Fiberglass Underground Oil/Water Separators

The solution for separating oil and water
Xerxes Oil/Water Separators

Another Innovative Solution from Xerxes

The Xerxes underground oil/water separators, which allow customers to select the appropriate flow rate and spill capacity for their specific needs, are simply one example of the company's reputation for innovation. Xerxes was the first to make fiberglass underground tanks and separators with integrally constructed ribs, which dramatically increase the tanks' robustness. Xerxes was also the first to make fiberglass underground double-wall storage tanks and to obtain the Underwriters Laboratories (UL) Subject 2215 listing. The added design flexibility Xerxes brings to its oil/water separators couldn't have come at a better time.

Solving a Growing Environmental Challenge

Today, more and more regulations are in place to diminish the impact of oily water runoff on the environment. To address environmental and regulatory concerns, Xerxes offers an oil/water separator that is:
- cost-effective,
- rustproof,
- lightweight,
- designed to meet customer site-specific needs,
- offered as a UL Subject 2215-listed option,
- made with vertical-tube coalescers that are effective and removable for maintenance,
- backed with a Xerxes limited warranty.

The Unsurpassed Performance of Fiberglass

Since the early 1970s, the advantages of fiberglass underground tanks have been proven repeatedly. Long used for petroleum storage, fiberglass tanks today account for an estimated 95 percent of all underground tank purchases by major oil companies. The advantage of fiberglass is even more compelling when water is added to the mix:
- Xerxes oil/water separators require no corrosion monitoring. They eliminate the possibility of either internal or external rust.
- Lightweight fiberglass separators are easier to install than steel separators and eliminate the need for heavy rental equipment during installation.
- Xerxes combines high-quality resin and glass for its robust fiberglass oil/water tanks. Xerxes tanks and unique integral ribs are made of identical materials, and are manufactured simultaneously, providing a strong, long-lasting separator tank.

Capacities and Models for Every Need

Xerxes fiberglass separators are available in:
- single-wall and double-wall models,
- sizes from 600 gallons to 50,000 gallons,
- influent flow rates from 0 to more than 4,000 gallons per minute,
- models that meet UL Subject 2215 listing requirements,
- double-wall models with Xerxes' hydrostatic monitoring system that provides continuous leak protection and allows owners to conduct a TRUCHEK® tank-tightness test that meets EPA criteria and has UL third-party verification.

Meeting or Exceeding Exacting Standards

You can specify Xerxes oil/water separators with complete confidence that they meet the performance standards Xerxes has outlined. Xerxes' technical representatives can analyze the basic information provided by you, the owner, to specify the oil/water separator that meets your job requirements. The separators are designed and constructed in accordance, as applicable, with the following standards:
- UL Subject 2215,
- UL 1316,
- U.S. Coast Guard Test Method 46 CFR 162.050,
- API manual on disposal of refinery wastes,
- API bulletin No. 1630, first edition,
- API bulletin No. 421,
- EPA Test Methods 413.1 and 413.2,
- Stokes Law.

Options for Washdown Applications

As regulations governing oil and grease discharge increase, consumers need systems to handle the equipment washdown that can contaminate our groundwater. Xerxes offers separator options to handle such oily discharge from cars, trucks and equipment that generate this washdown. In washdown applications, significant performance variance can be created by such factors as detergents, flow rates and influent oil level.

Installation

All Xerxes oil/water separators should be installed according to the Xerxes Installation Manual and Operating Guidelines for Single-Wall and Double-Wall Fiberglass Underground Storage Tanks, and Oil/Water Separator Operating & Maintenance Manual in effect at time of installation.
A. Xerxes Separator: The separator is rustproof and requires no cathodic protection.

B. Unique Polypropylene Vertical-Tube Coalescers: The coalescers enhance oil/water separation through its random tube matrix system.

C. Fiberglass Inlet Diffuser: The diffuser is designed to direct flow, reduce turbulence and distribute the flow evenly over the cross-sectional area of the separator.

D. Fiberglass Clean-Water Collector: The collector is designed to direct flow, allow clean-water discharge and minimize turbulence in the oil/water separator.

E. Fiberglass Sludge Baffle: The baffle is intended to prevent heavy solids and sludge from entering the coalescer area.

F. 4-Inch NPT Duplex Fitting: The fitting provides access for a high-low-level gauge and pump out.

G. Optional Fiberglass Reservoir: The double-wall separator can be shipped with an interstice that is factory-filled with monitoring fluid, which provides a positive-pressure hydrostatic monitoring system to detect a leak.

H. Optional 4-Inch Monitor Fitting: The fitting allows placement of a probe in a dry interstitial space.
Unique Coalescer for Superior Performance and Maintenance

At the heart of the Xerxes separator is a unique vertical-tube coalescer. The random tube matrix design provides laminar flow important to proper separation. Small oil droplets are attached to the polypropylene tube matrix because of its oil-attracting characteristics. Once attached, they provide additional surface area to the tubes while attracting other small oil droplets with their own inherent properties. This process combines oil droplets until they are large enough to rise to the surface to await periodic removal. The coalescer is lightweight and removable for maintenance.

Performance Specifications

The Xerxes oil/water separator:
- Removes free-floating oils (not chemically emulsified or dissolved) and settleable sands from oil/water mixtures,
- Removes free-floating oil droplets to a size of 20 microns or larger,
- Attains minimum effluent quality of 10 ppm.

These performance claims are based on the following system parameters:
- Influent must be gravity fed to the separator to prevent overpressurizing of the tank and mechanical emulsification of the stored product.
- Maximum influent shall be 1,000 ppm of free oil.
- Influent oil/water mixture temperatures must be between 40° F and 150° F.
- Ambient air temperatures must be between 0° F and 140° F.
- Separator must be vented at all times.
- Influent oil specific gravity must be between .68 and .95.
- Flexible connectors must be installed on inlet and outlet pipes if piping is larger than 6-inch diameter.
- An interceptor tank should be installed prior to the oil/water separator inlet pipe to collect heavy debris that could clog coalescer tubes.
- The oil/water separator must be installed and periodically maintained in accordance with the Xerxes Installation Manual and Operating Guidelines for Fiberglass Underground Storage Tanks, and the Xerxes Oil/Water Separator Operating & Maintenance Manual in effect at time of installation.

Note: The tank will not separate alcohols, solvents or soapy solutions. Solvents may not be compatible with the tank or coalescer tubes and should not be introduced. Doing so may result in tank failure, leaks and environmental damage.

Vertical-Tube Coalescer (VTC)

Xerxes oil/water separators utilize a unique polypropylene vertical-tube coalescer that provides enhanced oil/water separation.

Standard Tank Notes

- Please contact your Xerxes representative for sizes not shown on standard oil/water separator data charts.
- Standard pipe fittings to the primary tank are 150-pound bolt-pattern flanges (inlet and outlet sizes vary) and 4-inch NPT couplings.
- If the double-wall separator includes a hydrostatic system, a fiberglass reservoir will be installed on top of the tank.

Electronic Monitoring System

Xerxes can provide optional electronic equipment to monitor the oil level in the oil/water separator, as well as electronic leak-detection systems for double-wall separators.

When a UL 2215 separator is specified, an electronic liquid-level monitoring system must be included in the OWS design and shipped with it.
### 4-Foot-Diameter Single-Wall and Double-Wall Oil/Water Separators

**Gallons-Per-Minute (GPM) Flow Rate Chart**
(Based on a maximum 1,000 ppm influent and 10 ppm effluent)

<table>
<thead>
<tr>
<th>Number of Coalescer Rows</th>
<th>Standard Pipe Size (inches)</th>
<th>Separator Size (nominal gallons)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>1,000</td>
</tr>
<tr>
<td>1</td>
<td>4</td>
<td>34</td>
</tr>
<tr>
<td>2</td>
<td>6</td>
<td>68</td>
</tr>
<tr>
<td>3</td>
<td>6</td>
<td>102</td>
</tr>
<tr>
<td>4</td>
<td>6</td>
<td>136</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Nominal Oil Storage (gallons)</th>
<th>100</th>
<th>70</th>
<th>60</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Emergency Spill Capacity (gallons)</td>
<td>600</td>
<td>400</td>
<td>360</td>
</tr>
<tr>
<td></td>
<td>Length</td>
<td>SW</td>
<td>DW</td>
<td>SW</td>
</tr>
<tr>
<td></td>
<td></td>
<td>11'-3-7/8&quot;</td>
<td>11'-4-1/4&quot;</td>
<td>8'-0&quot;</td>
</tr>
<tr>
<td></td>
<td>Nominal Weight Dry (pounds)</td>
<td>SW</td>
<td>DW</td>
<td>SW</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1,400</td>
<td>1,700</td>
<td>2,800</td>
</tr>
<tr>
<td></td>
<td>Nominal Weight with Monitoring Fluid (pounds)</td>
<td>DW</td>
<td>1,900</td>
<td>1,200</td>
</tr>
</tbody>
</table>

### 6-Foot-Diameter Single-Wall and Double-Wall Oil/Water Separators

**Gallons-Per-Minute (GPM) Flow Rate Chart**
(Based on a maximum 1,000 ppm influent and 10 ppm effluent)

<table>
<thead>
<tr>
<th>Number of Coalescer Rows</th>
<th>Standard Pipe Size (inches)</th>
<th>Separator Size (nominal gallons)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>6,000</td>
</tr>
<tr>
<td>1</td>
<td>6</td>
<td>73</td>
</tr>
<tr>
<td>2</td>
<td>6</td>
<td>146</td>
</tr>
<tr>
<td>3</td>
<td>8</td>
<td>219</td>
</tr>
<tr>
<td>4</td>
<td>8</td>
<td>292</td>
</tr>
<tr>
<td>5</td>
<td>10</td>
<td>365</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Nominal Oil Storage (gallons)</th>
<th>580</th>
<th>380</th>
<th>290</th>
<th>240</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Emergency Spill Capacity (gallons)</td>
<td>3,600</td>
<td>2,400</td>
<td>1,800</td>
<td>1,200</td>
</tr>
<tr>
<td></td>
<td>Length</td>
<td>SW</td>
<td>DW</td>
<td>SW</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>30'-8-3/4&quot;</td>
<td>30'-8-3/4&quot;</td>
<td>21'-11-1/8&quot;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Nominal Weight Dry (pounds)</td>
<td>SW</td>
<td>DW</td>
<td>SW</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>5,100</td>
<td>6,000</td>
<td>4,000</td>
<td>4,900</td>
</tr>
<tr>
<td></td>
<td>Nominal Weight with Monitoring Fluid (pounds)</td>
<td>DW</td>
<td>7,300</td>
<td>6,200</td>
<td>3,000</td>
</tr>
</tbody>
</table>

* Only available in double-wall models.  **Only available in single-wall models.
### 8-Foot-Diameter Single-Wall and Double-Wall Oil/Water Separators

**Gallons-Per-Minute (GPM) Flow Rate Chart**  
(Based on a maximum 1,000 ppm influent and 10 ppm effluent)

<table>
<thead>
<tr>
<th>Number of Coalescer Rows</th>
<th>Standard Pipe Size (inches)</th>
<th>Separator Size (nominal gallons)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>6</td>
<td>12,000 10,000 8,000 6,000</td>
</tr>
<tr>
<td>1</td>
<td>6</td>
<td>76 76 76 76</td>
</tr>
<tr>
<td>2</td>
<td>6</td>
<td>152 152 152 152</td>
</tr>
<tr>
<td>3</td>
<td>8</td>
<td>228 228 228 228</td>
</tr>
<tr>
<td>4</td>
<td>8</td>
<td>304 304 304 304</td>
</tr>
<tr>
<td>5</td>
<td>10</td>
<td>380 380 380 380</td>
</tr>
<tr>
<td>6</td>
<td>10</td>
<td>456 456 456</td>
</tr>
<tr>
<td>7</td>
<td>10</td>
<td>532 532 532</td>
</tr>
<tr>
<td>8</td>
<td>12</td>
<td>608 608 608</td>
</tr>
<tr>
<td>9</td>
<td>12</td>
<td>684 684 684</td>
</tr>
<tr>
<td>10</td>
<td>12</td>
<td>760 760 760</td>
</tr>
<tr>
<td>11</td>
<td>12</td>
<td>836 836 836</td>
</tr>
<tr>
<td>12</td>
<td>12</td>
<td>912 912</td>
</tr>
<tr>
<td>13</td>
<td>14</td>
<td>988 988</td>
</tr>
<tr>
<td>14</td>
<td>14</td>
<td>1,064 1,064</td>
</tr>
<tr>
<td>15</td>
<td>14</td>
<td>1,140 1,140</td>
</tr>
<tr>
<td>16</td>
<td>14</td>
<td>1,216 1,216</td>
</tr>
<tr>
<td>17</td>
<td>14</td>
<td>1,292</td>
</tr>
<tr>
<td>18</td>
<td>14</td>
<td>1,368</td>
</tr>
<tr>
<td>19</td>
<td>14</td>
<td>1,444</td>
</tr>
<tr>
<td>20</td>
<td>16</td>
<td>1,520</td>
</tr>
</tbody>
</table>

**Nominal Oil Storage (gallons)**

| Gallons | 1,150 | 970 | 785 | 600 |

**Emergency Spill Capacity (gallons)**

| Gallons | 7,200 | 6,000 | 4,800 | 3,600 |

**Length**

| SW, DW | 37'-1/2" | 31'-6-1/2" | 26'-1/2" | 20'-6-1/2" |

**Nominal Weight Dry (pounds)**

| SW | 7,400 | 6,300 | 5,300 | 4,800 |
| DW | 9,200 | 7,800 | 6,400 | 5,700 |

**Nominal Weight with Monitoring Fluid (pounds)**

<p>| DW | 12,000 | 10,200 | 8,200 | 7,100 |</p>
<table>
<thead>
<tr>
<th>Number of Coalescer Rows</th>
<th>Pipe Size (inches)</th>
<th>Separator Size (nominal gallons)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>30,000</td>
</tr>
<tr>
<td>1</td>
<td>6</td>
<td>114</td>
</tr>
<tr>
<td>2</td>
<td>8</td>
<td>228</td>
</tr>
<tr>
<td>3</td>
<td>10</td>
<td>342</td>
</tr>
<tr>
<td>4</td>
<td>10</td>
<td>456</td>
</tr>
<tr>
<td>5</td>
<td>10</td>
<td>570</td>
</tr>
<tr>
<td>6</td>
<td>12</td>
<td>684</td>
</tr>
<tr>
<td>7</td>
<td>12</td>
<td>798</td>
</tr>
<tr>
<td>8</td>
<td>12</td>
<td>912</td>
</tr>
<tr>
<td>9</td>
<td>14</td>
<td>1,026</td>
</tr>
<tr>
<td>10</td>
<td>14</td>
<td>1,140</td>
</tr>
<tr>
<td>11</td>
<td>14</td>
<td>1,254</td>
</tr>
<tr>
<td>12</td>
<td>14</td>
<td>1,368</td>
</tr>
<tr>
<td>13</td>
<td>14</td>
<td>1,482</td>
</tr>
<tr>
<td>14</td>
<td>16</td>
<td>1,596</td>
</tr>
<tr>
<td>15</td>
<td>16</td>
<td>1,710</td>
</tr>
<tr>
<td>16</td>
<td>16</td>
<td>1,824</td>
</tr>
<tr>
<td>17</td>
<td>16</td>
<td>1,938</td>
</tr>
<tr>
<td>18</td>
<td>18</td>
<td>2,052</td>
</tr>
<tr>
<td>19</td>
<td>18</td>
<td>2,166</td>
</tr>
<tr>
<td>20</td>
<td>18</td>
<td>2,280</td>
</tr>
<tr>
<td>21</td>
<td>18</td>
<td>2,394</td>
</tr>
<tr>
<td>22</td>
<td>18</td>
<td>2,508</td>
</tr>
<tr>
<td>23</td>
<td>18</td>
<td>2,622</td>
</tr>
<tr>
<td>24</td>
<td>18</td>
<td>2,736</td>
</tr>
<tr>
<td>25</td>
<td>18</td>
<td>2,850</td>
</tr>
<tr>
<td>26</td>
<td>20</td>
<td>2,964</td>
</tr>
<tr>
<td>27</td>
<td>20</td>
<td>3,078</td>
</tr>
<tr>
<td>28</td>
<td>20</td>
<td>3,192</td>
</tr>
<tr>
<td>30</td>
<td>20</td>
<td>3,420</td>
</tr>
<tr>
<td>31</td>
<td>20</td>
<td>3,534</td>
</tr>
<tr>
<td>32</td>
<td>20</td>
<td>3,648</td>
</tr>
<tr>
<td>33</td>
<td>20</td>
<td>3,762</td>
</tr>
<tr>
<td>34</td>
<td>24</td>
<td>3,876</td>
</tr>
<tr>
<td>35</td>
<td>24</td>
<td>3,990</td>
</tr>
<tr>
<td>36</td>
<td>24</td>
<td>4,104</td>
</tr>
<tr>
<td>37</td>
<td>24</td>
<td>4,218</td>
</tr>
</tbody>
</table>

Nominal Oil Storage (gallons) 3,010 2,535 1,970 1,500 1,185
Emergency Spill Capacity (gallons) 18,000 15,000 12,000 9,000 7,200
Length SW, DW 55'-9-3/4" 47'-6-3/4" 37'-8-3/4" 29'-5-3/4" 24'-1/4"
Nominal Weight Dry (pounds) SW 18,700 15,000 10,900 7,800 6,000
DW 21,900 17,700 13,400 9,000 7,600
Nominal Weight with Monitoring Fluid (pounds) DW 26,300 21,700 16,800 11,600 9,600
Guide Specifications: UL-Listed Oil/Water Separator

Short Form
The contractor shall provide fiberglass reinforced plastic (FRP) underground oil/water separator as shown on the drawings. The separator size, fittings and accessories shall be as shown on the drawings. The fiberglass separator shall be manufactured by Xerxes Corporation.

The separator shall be tested and installed according to the Xerxes Installation Manual and Operating Guidelines for Single-Wall and Double-Wall Fiberglass Underground Storage Tanks, and the Xerxes Oil/Water Separator Operating & Maintenance Manual in effect at time of installation.

Long Form
Part I: General
1.01 Quality Assurance
A. Acceptable Manufacturer: Xerxes Corporation
B. Governing Standards, as applicable:
   1. Manufacturer shall be able to provide documentation that the separator has been built to the applicable requirements of Underwriters Laboratories (UL) Subject 2215.
   2. Manufacturer shall be able to provide documentation that the separator shell has been tested by an independent third party to the applicable requirements of U.S. Coast Guard Test Method 46 CFR 162.050.

Part II: Products
2.01 Fiberglass Underground Oil/Water Separator
A. Loading Conditions: Separator shall meet the following design criteria:
   1. Internal Load: Primary and secondary tanks shall withstand a 5-psig air-pressure test with a 5:1 safety factor. Installer shall test each tank for leakage prior to installation. Maximum test pressure is 5 psig.
   3. External Hydrostatic Pressure and Burial Depth: Separator shall be capable of being buried in ground with 7 feet of overburden over the top of the tank, the hole fully flooded, and a double-wall separator safety factor of 5:1 and a single-wall safety factor of 3:1.
   4. Separator shall support accessory equipment—such as manways, manway extensions, collar risers, inlet and outlet piping—as shown on separator drawings and when installed according to separator manufacturer's recommendations.
   5. Separator shall be manufactured with integral ribs for structural integrity.
B. Product Storage:
   1. Separator shall be capable of handling liquids with specific gravity up to 1.1.
   2. Primary tank shall be vented to atmospheric pressure.
   3. Separator shall be capable of handling water, grease and oils at temperatures not to exceed 150°.
C. Materials:
   1. Separator shell shall be manufactured of 100% resin and glass-fiber reinforcement. No sand fillers.
   2. Separator coalescer media shall be a polypropylene vertical-tube coalescer.
   3. Coalescer tubes and associated internal mounting hardware shall be rustproof.
D. Separator Dimensions and Capability:
   1. Separator shall have nominal capacity of _____ gallons.
   2. Separator shall have nominal outside diameter of ____ feet.
   3. Maximum influent flow rate in gallons per minute shall be ____ gallons per minute.
   4. Total oil spill capacity shall be ____ gallons.
   5. Influent oil specific gravity shall range between ____ and ____.
   6. Specific application for the oil/water separator is ________________.
E. Interstitial Space:
   1. Separator shall have a space between the primary and secondary walls to allow for the free flow and containment of leaked product from the primary tank. The space also allows the insertion of a monitoring device through a monitor fitting.

2.02 Accessories
A. Manways:
   1. All separators shall require at least one manway with a bolted cover.
   2. All manways shall be flanged and 22-inch-, 30-inch- or 36-inch-diameter (based on separator drawing), complete with UL-listed cover, gaskets and hardware.
   3. Location(s) are shown on separator drawing.
   4. A manway cover shall include at least one 4-inch NPT steel fitting.
   5. An FRP manway extension with a minimum height of 24 inches shall be provided.
B. Inlet Fitting:
   1. All separators shall be equipped with one FRP, factory-installed, flanged inlet nozzle.
   2. All threaded fittings shall have machine tolerances in accordance with the ANSI standard for each fitting size.
   3. Location is shown on separator drawings.
C. Outlet Nozzle and Clean-Water Collector:
   1. All separators shall be equipped with one FRP, factory-installed, flanged outlet nozzle and clean-water collector.
   2. Location is shown on separator drawings.
D. Fittings:
   1. Single fittings on a UL-listed separator shall be
located along the top centerline of the separator or in a manway lid.

2. Duplex fittings shall be located on each side of the separator’s centerline.

3. All standard NPT threaded fittings shall be constructed of carbon steel.

4. All standard NPT threaded fittings shall be half-couplings, and of 2-inch, 4-inch or 6-inch diameter. Reducers are to be used for smaller sizes where shown and provided by contractor.

5. All NPT fittings shall withstand a minimum of 150 foot-pounds of torque and 1,000 foot-pounds of bending, both with a 2:1 safety factor.

6. All FRP nozzles shall be flat-faced, flanged and gusseted, and conform to ANSI B16.5 150-pound bolting pattern.

7. Each interstitial space monitor fitting or reservoir fitting shall consist of a 4-inch NPT fitting.

E. Sludge Baffle:
   1. All separators shall have a FRP grate on which the coalescer packs will be placed to keep sludge build-up from interfering with the coalescer media.

F. Lifting Lugs:
   1. All separators shall have lifting lug(s) that are capable of withstanding weight of separator with a safety factor of 2:1.

G. Optional Attached Collars:
   1. Attached collars are optional and shall be constructed of fiberglass reinforced plastic and shall be of 42-inch- or 48-inch-diameter, as supplied by separator manufacturer.
   2. Attached collars shall be factory-installed.
   3. Location shall be as shown on separator drawings.

H. Optional Attached Collar Risers:
   1. Attached collar risers are optional and shall be constructed of fiberglass reinforced plastic and shall be used with 42-inch- or 48-inch-diameter attached collars, as supplied by separator manufacturer.
   2. Attached collar risers shall be attached to collars by contractor with adhesive supplied by separator manufacturer.
   3. Location shall be as shown on separator drawings.

I. Optional Anchor Straps:
   1. Straps are optional and shall be FRP anchor straps as supplied by separator manufacturer.
   2. Number and location of straps shall be shown on separator drawings.

J. Optional Ladders:
   1. Ladders are optional and shall be the standard ladder as supplied by separator manufacturer.
   2. Ladder material (fiberglass or aluminum) shall be as shown on separator drawings.

2.03 Optional Hydrostatic Leak Monitoring System

A. General:
   1. The separator manufacturer shall offer the option of a continuously monitored, hydrostatic head-pressure, leak-detection system.
   2. The leak-monitoring system shall be designed by the manufacturer to detect a leak in either the primary or secondary tank, at installations with or without groundwater.
   3. The hydrostatic monitoring system shall be UL third-party verified and shall meet EPA criteria for tank-tightness testing through the use of TRUCH EK®. (For further information, refer to the Xerxes document on TRUCH EK®.)
   4. The leak-detection performance of the monitoring system shall be tested and verified by a qualified independent consultant to detect leaks as small as 0.1 gallons per hour with a 95% probability of detection and a 5% probability of a false alarm.

B. Requirements:
   1. The monitoring system shall include an interstice factory-filled with monitoring fluid, and a fiberglass reservoir mounted directly on top of the separator to provide for continuous monitoring of the fluid level.
   2. The solution used in the interstitial space of the separator shall be compatible with the separator and shall be a contrasting color to the separator surface to facilitate visual inspection of the separator for leaks prior to burial.
   3. The interstice between the primary and secondary tanks must be vented to atmosphere.
   4. The reservoir shall be fitted with one 4-inch NPT fitting for installation of an electronic reservoir-level sensor, which shall be adjusted to a point midway between the high and low points of the reservoir sensor.

2.04 Electronic Liquid-Level Monitoring System

A. General:
   1. All UL-listed separators shall have an electronic liquid-level monitoring system, including a controller and a sensor.

B. Materials:
   1. The controller shall be UL-listed and shall have a NEMA 4X, weatherproof, corrosion-resistant enclosure.

C. Requirements:
   1. The controller shall have an audio-visual alarm activated by a float sensor.
   2. The controller shall provide for automatic pump-out capability.

Part III: Testing and Installation

3.01 Testing

A. Separator shall be tested according to the Xerxes Installation Manual and Operating Guidelines for Single-Wall and Double-Wall Fiberglass Underground Storage Tanks, and the Xerxes Oil/Water Separator Operating & Maintenance Manual in effect at time of installation.

3.02 Installation

A. Separator shall be installed according to the Xerxes Installation Manual and Operating Guidelines for
Limited Warranty
Underground Oil/Water Separator Tanks

Xerxes Corporation ("Xerxes") warrants to ("Owner") that our underground oil/water separator tanks, if installed, used and maintained in the United States in accordance with Xerxes' published specifications, instructions and operating guidelines, and all applicable laws and regulations, and if used solely for gravity separation of free oils and settleable sands at temperatures not to exceed 150°F:

1) Will not fail for a period of thirty (30) years from date of original delivery by Xerxes due to natural external corrosion of the tank.

2) Will not fail for a period of thirty (30) years from date of original delivery by Xerxes due to internal corrosion of the tank provided the tank is used solely for gravity separation of free oils and settleable sands from storm water runoff, at ambient temperatures.

3) Will not fail for a period of thirty (30) years from date of original delivery by Xerxes due to structural failure of the tank (defined as spontaneous breaking or collapse caused by material defects in materials or workmanship).

4) Will meet Xerxes' published specifications and will be free from material defects in materials and workmanship in the tank for a period of one (1) year following the date of original delivery by Xerxes.

Xerxes warrants to Owner that all Xerxes manufactured oil/water separator accessories, if installed, used, and maintained in the United States in accordance with Xerxes' published specifications, installation instructions and operating guidelines, and all applicable laws and regulations, will be free from material defects in materials and workmanship for a period of one (1) year following the date of original delivery by Xerxes.

This warranty only extends to the oil/water separator application supplied to Xerxes by the Owner. It is Xerxes' responsibility to obtain any approvals or permits which may be necessary for discharge or disposal of effluent and to review Xerxes' product specifications and instructions to determine suitability for use with Owner's waste.

If any oil/water separator is to be removed from an installation, moved to original Owner's new location and is intended for active service at the new location, the oil/water separator must be recertified by Xerxes in order to maintain the warranty as originally extended. The foregoing warranty does not extend to oil/water separators or accessories (collectively "Goods") damaged due to acts of God, war, terrorism, or failure of Goods caused, in whole or in part, by misuse, improper installation, storage, servicing, maintenance, or operation in excess of their rated capacity or contrary to their recommended use, whether intentional or otherwise, or any other cause or damage of any kind not the fault of Xerxes. Xerxes only warrants repairs or alterations performed by Xerxes or its authorized contractors. Xerxes does not warrant any product, components or parts manufactured by others.

Limited Warranty
Operating & Maintenance Manual in effect at time of installation.

Part IV: Warranty
4.01 Warranty
A. Warranty shall be manufacturer's standard limited warranty in effect at time of purchase.
This worksheet may be used as a guideline for determining the flow rate and appropriate sizing/number of coalescer rows for a separator.

Step 1: Use rainfall intensity chart to find rainfall amount in inches per hour (in./hr.) for the site, then calculate to determine feet per hour (ft./hr.):

Rainfall ________ in./hr. ÷ 12 in. = ___________ ft./hr.

Step 2: Measure stormwater drainage area to be protected by the oil/water separator, then determine square footage as follows:

Length ________ ft. x Width _______________ ft. = __________ sq.ft.

Step 3: Multiply the rainfall (ft./hr.) in Step 1 by the area (sq.ft.) in step 2 to determine the oil/water separator flow rate in cubic feet per hour (cu.ft./hr):

______________ ft./hr x _________________ sq.ft. = __________ cu.ft./hr.

Step 4: Multiply flow rate (cu.ft./hr.) from Step 3 by 0.1247 to convert flow rate to U.S. gallon per minute (gpm):

______________ cu.ft./hr. x 0.1247=_________ gpm.
Manufacturing Facilities

Anaheim, CA
Phone (714) 630-0012
Fax (714) 632-7133

Hagerstown, MD
Phone (301) 223-6961
Fax (301) 223-6836

Seguin, TX
Phone (830) 372-0090
Fax (830) 372-0321

Tipton, IA
Phone (563) 886-6172
Fax (563) 886-2042