

Petro Specialties PetroVac

Positive Displacement Vacuum Pump as a Vacuum Source for

Veeder-Root Secondary Containment Leak Detection (SCLD) TLS-450Plus and TLS-350/ProMax/EMC Console with Vacuum Sensors 857280-100, 200, 30x, or Assembly 332175-001

CONTINUOUS INTERSTITIAL LINE MONITORING METHOD (PRESSURE/VACUUM)

Certification:

Evaluation was conducted to verify operating performance of an auxiliary vacuum pump to be used with Veeder-Root Secondary Containment Leak Detection (SCLD) method.

Certified as equivalent to European leak detection standard EN-13160-2, Part 2, as a Class I leak detection system.

Operating Principal:

System uses vacuum generated by the auxiliary pump to continuously maintain a partial vacuum within the interstitial space of double-walled tanks and double-walled piping.

System is designed to activate a visual and acoustic alarm before stored product can escape to the environment.

System is capable of detecting breaches in both the inner and outer walls of double-walled tanks and double-walled piping.

Alarm Condition:

System alarms when a liquid or air leak occurs which causes the interstitial vacuum to decrease (pressure to increase) and the system is unable to maintain minimum vacuum.

System will also alarm if liquid is detected in the interstitial space, or if the vacuum level in the interstitial space decreases at a rate exceeding 85±15 liters/hour.

Applicability:

Underground double-walled tank, connected double-walled piping, connected double-walled containment sumps and other connected interstitial spaces storing gasoline, gasohol, diesel, heating oil #2, kerosene, aviation fuel, motor oil, waste oil, water. Storage of biodiesel blends B6-B20 meeting ASTM D7467 and biodiesel B100 meeting ASTM D6751 would also produce a system alarm if the system threshold is exceeded. Responses to these fuels were not determined but would be expected to be very similar to the system's response when storing diesel. In addition, the vendor indicated that sensors responded to 100% Lubrizol Ultrazol 9888, 100% Afton OTR 8332G, and 100% Afton OTR 8843G following internal evaluation.

EN13160-2 requires the use of separate monitoring systems for separate USTs.

Manufacturer's Specifications:

Alarm will activate when interstitial vacuum decreases to 1.7 psi (3.5" Hg) vacuum for TLS-350; 1.8 psi (3.6" Hg) vacuum for TLS-450Plus.

Default maximum vacuum level (pump-off pressure) is 8 psi vacuum (16.3" Hg), but can be set as low as 4 psi (8.2" Hg) if the monitored system requires a lower level of vacuum **to** be maintained (e.g. double walled fiberglass tank with dry interstice).

The interstitial space shall be rated for the operating vacuum of the leak detector, regardless of temperature and groundwater level fluctuations.

Volume of monitored interstitial space must not exceed 8 m³ (2,114 gal) for tanks and 10 m³ (2,642 gal) for piping.

When monitoring double-walled tanks, a liquid sensor must be located at lowest point of interstitial space.

Calibration:

Functional and operational safety tests should be performed in accordance with manufacturer's instructions.

Comments:

Interstitial space is tested continuously.

System is connected to the interstitial space by a single vacuum line.

Vacuum is generated by an auxiliary pump and is measured and controlled by a vacuum control valve.

This method was evaluated and approved for use for the following auxiliary pumps / pump characteristics.

Secondary / Interstitial Volume	Auxiliary Pump Model	Pump Displacement (pumping capacity)
Up to 1,000 gallons	USV7F	7.5 CFM
1,000 gallons or greater	USV15	15 CFM

***Petro Specialties PetroVac system is only approved for use in commercial / industrial / non-retail systems where the use of a traditional submersible turbine pump (STP) is not feasible.

A difference in elevation of 8 foot or greater between the float valve and the low point (s) of the interstitial space may prevent the float valve from activating if the pressure from the column of liquid from intrusion is able to exceed or offset the vacuum established by the vacuum pump. (Example: An 8 foot column of water is the approximate equivalent of 3.5 psi (7 in HG) and may mask intrusion if liquid sensor is not located at the lowest point of an interstitial space.)

In consideration of applicability for use, Veeder-Root should be contacted directly by Petro Specialties, Inc. for technical support and approval for any deviation of use of Veeder-Root SCLD equipment not previously approved.

This system may not be compatible with all secondarily contained tanks and/or piping. Always 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 system is also listed as an approved "Continuous Interstitial Tank Monitoring Method (Pressure / Vacuum)"

Petro Specialties, Inc.
27570 Commerce Center Dr #228
Temecula, CA 92590
Tel: (888) 606-8265
E-Mail: garyb@tank-specialists.com

Evaluator: Ken Wilcox Associates
Tel: (816) 443-2494
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