<th>Treatment Capacities</th>
<th>Vault Filtration</th>
<th>Maximum Number of Filter Cartridges</th>
<th>Maximum Treatment Flow Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>13</td>
<td>100</td>
<td>340 (0.14)</td>
<td>450 (0.17)</td>
</tr>
<tr>
<td>16</td>
<td>125</td>
<td>370 (0.17)</td>
<td>500 (0.20)</td>
</tr>
<tr>
<td>20</td>
<td>150</td>
<td>440 (0.20)</td>
<td>600 (0.27)</td>
</tr>
<tr>
<td>25</td>
<td>190</td>
<td>550 (0.27)</td>
<td>750 (0.34)</td>
</tr>
<tr>
<td>30</td>
<td>250</td>
<td>640 (0.34)</td>
<td>950 (0.47)</td>
</tr>
</tbody>
</table>

Installations of Precast BayFilter systems can be used independently or in conjunction with a detention system. Pretreatment with a BaySeparate should be considered to extend the filter life. The last option available is the cast-in-place BayFilter. On sites that require more the 54 cartridges on where the precast and manhole system is not practical, a cast in place vault can provide the solution. High flow rates, shallow installations, very flat sites, and limited footprints can all be reasons for a cast in place system.

**INSTALLATION**

Installation of the BayFilter system can be performed by the same contractor performing the installation of piping and underground utilities. The installation process is very simple and consistent whether installing the system in a manhole, precast vault, or cast in place vault. Once the containment system has been installed the filter system is placed inside the vault. The installation consists of the drainage manifold, energy dissipator/level spreader, and cartridges. Because the BayFilters are modular the system can be installed very quickly. The cartridges should be installed after the site has been stabilized to avoid unnecessary filter replacements from construction related activities.

**MAINTENANCE**

At any 6 month stormwater treatment device the BayFilter systems requires periodic maintenance to continue operating at the design flow rate and efficiency. Maintenance involves the removal and replacement of each cartridge and cleaning of the containment system with a vacuum truck. Maintenance should be performed by trained personnel in the vault.

The maintenance cycle of the system will be driven mostly by the actual solids load on the filter. The system should be monitored periodically to make certain that the system is operating correctly. Maintenance cycles can be variable depending on storm events and sediment loads. For complete maintenance instructions and guidelines contact your ADS representative.
The Most Advanced Name in Drainage Systems™

**ADS BAYFILTER™ STORMWATER FILTRATION SYSTEM**

With over seven years in research and development, BayFilter is the most efficient, effective, economical, and easy-to-use stormwater treatment filter on the market today. The BayFilter system utilizes well proven sand filter principles to remove pollutants such as sediments, oil, metals, organics and nutrients. The modular design allows the units to be sized based on site conditions providing the exact system needed for both large and small sites.

**FILTER OPERATION:**

The BayFilter system consists of modular cartridges placed in vaults for stormwater treatment. The cartridge consists of a spiral wound media filter cartridge utilizing a proprietary sand mix with over 43 square feet of active filtration area. During a storm event, water will begin to enter the vault at the inlet pipe and fill the structure where the filters are housed. When the water surface elevation reaches the operation level, water is forced through the cartridges via hydrostatic head. Water enters the cartridge through the inlet drainage material and is forced through the media filter into the outlet drainage material. Once operation level is reached the filtered stormwater exits the system via the center drain tube into the drainage manifold. During storm subsidence the filters still operate under siphon conditions until the siphon is released and backwash occurs. The remaining water in the vault is evacuated through filtered draindown modules located in the vault. The cartridge system operate in four phases of flow which are:

1. Vault Fill and Air Release
2. Uniform Bed load hydrodynamic filtration
3. Uniform Bed load air filtration
4. Siphon break and hydrodynamic backwash.

Due the backwash cycle of the treatment process, sediment is deposited on the vault floor. The backwash provides an additional level of filter cleaning not provided in other modular filter systems. This extends the life of the filter and reduces maintenance. In addition the filter retains some minor amount of sediment as well.

**MAINTENANCE:**

The last option available is the cast-in-place BayFilters. On sites that have large areas of impervious area, the precast BayFilter system is larger than the manhole BayFilter. It has a treatment capacity as follows:

<table>
<thead>
<tr>
<th>Manhole Size</th>
<th>Maximum Number</th>
<th>Maximum Treatment Flow</th>
</tr>
</thead>
<tbody>
<tr>
<td>8' x 10'</td>
<td>10</td>
<td>300 (0.67)</td>
</tr>
<tr>
<td>8' x 12'</td>
<td>13</td>
<td>390 (0.87)</td>
</tr>
<tr>
<td>8' x 14'</td>
<td>15</td>
<td>450 (1.00)</td>
</tr>
<tr>
<td>10' x 16'</td>
<td>21</td>
<td>630 (1.40)</td>
</tr>
<tr>
<td>10' x 20'</td>
<td>27</td>
<td>810 (1.80)</td>
</tr>
<tr>
<td>10' x 26'</td>
<td>33</td>
<td>990 (2.21)</td>
</tr>
<tr>
<td>10' x 32'</td>
<td>42</td>
<td>1260 (2.81)</td>
</tr>
<tr>
<td>10' x 38'</td>
<td>51</td>
<td>1530 (3.41)</td>
</tr>
<tr>
<td>10' x 40'</td>
<td>54</td>
<td>1620 (3.61)</td>
</tr>
</tbody>
</table>

For complete maintenance instructions and guidelines contact your ADS representative.

**INSTALLATION:**

The installation of the BayFilter system can be performed by the same contractor performing the installation of piping and underground utilities. The installation process is very simple and consistent whether installing the system in a manhole, precast vault, or cast in place vault. Once the containment system has been installed the filter system is placed inside the vault. The installation consists of the drainage manifold, energy dissipater level spreader, and cartridges. Because the BayFilters are modular the system can be installed very quickly. The cartridges should be installed after the site has been stabilized to avoid unnecessary filter replacements from construction related activities.

The maintenance cycle of the system will be driven mostly by the actual solids load on the filter. The system should be monitored periodically to make certain that the system is operating correctly. Maintenance cycles can be variable depending on storm events and sediment loads. For complete maintenance instructions and guidelines contact your ADS representative.

**APPLICATIONS:**

As with all stormwater treatment devices the BayFilter systems require periodic maintenance to continue operating at the design flow rate and efficiency. Maintenance includes the removal and replacement of each cartridge and cleaning of the containment system with a vacuum truck. Maintenance should be performed by trained personnel.

The maintenance cycle of the system will be driven mostly by the actual solids load on the filter. The system should be monitored periodically to make certain that the system is operating correctly. Maintenance cycles can be variable depending on storm events and sediment loads. For complete maintenance instructions and guidelines contact your ADS representative.

**GUIDELINES CONTACT YOUR ADS REPRESENTATIVE.**

**CONFIGURATION:**

There are several different options available for the BayFilter configurations but the most common are the Manhole filter, precast vault filter, and cast-in-place filter. The Manhole configuration is the most economical version of the system. Treatment Capacities are as follows:

<table>
<thead>
<tr>
<th>Treatment Capacity</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Minimum Treatment Flow gpm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vault Fill</td>
<td>72</td>
<td>96</td>
<td>207 (0.47)</td>
</tr>
<tr>
<td>Air Release</td>
<td>38</td>
<td>46</td>
<td>180 (0.40)</td>
</tr>
</tbody>
</table>

**TREATMENT CAPACITIES:**

<table>
<thead>
<tr>
<th>Vault Size</th>
<th>Maximum Number</th>
<th>Maximum Treatment Flow</th>
</tr>
</thead>
<tbody>
<tr>
<td>8' x 10'</td>
<td>10</td>
<td>300 (0.67)</td>
</tr>
<tr>
<td>8' x 12'</td>
<td>13</td>
<td>390 (0.87)</td>
</tr>
<tr>
<td>8' x 14'</td>
<td>15</td>
<td>450 (1.00)</td>
</tr>
<tr>
<td>10' x 16'</td>
<td>21</td>
<td>630 (1.40)</td>
</tr>
<tr>
<td>10' x 20'</td>
<td>27</td>
<td>810 (1.80)</td>
</tr>
<tr>
<td>10' x 26'</td>
<td>33</td>
<td>990 (2.21)</td>
</tr>
<tr>
<td>10' x 32'</td>
<td>42</td>
<td>1260 (2.81)</td>
</tr>
<tr>
<td>10' x 38'</td>
<td>51</td>
<td>1530 (3.41)</td>
</tr>
<tr>
<td>10' x 40'</td>
<td>54</td>
<td>1620 (3.61)</td>
</tr>
</tbody>
</table>

**INSTALLATIONS:**

Installations of Precast BayFilter systems can be used independently or in conjunction with a detention system. Pretreatment with a BaySeparator should be considered to extend the filter life.

The last option available is the cast-in-place BayFilters. On sites that require more the 54 cartridges or where the precast and manhole system is not practical, a cast in place vault can provide the solution. High flow rates, shallow installations, very flat sites, and limited footprints can be reasons for a cast in place system.

**PROVEN SAND FILTER PRINCIPLE TO MOVE POLLUTANTS SUCH AS SEDIMENTS, OIL, METALS, ORGANICS AND NUTRIENTS.**
BayFilter™

The Exact System Needed for Large & Small Sites

**DESIGN**
BayFilter systems are designed to be offline systems and can be designed for the water quality filter or volume. Each configuration should be evaluated to determine the best utilization.

When the water quality flow rate is used in the treatment flow will be less than the peak discharge from the site. A bypass structure allows the filter system to be placed offline with lower flows routed to while higher peak storms are bypassed around the system. Use of a BaySeparator as a pretreatment device can prevent the filtration of treating many larger particles which are more easily removed by gravity separation. Use of pretreatment can extend the life of the more costly filter system.

In the design of the system there is usually a higher flow rate treated per cartridge but reduced treated sediment load per cartridge. Flow based configurations are generally limited by flow capacity and not sediment loading.

It is advisable for these configurations to utilize a BaySeparator prior to the pretreatment system as a pretreatment. For volume-based systems the BayFilter is used on the outlet side of the treatment system. This provides not only the pretreatment for the site but the ability to route the water quality volume through the BayFilter. These types of designs are generally fewer cartridges with higher sediment loads.

The offline design of the systems provides for control of sediment scour and re-suspension. The larger storms which could scour and remove sediment from the structure are routed around the structure and prevent introduction of flow which could deposit sediments downstream.

**NOW MANY CARTRIDGES**
Each BayFilter system relies on a collection of individual cartridges to achieve the desired removal efficiency as the correct number of cartridges is important. Too few cartridges will result in a system that does not meet performance or requires frequent maintenance while too many results in a system that is too large and overly expensive. To determine the number of cartridges three factors must be considered:

- Flow capacity of the system
- Treated sediment load
- Jurisdiction

In general BayFilter cartridges are designed to handle 30gpm (0.087 ft³/sec) per cartridge. When combined with treated sediment load and jurisdiction requirements the minimum number of cartridges necessary can be determined. More complete design parameters and guidelines are available upon request.

**SPECIFICATIONS**

**INTERNAL COMPONENTS**
- perforated Collector Manifold shall be provided according to ASTM C-46 and CS196. Perforated collector manifolds shall be provided by BayWater Technologies, Inc.
- PVC standard piping. All internal PVC pipe and fittings shall meet ASTM D2165. Manifold piping shall be provided to the contractor perforated per-cut and pre-assembled.
- Filter Cartridges. Drainage cup of the filter cartridges shall be substantively constructed of polyethylene or equivalent material. Filtration media shall be arranged in a layered fashion to achieve optimum filtration area. An outline plate shall be supplied with each cartridge to restrict flow rate to a maximum of 30 gpm.
- Filter media. Filter media shall be in BaySeparate Technology’s 517 filter media which consists of an effective particle size of not more than 0.45mm, shall have an angular granular shape, a hardness of 7, 0.3% silica, and low metal nutrients. The media shall also include a blend of Perlite and Activated Alumina.
- Flow Separator- Energy Dispenser: Shall be constructed of polyethylene or equivalent material.

**PERFORMANCE**
- The downstream fiber system shall be an offline design capable of treating a flow rate of 30 gpm. The downstream treatment flow will be 80% of all sediments and solids in the prefilter.
- The downstream fiber system’s cartridge units shall have no moving parts.
- The downstream treatment unit shall be designed and sized to reduce 95% of total suspended solids, 45% of total phosphorus, 65% of turbidity, 65% of total and 60% of total BODs based on field data collection with the Technology Acceptance/Readiness Partnership Tier II test protocol.
- The downstream filtration system shall reduce incoming turbidity (measured as NTU#) by 65% or more and shall not have any components that leach nitrate or phosphates.
- The downstream fiber systems cartridge shall be equipped with a hydrodynamic backwash mechanism to extend the filter’s life and optimize its performance. This flow shall be utilized.
- The downstream filtration system shall have a minimum of 65% of the incoming Total Phosphorous (TP) load.
- The downstream filtration system’s cartridges shall have the following minimum flow and sediment load capacities:

**INSTALLATION**
Installation of the BayFilter System(s) will be performed by manufacturer’s Installation Instructions.

For more information on BayFilter products, please contact our Customer Service Representatives at 1-860-921-9710.

**DISCLAIMER**
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