



**Vaporless Manufacturing, Inc.
Quality Petroleum Equipment
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May 5th, 2004

Subject: The Relationship of a 3 Gallon Per Hour @ 10 Pounds Per Square Inch Orifice for Catastrophic LLD Testing and the Pressures LLD Equipment Perform Their Test At.

To Whom It May Concern:

ARM-4073

The question has been raised as to; Why is the fluid flow (leak) higher during an annual test of line leak detection equipment than the fluid flow during the calibration process to establish a 3 GPH @ 10 PSI leak. This question is a good one as it appears the test equipment is somehow passing a higher flow than the regulation allows. To answer the question we need to look at the regulations and how they have been understood.

**AST-4010
AST-4012
AST-4020**

EPA regulations state that Catastrophic Line Leak Detection Equipment must be capable of detecting a line leak defined as 3 GPH @ 10 PSI. Additionally, testing of the line leak detection device is required annually (section 280.44 Methods of Release Detection for Piping).

**ISM-4080
ISM-4081**

**LD-2000
LD-2200
LD-3000**

The regulations do not state the leak detection device must search for a leak at 10 PSI, nor do they state that the leak detection device must detect a 3 GPH leak at the pressure the device is testing the line at. What is defined is the size of leak (or hole) the device must detect when a leak search is attempted.

**LDT-890
LDT-890\AF**

No two line leak detection devices search for a leak at the same pressure, some search @ 24-30 PSI, some at 18-22 PSI, some @ 12-15 PSI and some search @ 8-12 PSI. This is of course assuming you have a standard 30 PSI submersible pump. If there is a high pressure pump installed, these pressures slide up in relationship to the submersible pressure. Conversely, when a lower pressure submersible is used, the scale slides down.

**OFP-2/1
OFP-2/2**

This was understood from the beginning of the certification process for all line leak devices. When a third party evaluator performs the evaluation work on line leak detection equipment the hole size is made to pass the fluid through at a rate of 3 GPH at a standard pressure of 10 PSI. Once the hole size has been calibrated, the portion of the test device that limited the flow to 10 PSI is removed, and the device tests at what ever pressure it tests at. It must then detect the hole (or orifice) that was previously calibrated. A review of a KWA certification outlines this and a call to a third party certifier (such as KWA) will confirm this.

**OFP-3/1
OFP-3/2**

SUMP-300-P

I hope this brings some clarity to the apparent higher flow when line leak detection devices search for leaks above 10 PSI.

Sincerely,

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