



STATE OF WISCONSIN
Department of Agriculture,
Trade and Consumer Protection

Approval # 20230009
(Replaces #20190005)

Bureau of Weights and Measures
Storage Tank Regulation
P.O. Box 7837
Madison, WI 53707-7837

Wisconsin ATCP 93

Material Approval

Equipment: Automatic Tank Gauging, Volumetric Tank Tightness Testing, Line Leak Detection, Liquid and Vapor Monitoring, and Secondary Containment Leak Detection Systems

Manufacturer: Veeder-Root Company
125 Powder Forest Drive
P.O. Box 2003
Simsbury, CT 06070

Expiration of Approval: December 31, 2026

SCOPE OF EVALUATION

The sensing probes used with the Veeder-Root TLS 450, TLS 450Plus (8600), TLS 4 (8601), TLS 4i, and TLS 4c consoles; TLS 450, TLS 450Plus (8600), TLS 4, TLS 4i, TLS 4c (8601) with Continuous Statistical Leak Detection (CSLD); TLS 450, TLS 450Plus (8600), TLS 4, TLS 4i, TLS 4c (8601) with Manifold Tanks CSLD; Wireless Pressurized Line Leak Detector (WPLLD); Pressurized Line Leak Detector (PLLD); Digital Pressurized Line Leak Detector (DPLLD); dispenser pan/sump sensors, and the Secondary Containment Leak Detection System manufactured by Veeder-Root have been evaluated for use as leak detection equipment conforming to specified portions of **ss. ATCP 93.510** and **ATCP 93.515** of the current edition of the Wisconsin Flammable and Combustible Liquids Code.

This evaluation summary is condensed to provide the specific installation, application and operation parameters necessary to maintain the subject systems in compliance with the Wisconsin Administrative Code – ATCP 93.

DESCRIPTION AND USE

All versions of the Automatic Tank Gauges (ATG), Tank Tightness Testing (TTT), and line leak detection systems may be used with gasoline, diesel fuel, aviation fuel, solvents, and used oil: has to be pure oil-not mixtures of oils, gasoline or solvents, etc.

Alternative Fuel Note: Veeder-Root has to test and approve all biodiesel blends, including B100, before any of the ATG probes can be used to meet Wisconsin leak detection requirements. This is not a material compatibility test, rather a functionality test due to possible variations in product specific gravity which may affect float operation. PLLD and sensor performance and compatibility are not affected by any biodiesel blend.

Ethanol based blends greater than 15% must use the Alternative Fuel Probes and compatible sensors. The ATG water float will detect level of pure water, not all ethanol/water mixtures. PLLD performance and compatibility are not affected by any ethanol blend.

Tank Leak Detection

Probe-Console Application Chart (Tanks)

Probe No.	Application	TLS 450, 450 Plus 8600	TLS 4, TLS 4i, TLS 4c 8601
8463	TTT or ATG	X	X
8473	TTT or ATG	X	
8463 with Manifolded Tanks and CSLD	Monthly Monitor	X	X
8473 with Manifolded Tanks and CSLD	Monthly Monitor	X	

The **8463** and **8473** probes measure changes in product volume by detecting changes in the level of a float using the magnetostrictive principle. These probes, when used with the appropriate consoles, have a preset leak detection threshold that cannot be changed by the operator, installer or technician. Results are reported as “Passed” or “Failed”.

The **CSLD** option operates in a long term sampling mode using statistical analysis to evaluate product and temperature levels collected by the probes every few seconds. The system identifies periods during product dispensing, stabilization periods after product delivery and periods of temperature instability and ignores data from those periods. The system prints a leak test report daily or on demand. The report indicates a pass, fail or inconclusive result using data from up to, but no more than, the preceding 28-day period.

Line Leak Detection

PLLD-Console Application Chart (Line)

PLLD No.	Application	TLS 450, TLS 450 Plus 8600
8484	3.0, 0.2, 0.1 gph	
8494	3.0, 0.2, 0.1 gph	
8590	3.0, 0.2, 0.1 gph	X

TLS Pressurized Line Leak Detectors

The Pressurized Line Leak Detector (PLLD) for both rigid and flexible piping, **8484 series**; Digital Pressurized Line Leak Detector (DPLLD) for both rigid and flexible piping, **8590 series** and the Wireless Pressurized Line Leak Detector for rigid piping, **8494 series**, operate during idle periods by independently pressurizing the pipeline system, then isolating the system from the pump and monitoring the pressure drop. The pressure drop is measured for several pressurization cycles, which are determined by the equipment. When the leak detection system determines that thermal effects have been sufficiently reduced, it compares the final pressure drop with a preset limit. If the pressure drop exceeds that limit, a leak is declared.

Liquid Sensors

The following chart shows the appropriate consoles to be used with sensing probes, and the typical application/capability for each sensor.

Sensor-Console Application Chart

Sensor No.	Application	TLS 450, 450 Plus 8600	TLS4, 4i, 4c 8601
794380-20X	Sump ¹	X	X
794380-320	Discr.-Disp. Pan ^{3,4}	X	X
794380-322	Discr.-Disp. Pan ^{3,4}	X	X
794380-321	Dispenser Pan ¹	X	X
794380-323	Sump-Pos. Sensitive ^{1,7,11}	X	X
794380-30X	Hydrostatic (FRP) ²	X	X
794380-344	Micro ^{1,11}	X	X
794380-343	Discriminating (FRP) ^{3,4}	X	X
794380-345	Interstitial (FRP- ethanol conc. 85% and lower)	X	X
794380-350	Discriminating-Sump ^{3,4}	X	X
794380-351	Sump ¹	X	X

794380-352	Discriminating-Sump ^{3,4}	X	X
794390-700	Vapor ⁵	X	X
794380-62X	Groundwater ³	X	X
794390-4X0	Steel Tank ^{1,11}	X	X
794390-40X	Fiberglass Tank ¹	X	X
794390-62X	Groundwater ³	X	X
857080-XXX	Discriminating-Sump ^{4,6,7,8,9}	X	X
847990-00X	Stand-Alone Disp. Pan ¹⁰		
857280-100	Vacuum Sensor for Pipe & Sumps 1 pipe or 1 sump		
857280-200	Vacuum Sensor for 1 steel tank		
857280-301	Vacuum Sensor for 4' Dia Fiberglass tanks		
857280-302	Vacuum Sensor for 6' Dia Fiberglass tanks		
857280-303	Vacuum Sensor for 8' Dia Fiberglass tanks		
857280-304	Vacuum Sensor for 10' Dia Fiberglass tanks		

- 1: Capable of detecting any liquid that exceeds the threshold level.
- 2: Monitors the level of ethylene glycol or calcium chloride solution in the interstitial of a fiberglass double wall tank.
- 3: May be used for gasoline, synthetic fuel, diesel fuel, fuel oil, aviation fuel, and solvents.
- 4: Capable of detecting water.
- 5: Gasoline or JP-4 jetfuel.
- 6: Gasoline or diesel fuel
- 7: Sensor will alarm if raised from bottom of containment sump.
- 8: Correct positioning of the magnetostrictive probe is essential; vertical positioning shall not cause binding of the rod and float, and mounting of probe must be secure and stable.
- 9: This probe can be used for sump integrity testing.
- 10: The Stand-alone dispenser pan sensor immediately shuts down AC power to the dispenser when 1.5 inches of fluid, as measured from the bottom of the sensor, is detected in the pan. There is not a separate reporting or alarm console associated with this equipment.
- 11: Approved for high alcohol fuels

TESTS AND RESULTS

Tank Tightness Testing Systems

The performance of the series **8463** and **8473** probes were determined in accordance with the EPA Protocol for volumetric tank testing methods. The probes were found to be capable of detecting a leak of 0.10 gallon per hour leak within a probability of detection (P_D) of 95 percent and probability of false alarm (P_{FA}) of less than 5 percent.

Automatic Tank Gauging Systems

The performance of the series **8463** and **8473** probes were determined in accordance with the EPA protocol for ATG systems.

The series **8463** and **8473** probes were certified to within the 95-5 ranges required by the EPA

protocols for detecting a leak of 0.20 gallon per hour.

CSLD Monthly Monitoring

The Veeder-Root **consoles with CSLD option** and **series 8463** or **8473** probe were evaluated using an alternative test procedure and were certified to within the 95-5 ranges required by the EPA protocols for detecting a leak of 0.20 gallon per hour.

Pressurized Line Leak Detectors

The Veeder-Root TLS series pressurized line leak detector consoles and probes, **series 8484**, and **8494** were evaluated using the Standard Test Procedures for Evaluating Leak Detection Methods: Pipeline Leak Detection Methods. The TLS 450 (8600) digital pressurized line leak detector **series 8590** was evaluated through comparison testing with the TLS 350 pressurized line leak detector consoles and series 8484 line leak detector combination by Ken Wilcox Associates.

When used as an automatic line leak detector with rigid and flexible piping, the PLLD and DPLLD systems are certified capable of detecting a 3 gallon per hour leak within the 95-5 ranges required by the EPA protocols.

When used as a monthly monitoring leak detector with rigid and flexible piping, the PLLD and DPLLD systems are certified capable of detecting a 0.2 per hour leak within the 95-5 ranges required by the EPA protocols.

When used as a line tightness test with rigid and flexible piping, the PLLD and DPLLD systems are certified capable of detecting a 0.1-gallon per hour leak within the 95-5 ranges required by the EPA protocols.

When used as an automatic line leak detector with rigid piping, the WPLLD system is certified capable of detecting a 3 gallon per hour leak within the 95-5 ranges required by the EPA protocols.

When used as a monthly monitoring leak detector with rigid piping, the WPLLD system is certified capable of detecting a 0.2 per hour leak within the 95-5 ranges required by the EPA protocols.

When used as a line tightness test with rigid piping, the WPLLD system is certified capable of detecting a 0.1-gallon per hour leak within the 95-5 ranges required by the EPA protocols.

Liquid Sensors

Testing of the liquid sensors was conducted in accordance with a modified version of the EPA Standard "Liquid-Phase Product Detectors" protocol.

Secondary Containment Leak Detection System- SCLD (Tank, Lines, Sumps)

The Veeder-Root Secondary Containment Leak Detection System (SCLD) was evaluated according to the "European Standard EN 13160-2, "Leak Detection Systems – Part 2: Pressure and vacuum system", May 2003. The system as designed meets all of the protocol requirements.

TLS 450 (8600) series and TLS 4 (8601) series Consoles:

Detailed here are examples of the typical Tank Leak Test History Report, Line Leak Passed Test History Report, and Sensor Status Report. (Site Name/Address is printed on 1ST sheet of report)

<p>SIMSBURY LAB UNIT VEEDER-ROOT WORLD HEADQUARTERS</p> <p>TANK LEAK TEST HISTORY - PASSED TEST RESULTS</p> <p>T 1: 113 RUL NORTH</p> <table border="1"> <thead> <tr> <th>REPORT TYPE</th> <th>DATE/TIME</th> <th>METHOD</th> <th>HOURS</th> <th>AVERAGE VOLUME</th> <th>% VOLUME</th> </tr> </thead> <tbody> <tr> <td>LAST GROSS</td> <td>09/11/17 09:04</td> <td>SLD</td> <td></td> <td>3434</td> <td>14.8</td> </tr> <tr> <td>LAST PERIODIC</td> <td>09/11/17 05:51</td> <td>CSLD</td> <td>44</td> <td>3507</td> <td>15.1</td> </tr> </tbody> </table>	REPORT TYPE	DATE/TIME	METHOD	HOURS	AVERAGE VOLUME	% VOLUME	LAST GROSS	09/11/17 09:04	SLD		3434	14.8	LAST PERIODIC	09/11/17 05:51	CSLD	44	3507	15.1	<p>NOV 17, 2009 9:44 AM</p> <p>SIMSBURY LAB UNIT VEEDER-ROOT WORLD HEADQUARTERS</p> <p>PRESSURE LINE LEAK REPORTS - PASSED TESTS HISTORY</p> <p>LN : 113 RUL NORTH</p> <table border="1"> <thead> <tr> <th>TEST TYPE</th> <th>DATE & TIME</th> <th>TEST METHOD</th> <th>GROSS TEST PREV 24 HOURS</th> <th>GROSS TEST SINCE MIDNIGHT</th> </tr> </thead> <tbody> <tr> <td>GROSS</td> <td></td> <td>PLLD</td> <td>0</td> <td>0</td> </tr> <tr> <td>LAST GROSS</td> <td>NOV 3, 2009 12:47 PM</td> <td>PLLD</td> <td></td> <td></td> </tr> <tr> <td>LAST PERIODIC</td> <td>AUG 24, 2009 2:58 PM</td> <td>PLLD</td> <td></td> <td></td> </tr> <tr> <td>LAST ANNUAL</td> <td>APR 7, 2009 3:06 AM</td> <td>PLLD</td> <td></td> <td></td> </tr> <tr> <td>FIRST PERIODIC</td> <td>AUG 24, 2009 2:58 PM</td> <td>PLLD</td> <td></td> <td></td> </tr> <tr> <td>FIRST PERIODIC</td> <td>APR 5, 2009 5:22 AM</td> <td>PLLD</td> <td></td> <td></td> </tr> <tr> <td>FIRST PERIODIC</td> <td>MAR 2, 2009 2:57 AM</td> <td>PLLD</td> <td></td> <td></td> </tr> <tr> <td>FIRST PERIODIC</td> <td>FEB 4, 2009 3:48 AM</td> <td>PLLD</td> <td></td> <td></td> </tr> <tr> <td>FIRST PERIODIC</td> <td>JAN 1, 2009 9:03 AM</td> <td>PLLD</td> <td></td> <td></td> </tr> <tr> <td>FIRST PERIODIC</td> <td>DEC 2, 2008 3:48 AM</td> <td>PLLD</td> <td></td> <td></td> </tr> <tr> <td>FIRST PERIODIC</td> <td>NOV 20, 2008 4:18 AM</td> <td>PLLD</td> <td></td> <td></td> </tr> <tr> <td>FIRST PERIODIC</td> <td>SEP 10, 2008 4:22 AM</td> <td>PLLD</td> <td></td> <td></td> </tr> <tr> <td>FIRST ANNUAL</td> <td>APR 7, 2009 3:06 AM</td> <td>PLLD</td> <td></td> <td></td> </tr> </tbody> </table>	TEST TYPE	DATE & TIME	TEST METHOD	GROSS TEST PREV 24 HOURS	GROSS TEST SINCE MIDNIGHT	GROSS		PLLD	0	0	LAST GROSS	NOV 3, 2009 12:47 PM	PLLD			LAST PERIODIC	AUG 24, 2009 2:58 PM	PLLD			LAST ANNUAL	APR 7, 2009 3:06 AM	PLLD			FIRST PERIODIC	AUG 24, 2009 2:58 PM	PLLD			FIRST PERIODIC	APR 5, 2009 5:22 AM	PLLD			FIRST PERIODIC	MAR 2, 2009 2:57 AM	PLLD			FIRST PERIODIC	FEB 4, 2009 3:48 AM	PLLD			FIRST PERIODIC	JAN 1, 2009 9:03 AM	PLLD			FIRST PERIODIC	DEC 2, 2008 3:48 AM	PLLD			FIRST PERIODIC	NOV 20, 2008 4:18 AM	PLLD			FIRST PERIODIC	SEP 10, 2008 4:22 AM	PLLD			FIRST ANNUAL	APR 7, 2009 3:06 AM	PLLD		
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<p>Tank Leak Test History Example: Last leak report for all active tanks.</p>	<p>Line Leak Report Example: Automatic, Monthly, and Annual.</p>																																																																																								

TLS 450 (8600) series and TLS 4 (8601) series Consoles, continued:

<pre> NOV 17, 2009 9:45 AM SIMSBURY LAB UNIT VEEDER-ROOT WORLD HEADQUARTERS SENSOR STATUS REPORT - ALL SENSORS # SENSOR LOCATION STATUS MS 1 NORMAL MS 2 NORMAL MS 3 NORMAL </pre>	<pre> NOV 17, 2009 9:45 AM SIMSBURY LAB UNIT VEEDER-ROOT WORLD HEADQUARTERS SELECTED RANGE: DATE RANGE: NOV 2, 2009 9:45 AM - NOV 17, 2009 9:45 AM SENSOR STATUS HISTORY REPORT - ALL SENSORS # SENSOR LOCATION STATUS ACTIVE CLEAR MS 1 COMMUNICATION ALARM 11-17-09 8:14A 11-17-09 8:18A MS 1 COMMUNICATION ALARM 11-17-09 8:03A 11-17-09 8:09A MS 1 COMMUNICATION ALARM 11-09-09 9:41A 11-09-09 9:46A MS 2 COMMUNICATION ALARM 11-17-09 8:14A 11-17-09 8:18A MS 2 COMMUNICATION ALARM 11-17-09 8:03A 11-17-09 8:09A MS 2 COMMUNICATION ALARM 11-09-09 9:41A 11-09-09 9:46A MS 3 NORMAL </pre>
<p>Sensor Status Report Example</p>	<p>Sensor Status History Report Example</p>

LIMITATIONS / CONDITIONS OF APPROVAL

General

- All monitoring equipment shall be installed, calibrated, operated, and maintained in accordance with the manufacturer instructions, and verified every 12 months for operability, proper operating condition, and proper calibration by a certified service technician. Records of sampling, testing, or monitoring shall be maintained in accordance with **ATCP 93.230**.
- The manufacturer shall submit for a revision to this Wisconsin Material Approval application if any of the functional performance capabilities of this equipment are revised. This would include, but not be limited to changes in software, hardware, or methodology.
- While 3rd party testing does determine a required minimum tank level, EPA leak detection regulations require testing of the portion of the tank system which routinely contains product. Consistent testing at low levels could allow a leak to remain undetected.

During leak testing, a minimum level of product in tank shall be maintained so as to ensure testing of the portion of the tank and/or piping that routinely contains product, regardless of testing system capability. For instance, if product levels are routinely maintained at 60%, but the leak detection system is capable of testing at 15% product level, then testing shall be performed at 60% levels.

- If performing a tank tightness test, minimum tank level shall be 95%, regardless of leak detection system minimum capability.

Tank Monitoring ATG's and Tightness Testing (static monitoring)

- Critical performance parameters for the series **8463** and **8473** probes with the **TLS-450 (8600) series**, consoles for annual 0.1 gph and monthly 0.2 gph testing: (Magnetostrictive probe)

Parameter	Value																																		
Maximum Tank Size ¹	Up to 15,000 gallons																																		
Software Version	N/A																																		
Minimum Tank Level (0.2 gph testing only- 0.1 gph testing must be performed at 95%)	Minimum product level is based on tank diameter as follows: <table border="1"> <thead> <tr> <th><u>Probe Working Length</u> (Tank ID in inches)</th> <th><u>Minimum Level (in)</u>²</th> </tr> </thead> <tbody> <tr><td>24 thru 26</td><td>9</td></tr> <tr><td>27 thru 36</td><td>12</td></tr> <tr><td>37 thru 47</td><td>15</td></tr> <tr><td>48 thru 58</td><td>18</td></tr> <tr><td>59 thru 69</td><td>21</td></tr> <tr><td>70 thru 79</td><td>24</td></tr> <tr><td>80 thru 90</td><td>27</td></tr> <tr><td>91 thru 101</td><td>30</td></tr> <tr><td>102 thru 111</td><td>33</td></tr> <tr><td>112 thru 122</td><td>36</td></tr> <tr><td>123 thru 133</td><td>39</td></tr> <tr><td>134 thru 143</td><td>42</td></tr> <tr><td>144 thru 154</td><td>45</td></tr> <tr><td>155 thru 165</td><td>48</td></tr> <tr><td>166 thru 175</td><td>51</td></tr> <tr><td>176 thru 177</td><td>54</td></tr> </tbody> </table>	<u>Probe Working Length</u> (Tank ID in inches)	<u>Minimum Level (in)</u> ²	24 thru 26	9	27 thru 36	12	37 thru 47	15	48 thru 58	18	59 thru 69	21	70 thru 79	24	80 thru 90	27	91 thru 101	30	102 thru 111	33	112 thru 122	36	123 thru 133	39	134 thru 143	42	144 thru 154	45	155 thru 165	48	166 thru 175	51	176 thru 177	54
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Waiting time between filling tank and test start ³ (Stabilization Time)	8 hours minimum (monthly -0.2 gph) 8 hrs. 15 min. minimum (annual- 0.1 gph)																																		
Waiting time between dispensing and test start	30 minutes minimum																																		
Minimum Test Period ⁴	2 hours (0.2 gph test) 3 hours (annual- 0.1 gph)																																		

- 1: Monthly and annual testing can only be performed on one tank at a time. If two or more tanks are manifolded together, an isolation valve (siphon break) will have to be installed so as to separate the tanks individually.
- 2: Minimum level from probe bottom is same as product level in tank, assuming the typical configuration where the probe touches the bottom of the tank.
- 3: There must be no delivery during waiting time.
- 4: There must be no delivery or dispensing during testing.

- Critical performance parameters for the **Series 8463 and 8473** probe with the **TLS-450 (8600) series**, consoles for annual 0.1 gph and monthly 0.2 gph testing: (Magnetostrictive probe)

Parameter	Value																																		
Maximum Tank Size ¹	Up to 20,000 gallons (0.1 gph) Up to 30,000 gallons (0.2 gph)																																		
Software Version	N/A																																		
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Waiting time between filling tank and test start ³ (Stabilization Time)	<p>8 hours minimum (0.2 gph test) For 0.1 gph testing the following times are to be matched with the corresponding test times below</p> <p>Scenario: A: 8 hours minimum B: 9 hours minimum C: 10 hours minimum D: 11 hours minimum</p>																																		
Waiting time between dispensing and test start	30 minutes minimum																																		
Minimum Test Period ⁴	<p>2 hours (0.2 gph test) For 0.1 gph match with scenario above</p> <p>Scenario: A: 5 hours minimum B: 4 hours minimum C: 3 hours minimum D: 2 hours minimum</p>																																		

1: Monthly and annual testing can only be performed on one tank at a time. If several tanks are manifolded together, an isolation valve will have to be installed so as to separate the tanks individually.

2: Minimum level from probe bottom is same as product level in tank, assuming the typical

configuration where the probe touches the bottom of the tank.

- 3: There must be no delivery during waiting time.
- 4: There must be no delivery or dispensing during testing.

Critical performance parameters for the **Series 8463** probe with the **TLS-4 (8601) series** consoles for monthly 0.1 gph and monthly 0.2 gph testing: (Magnetostrictive probe)

Parameter	Value
Maximum Tank Size ¹	Up to 20,000 gallons (0.1 gph) Up to 30,000 gallons (0.2 gph)
Software Version	N/A
Minimum Tank Level	50%
Waiting time between filling tank and test start ³ (Stabilization Time)	8 hours minimum
Waiting time between dispensing and test start	30 minutes minimum
Minimum Test Period ⁴	3 hours

- 1: Monthly and annual testing can only be performed on one tank at a time. If several tanks are manifolded together, an isolation valve will have to be installed so as to separate the tanks individually.
- 2: Minimum level from probe bottom is same as product level in tank, assuming the typical configuration where the probe touches the bottom of the tank.
- 3: There must be no delivery during waiting time.
- 4: There must be no delivery or dispensing during testing.

Tank Monitoring ATG's w/CSLD (24-hour, 0.2 gph monthly monitoring)

- Critical performance parameters for the **series 8463 and 8473** probe with the **TLS-450 (8600) series**, consoles: (Magnetostrictive probe)

Parameter	Value
Maximum Tank Size ¹	45,000 gallons (Single Tank) 37,000 gallons (Manifolded Tanks)
Software Version	N/A
Minimum Tank Level ²	5%
Maximum Monthly Throughput	227,559 gallons (Single Tank) 226,848 gallons (Manifolded Tanks)

- 1: Manifolded tank capacity is an aggregate capacity of all tanks.
- 2: The CSLD system will automatically check the tank level, and not perform a test if the tank level is below the minimum.

- Critical performance parameters for the **series 8463** probe with the **TLS-4 (8601) series** console: (Magnetostrictive probe)

Parameter	Value
Maximum Tank Size ¹	43,722 gallons (Single Tank or up to 3 Manifoldd Tanks)
Software Version	N/A
Minimum Tank Level ²	15%
Maximum Monthly Throughput	235,000 gallons (Single Tank or up to 3 Manifoldd Tanks)

1: Manifoldd tank capacity is an aggregate capacity of all tanks.

2: The CSLD system will automatically check the tank level, and not perform a test if the tank level is below the minimum.

Electronic Line Leak Detectors

- The Veeder-Root Electronic Line Leak Detectors are approved for use on pipeline systems for underground storage tank facilities that contain petroleum or other chemical products. It is approved for use on rigid piping and flexible piping.
- An annual test of the operation of the leak detector shall be conducted in accordance with the manufacturer procedures for testing by inducing a physical line leak calibrated to a 3.0 gph @ 10 psi equivalent leak rate. The individual performing the test must be qualified by the equipment manufacturer or an individual meeting the requirements of **SPS 305.88** for pipe testing.
- **Mechanical line leak detectors shall be removed from the pipeline before testing.**
- This test cannot be used if trapped vapor is present in the system.

Pressurized

- Critical performance parameters for the **series 8484** Line Leak Detector with the **TLS and ProMax** consoles:

Rigid Piping: (Fiberglass or steel)

Parameter	Value
Maximum Test Line Size	3 in.
Total maximum allowable volume of product in any rigid test pipeline	119.4 gallons or less

Note: All other critical parameters, such as test line pressure; minimum test times; minimum wait times between product dispensing and start of test are pre-programmed into the software and are not accessible for viewing.

Flexible Piping:

Parameter	Value
Minimum Flexible Piping Bulk Modulus	User selectable on console. For a list of currently approved piping, contact Veeder-Root.
Total maximum allowable volume of product in any flexible test pipeline	119.4 gallons or less

Note: All other critical parameters, such as test line pressure; minimum test times; minimum wait times between product dispensing and start of test are pre-programmed into the software and are not accessible for viewing.

Hybrid Piping (Flexible and Rigid) 3.0 gph testing only:

Parameter	Value
Minimum Flexible Piping Bulk Modulus	User selectable on console. A measurement of bulk modulus must be made at the owner's facility so that the software can be programmed to deal with the specific characteristics of the piping system at the facility. Contact Veeder Root for the procedure.
Software version	23 or higher
Total maximum allowable volume of product in any Hybrid test pipeline	212 gallons or less for 3.0 gph

Note: All other critical parameters, such as test line pressure; minimum test times; minimum wait times between product dispensing and start of test are pre-programmed into the software and are not accessible for viewing.

- Critical performance parameters for the Series **8494** Line Leak Detector with the **TLS, TLSPC, and LLD 300** consoles: (Note: This Line Leak Detector is 3rd party certified for rigid piping only)

Rigid Piping: (3" Fiberglass or steel)

Parameter	Value
Maximum Test Line Size	3 in.
Total maximum allowable volume of product in any rigid test pipeline	100 gallons or less

Note: All other critical parameters, such as test line pressure; minimum test times; minimum wait times between product dispensing and start of test are pre-programmed into the software and are not accessible for viewing.

Liquid Sensors

- The Liquid Sensors shall be placed such that a release from any portion of the tank or piping will be detected.
- Reference the Sensor-Console Application Chart under the Description and Use section of this material approval for application of appropriate sensor for the product.

Installation Notes:

- When monitoring double-wall tanks, a liquid sensor must be located at the lowest point of interstitial space.
- Manifolder tanks require that the interstice of the tanks be manifolded to a common vacuum pump.
- The interstitial space shall be rated for the operating vacuum of the leak detector, in consideration of temperature and groundwater fluctuations. Refer to Veeder-Root installation and Operation Guides for assistance.
- This system may not be compatible with all secondary contained tanks and/or piping. Consult with the tank and/or piping manufacturer and the manufacturer's applicable recommended installation practices before installing this system, or damage may be caused to the tank or piping by its use.

This approval will be valid through December 31, 2026, unless manufacturing modifications are made to the product or a re-examination is deemed necessary by the department. The Wisconsin Material Approval Number must be provided when plans that include this product are submitted for review.


DISCLAIMER

The Department is in no way endorsing or advertising this product. This approval addresses only the specified applications for the product and does not waive any code requirement unless specified in this document.

Effective Date: September 20, 2023

Reviewed by: 
Erik Otterson
Environmental Engineering Specialist

Date: 9/20/2023

Approved by: 
Greg Bareta, P. E.
Section Chief
Storage Tank Regulation
Bureau of Weights and Measures

Date: 9/20/2023

Secondary Containment Volumes by Manufacturer

Manufacturer	Type	Volume	Type	Volume	Type	Volume
Ameron	Duroly 3000L 3' over 2' piping	0.2186 Gal / Ft	Modern Welding			
	Duroly 3000L 4' over 3' piping	0.2652 Gal / Ft	Steel welded tank w/ FRP exterior (Model 19)			
	Duroly 3000L 5' over 4' piping	0.8398 Gal / Ft	520 Gallon Tank, 4 ft dia	41 Gal / Tank		
	Duroly 3000L CX 2' piping	0.0133 Gal / Ft	1,000 Gallon Tank, 5 ft dia	64 Gal / Tank		
	Duroly 3000L CX 3' piping	0.0196 Gal / Ft	2,000 Gallon Tank, 5 ft dia	75 Gal / Tank		
	Duroly 3000L CX 4' piping	0.0252 Gal / Ft	3,000 Gallon Tank, 5 ft dia	82 Gal / Tank		
			4,000 Gallon Tank	120 Gal / Tank		
			5,000 gallon tank	142 Gal / Tank		
			6,000 Gallon Tank	150 Gal / Tank		
			8,000 Gallon Tank	157 Gal / Tank		
APT	0.5' Double Wall Pipe	0.0031 Gal / Ft	10,000 Gallon Tank	172 Gal / Tank		
	0.75' Double Wall Pipe	0.0042 Gal / Ft	12,000 Gallon Tank	183 Gal / Tank		
	1.00' Double Wall Pipe	0.0119 Gal / Ft	15,000 Gallon Tank	239 Gal / Tank		
	1.5' Double Wall Pipe	0.0062 Gal / Ft	20,000 Gallon Tank	284 Gal / Tank		
	1.75' Double Wall Pipe	0.0182 Gal / Ft	25,000 Gallon Tank	307 Gal / Tank		
	2' Double Wall Pipe	0.0218 Gal / Ft	30,000 Gallon Tank	369 Gal / Tank		
	2.5' Double Wall Pipe	0.0104 Gal / Ft	35,000 gallon tank	428 Gal / Tank		
			40,000 Gallon Tank	471 Gal / Tank		
			45,000 gallon tank	501 Gal / Tank		
			50,000 Gallon Tank	511 Gal / Tank		
Bravo	Small Foot Print Double Wall UDC	1.25 Gal / Sump	Steel welded composite tanks (Classified II, Model 19)			
	Large Foot Print Double Wall UDC	2 Gal / Sump	560 Gallon Tank	3 Gal / Tank		
			1,000 Gallon Tank	4 Gal / Tank		
			2,000 Gallon Tank	5 Gal / Tank		
			3,000 Gallon Tank	6 Gal / Tank		
			4,000 Gallon Tank	7 Gal / Tank		
			6,000 Gallon Tank	9 Gal / Tank		
			8,000 Gallon Tank	10 Gal / Tank		
			10,000 Gallon Tank	13 Gal / Tank		
			12,000 Gallon Tank	15 Gal / Tank		
Containment Solutions	Small Vent Box	1.25 Gal/Sump	Nugli			
	Large Vent Box	2.00 Gal/Sump	2' over 1.5' piping (2.48' OD x 1.989' OD)	0.0546 Gal / Ft		
			3' over 2' piping (2.963' OD x 2.489' OD)	0.0518 Gal / Ft		
			4' over 3' piping (4.921' OD x 3.543' OD)	0.3299 Gal / Ft		
			4' over 2' piping (4.3' OD x 2.45' OD)	0.401 Gal / Ft		
			OPW			
			Double Wall Dispenser Sump, DST series	1.9 Gal / Ft		
			Tank Sump 42" Dia x 42" Ht, TRFSDW-4248	0.8 Gal		
			Tank Sump 42" Dia x 60" Ht, TRFSDW-4260	1.3 Gal		
			Tank Sump 48" Dia x 42" Ht, TRFSDW-4848	0.9 Gal		
Duroly	46" Diameter 550 Gallon Capacity	5.8 Gal / Tank	Tank Sump 48" Dia x 60" Ht, TRFSDW-4860	1.2 Gal		
	48" Diameter 600 Gallon Capacity	5.9 Gal / Tank	Double Wall Vent Stack Sump, TST-4536	1.9 Gal		
	48" Diameter 1,000 Gallon Capacity	6.1 Gal / Tank	CD15DW, 1-1/2" Double Wall Pipe	0.0089 Gal / Ft		
	72" Diameter 2,000 Gallon Capacity	25.1 Gal / Tank	CD15RB, 1-1/2" Ribbed Double Wall Pipe	0.006 Gal / Ft		
	72" Diameter 2,500 Gallon Capacity	33.4 Gal / Tank	CP20RB, 2" Ribbed Double Wall Pipe	0.0086 Gal / Ft		
	72" Diameter 3,000 Gallon Capacity	41.7 Gal / Tank	PHH-Title			
	72" Diameter 3,500 Gallon Capacity	45.8 Gal / Tank	42" Double wall Tank Sump	0.974 Gal / Ft		
	72" Diameter 4,000 Gallon Capacity	49.9 Gal / Tank	48" Double wall Tank Sump	1.126 Gal / Ft		
	72" Diameter 4,500 Gallon Capacity	53.1 Gal / Tank	Double wall UDC	3.986 Gal / Sump		
	72" Diameter 5,000 Gallon Capacity	56.4 Gal / Tank	Smith			
Eaton	48" Diameter 500 Gallon Capacity	5.8 Gal / Tank	3' over 2" Fiberglass piping	0.23 Gal / Ft		
	48" Diameter 1,000 Gallon Capacity	6.1 Gal / Tank	4' over 3" Fiberglass piping	0.276 Gal / Ft		
	72" Diameter 2,000 Gallon Capacity	25.1 Gal / Tank	6' over 4" Fiberglass piping	0.823 Gal / Ft		
	72" Diameter 2,500 Gallon Capacity	33.4 Gal / Tank	Total Containment	0.0052 Gal / Ft		
	72" Diameter 3,000 Gallon Capacity	41.7 Gal / Tank	OmniFlex 1.5' (CP1503)	0.0079 Gal / Ft		
	72" Diameter 3,500 Gallon Capacity	45.8 Gal / Tank	OmniFlex 2.5' (CP2503)			
	72" Diameter 4,000 Gallon Capacity	49.9 Gal / Tank				
	72" Diameter 4,500 Gallon Capacity	53.1 Gal / Tank				
	72" Diameter 5,000 Gallon Capacity	56.4 Gal / Tank				
	72" Diameter 6,000 Gallon Capacity	62.9 Gal / Tank				
Eaton	48" Diameter 500 Gallon Capacity	5.8 Gal / Tank	GeoFlex Piping, 7.5" Dia. (GFP-2075)	0.0028 Gal / Ft		
	48" Diameter 1,000 Gallon Capacity	6.1 Gal / Tank	GeoFlex Piping, 1.0" Dia. (GFP-2100)	0.0039 Gal / Ft		
	72" Diameter 2,000 Gallon Capacity	25.1 Gal / Tank	GeoFlex Piping, 1.5" Dia. (GFP-2150)	0.0064 Gal / Ft		
	72" Diameter 2,500 Gallon Capacity	33.4 Gal / Tank	GeoFlex Piping, 2.0" Dia. (GFP-2200)	0.0094 Gal / Ft		
	72" Diameter 3,000 Gallon Capacity	41.7 Gal / Tank	GeoFlex Piping, 3.0" Dia. (GFP-2300)	0.0164 Gal / Ft		
	72" Diameter 3,500 Gallon Capacity	45.8 Gal / Tank	Dispenser Sump			
	72" Diameter 4,000 Gallon Capacity	49.9 Gal / Tank	Dispenser Sump FDS-2014-DW	5 Gal		
	72" Diameter 4,500 Gallon Capacity	53.1 Gal / Tank	Dispenser Sump FDS-2414-DW	6.5 Gal		
	72" Diameter 5,000 Gallon Capacity	56.4 Gal / Tank	Dispenser Sump FDS-2716-DW	6.5 Gal		
	72" Diameter 6,000 Gallon Capacity	62.9 Gal / Tank	Dispenser Sump FDS-2922-DW	10 Gal		
Eaton	48" Diameter 500 Gallon Capacity	5.8 Gal / Tank	Dispenser Sump FDS-3215-DW	7 Gal		
	48" Diameter 1,000 Gallon Capacity	6.1 Gal / Tank	Dispenser Sump FDS-3621-DW	8 Gal		
	72" Diameter 2,000 Gallon Capacity	25.1 Gal / Tank	Dispenser Sump FDS-4021-DW	10 Gal		
	72" Diameter 2,500 Gallon Capacity	33.4 Gal / Tank	Dispenser Sump FDS-4422-DW	8.5 Gal		
	72" Diameter 3,000 Gallon Capacity	41.7 Gal / Tank	Dispenser Sump FDS-4819-DW	10.5 Gal		
	72" Diameter 3,500 Gallon Capacity	45.8 Gal / Tank	Dispenser Sump FDS-4422-DW	10.5 Gal		
	72" Diameter 4,000 Gallon Capacity	49.9 Gal / Tank	Dispenser Sump FDS-4614-DW	8 Gal		
	72" Diameter 4,500 Gallon Capacity	53.1 Gal / Tank	Dispenser Sump FDS-4715-DW	8 Gal		
	72" Diameter 5,000 Gallon Capacity	56.4 Gal / Tank	Dispenser Sump FDS-4721-DW	9 Gal		
	72" Diameter 6,000 Gallon Capacity	62.9 Gal / Tank				
Eaton	48" Diameter 500 Gallon Capacity	5.8 Gal / Tank	GeoFlex Piping, 7.5" Dia. (GFP-2075)	0.0028 Gal / Ft		
	48" Diameter 1,000 Gallon Capacity	6.1 Gal / Tank	GeoFlex Piping, 1.0" Dia. (GFP-2100)	0.0039 Gal / Ft		
	72" Diameter 2,000 Gallon Capacity	25.1 Gal / Tank	GeoFlex Piping, 1.5" Dia. (GFP-2150)	0.0064 Gal / Ft		
	72" Diameter 2,500 Gallon Capacity	33.4 Gal / Tank	GeoFlex Piping, 2.0" Dia. (GFP-2200)	0.0094 Gal / Ft		
	72" Diameter 3,000 Gallon Capacity	41.7 Gal / Tank	GeoFlex Piping, 3.0" Dia. (GFP-2300)	0.0164 Gal / Ft		
	72" Diameter 3,500 Gallon Capacity	45.8 Gal / Tank	Dispenser Sump			
	72" Diameter 4,000 Gallon Capacity	49.9 Gal / Tank	Dispenser Sump FDS-2014-DW	5 Gal		
	72" Diameter 4,500 Gallon Capacity	53.1 Gal / Tank	Dispenser Sump FDS-2414-DW	6.5 Gal		
	72" Diameter 5,000 Gallon Capacity	56.4 Gal / Tank	Dispenser Sump FDS-2716-DW	6.5 Gal		
	72" Diameter 6,000 Gallon Capacity	62.9 Gal / Tank	Dispenser Sump FDS-2922-DW	10 Gal		
Eaton	48" Diameter 500 Gallon Capacity	5.8 Gal / Tank	Dispenser Sump FDS-3215-DW	7 Gal		
	48" Diameter 1,000 Gallon Capacity	6.1 Gal / Tank	Dispenser Sump FDS-3621-DW	8 Gal		
	72" Diameter 2,000 Gallon Capacity	25.1 Gal / Tank	Dispenser Sump FDS-4021-DW	10 Gal		
	72" Diameter 2,500 Gallon Capacity	33.4 Gal / Tank	Dispenser Sump FDS-4422-DW	8.5 Gal		
	72" Diameter 3,000 Gallon Capacity	41.7 Gal / Tank	Dispenser Sump FDS-4819-DW	10.5 Gal		
	72" Diameter 3,500 Gallon Capacity	45.8 Gal / Tank	Dispenser Sump FDS-4422-DW	10.5 Gal		
	72" Diameter 4,000 Gallon Capacity	49.9 Gal / Tank	Dispenser Sump FDS-4614-DW	8 Gal		
	72" Diameter 4,500 Gallon Capacity	53.1 Gal / Tank	Dispenser Sump FDS-4715-DW	8 Gal		
	72" Diameter 5,000 Gallon Capacity	56.4 Gal / Tank	Dispenser Sump FDS-4721-DW	9 Gal		
	72" Diameter 6,000 Gallon Capacity	62.9 Gal / Tank				
Eaton	48" Diameter 500 Gallon Capacity	5.8 Gal / Tank	GeoFlex Piping, 7.5" Dia. (GFP-2075)	0.0028 Gal / Ft		
	48" Diameter 1,000 Gallon Capacity	6.1 Gal / Tank	GeoFlex Piping, 1.0" Dia. (GFP-2100)	0.0039 Gal / Ft		
	72" Diameter 2,000 Gallon Capacity	25.1 Gal / Tank	GeoFlex Piping, 1.5" Dia. (GFP-2150)	0.0064 Gal / Ft		
	72" Diameter 2,500 Gallon Capacity	33.4 Gal / Tank	GeoFlex Piping, 2.0" Dia. (GFP-2200)	0.0094 Gal / Ft		
	72" Diameter 3,000 Gallon Capacity	41.7 Gal / Tank	GeoFlex Piping, 3.0" Dia. (GFP-2300)	0.0164 Gal / Ft		
	72" Diameter 3,500 Gallon Capacity	45.8 Gal / Tank	Dispenser Sump			
	72" Diameter 4,000 Gallon Capacity	49.9 Gal / Tank	Dispenser Sump FDS-2014-DW	5 Gal		
	72" Diameter 4,500 Gallon Capacity	53.1 Gal / Tank	Dispenser Sump FDS-2414-DW	6.5 Gal		
	72" Diameter 5,000 Gallon Capacity	56.4 Gal / Tank	Dispenser Sump FDS-2716-DW	6.5 Gal		
	72" Diameter 6,000 Gallon Capacity	62.9 Gal / Tank	Dispenser Sump FDS-2922-DW	10 Gal		
Eaton	48" Diameter 500 Gallon Capacity	5.8 Gal / Tank	Dispenser Sump FDS-3215-DW	7 Gal		
	48" Diameter 1,000 Gallon Capacity	6.1 Gal / Tank	Dispenser Sump FDS-3621-DW	8 Gal		
	72" Diameter 2,000 Gallon Capacity	25.1 Gal / Tank	Dispenser Sump FDS-4021-DW	10 Gal		
	72" Diameter 2,500 Gallon Capacity	33.4 Gal / Tank	Dispenser Sump FDS-4422-DW	8.5 Gal		
	72" Diameter 3,000 Gallon Capacity	41.7 Gal / Tank	Dispenser Sump FDS-4819-DW	10.5 Gal		
	72" Diameter 3,500 Gallon Capacity	45.8 Gal / Tank	Dispenser Sump FDS-4422-DW	10.5 Gal		
	72" Diameter 4,000 Gallon Capacity	49.9 Gal / Tank	Dispenser Sump FDS-4614-DW	8 Gal		
	72" Diameter 4,500 Gallon Capacity	53.1 Gal / Tank	Dispenser Sump FDS-4715-DW	8 Gal		
	72" Diameter 5,000 Gallon Capacity	56.4 Gal / Tank	Dispenser Sump FDS-4721-DW	9 Gal		
	72" Diameter 6,000 Gallon Capacity	62.9 Gal / Tank				
Eaton	48" Diameter 500 Gallon Capacity	5.8 Gal / Tank	GeoFlex Piping, 7.5" Dia. (GFP-2075)	0.0028 Gal / Ft		
	48" Diameter 1,000 Gallon Capacity	6.1 Gal / Tank	GeoFlex Piping, 1.0" Dia. (GFP-2100)	0.0039 Gal / Ft		
	72" Diameter 2,000 Gallon Capacity	25.1 Gal / Tank	GeoFlex Piping, 1.5" Dia. (GFP-2150)	0.0064 Gal / Ft		
	72" Diameter 2,500 Gallon Capacity	33.4 Gal / Tank	GeoFlex Piping, 2.0" Dia. (GFP-2200)	0.0094 Gal / Ft		
	72" Diameter 3,000 Gallon Capacity	41.7 Gal / Tank	GeoFlex Piping, 3.0" Dia. (GFP-2300)	0.0164 Gal / Ft		
	72" Diameter 3,500 Gallon Capacity	45.8 Gal / Tank	Dispenser Sump			
	72" Diameter 4,000 Gallon Capacity	49.9 Gal / Tank	Dispenser Sump FDS-2014-DW	5 Gal		
	72" Diameter 4,500 Gallon Capacity	53.1 Gal / Tank	Dispenser Sump FDS-2414-DW	6.5 Gal		
	72" Diameter 5,000 Gallon Capacity	56.4 Gal / Tank	Dispenser Sump FDS-2716-DW	6.5 Gal		
	72" Diameter 6,000 Gallon Capacity	62.9 Gal / Tank	Dispenser Sump FDS-2922-DW	10 Gal		
Eaton	48" Diameter 500 Gallon Capacity	5.8 Gal / Tank	Dispenser Sump FDS-3215-DW	7 Gal		
	48" Diameter 1,000 Gallon Capacity	6.1 Gal / Tank	Dispenser Sump FDS-3621-DW	8 Gal		
	72" Diameter 2,000 Gallon Capacity	25.1 Gal / Tank	Dispenser Sump FDS-4021-DW	10 Gal		
	72" Diameter 2,500 Gallon Capacity	33.4 Gal / Tank	Dispenser Sump FDS-4422-DW	8.5 Gal		
	72" Diameter 3,000 Gallon Capacity	41.7 Gal / Tank	Dispenser Sump FDS-4819-DW	10.5 Gal		
	72" Diameter 3,500 Gallon Capacity	45.8 Gal / Tank	Dispenser Sump FDS-4422-DW	10.5 Gal		
	72" Diameter 4,000 Gallon Capacity	49.9 Gal / Tank	Dispenser Sump FDS-4614-DW	8 Gal		
	72" Diameter 4,500 Gallon Capacity	53.1 Gal / Tank	Dispenser Sump FDS-4715-DW	8 Gal		
	72" Diameter 5,000 Gallon Capacity	56.4 Gal / Tank	Dispenser Sump FDS-4721-DW	9 Gal		
	72" Diameter 6,000 Gallon Capacity	62.9 Gal / Tank				
Eaton	48" Diameter 500 Gallon Capacity	5.8 Gal / Tank	GeoFlex Piping, 7.5" Dia. (GFP-2075)	0.0028 Gal / Ft		
	48" Diameter 1,000 Gallon Capacity	6.1 Gal / Tank	GeoFlex Piping, 1.0" Dia. (GFP-2100)	0.0039 Gal / Ft		
	72" Diameter 2,000 Gallon Capacity	25.1 Gal / Tank	GeoFlex Piping, 1.5" Dia. (GFP-2150)	0.0064 Gal / Ft		
	72" Diameter 2,500 Gallon Capacity	33.4 Gal / Tank	GeoFlex Piping, 2.0" Dia. (GFP-2200)	0.0094 Gal / Ft		
	72" Diameter 3,000 Gallon Capacity	41.7 Gal / Tank	GeoFlex Piping, 3.0" Dia. (GFP-2300)	0.0164 Gal / Ft		
	72" Diameter 3,500 Gallon Capacity	45.8 Gal / Tank	Dispenser Sump			
	72" Diameter 4,000 Gallon Capacity	49.9 Gal / Tank	Dispenser Sump FDS-2014-DW	5 Gal		
	72" Diameter 4,500 Gallon Capacity	53.1 Gal / Tank	Dispenser Sump FDS-2414-DW	6.5 Gal		
	72" Diameter 5,000 Gallon Capacity	56.4 Gal / Tank	Dispenser Sump FDS-2716-DW	6.5 Gal		
	72" Diameter 6,000 Gallon Capacity	62.9 Gal / Tank	Dispenser Sump FDS-2922-DW	10 Gal		
Eaton	48" Diameter 500 Gallon Capacity	5.8 Gal / Tank	Dispenser Sump FDS-3215-DW	7 Gal		
	48" Diameter 1,000 Gallon Capacity	6.1 Gal / Tank	Dispenser Sump FDS-3621-DW	8 Gal		
	72" Diameter 2,000 Gallon Capacity	25.1 Gal / Tank	Dispenser Sump FDS-4021-DW	10 Gal		
	72" Diameter 2,500 Gallon Capacity	33.4 Gal / Tank	Dispenser Sump FDS-4422-DW	8.5 Gal		
	72" Diameter 3,000 Gallon Capacity	41.7 Gal / Tank	Dispenser Sump FDS-4819-DW	10.5 Gal		
	72" Diameter 3,500 Gallon Capacity	45.8 Gal / Tank	Dispenser Sump FDS-4422-DW	10.5 Gal		
	72" Diameter 4,000 Gallon Capacity	49.9 Gal / Tank	Dispenser Sump FDS-4614-DW	8 Gal		
	72" Diameter 4,500 Gallon Capacity	53.1 Gal / Tank	Dispenser Sump FDS-4715-DW	8 Gal		
	72" Diameter 5,000 Gallon Capacity	56.4 Gal / Tank	Dispenser Sump FDS-4721-DW	9 Gal		
	72" Diameter 6,000 Gallon Capacity	62.9 Gal / Tank				
Eaton	48" Diameter 500 Gallon Capacity	5.8 Gal / Tank	GeoFlex Piping, 7.5" Dia. (GFP-2075)	0.0028 Gal / Ft		