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### **LG 169: CLARIFICATION OF REQUIREMENTS FOR VAPOR CONDENSATE TRAPS**

(Available electronically at [http://www.waterboards.ca.gov/water\\_issues/programs/ust](http://www.waterboards.ca.gov/water_issues/programs/ust))

To: Local Agencies and Other Interested Parties

The purpose of this letter is to clarify the regulatory requirements that apply to vapor condensate traps installed in tank vent or vapor recovery piping connected to underground storage tank (UST) systems. For ease of use, this letter has been drafted in a question and answer format.

#### **1. What are vapor condensate traps?**

Vapor condensate traps (also referred to as vapor pots, condensate pots, liquid condensate traps, thief ports, or knock-out pots) are small containment vessels designed to accumulate condensed vapors from UST vent and vapor recovery piping when it is not possible to achieve the necessary slope from the dispenser to the UST.

#### **2. Why are vapor condensate traps necessary?**

Regulation and industry codes specify that vent and vapor recovery piping must maintain a continuous slope, such that any liquid present in the piping will drain freely and not block the flow of vapors. In most cases it is possible to maintain a continuous slope throughout the entire tank vent and vapor piping, so liquid can flow freely to the UST and a vapor condensate trap is not needed. However, when site-specific conditions make it impossible to maintain a continuous slope of tank vent or vapor recovery piping, a vapor condensate trap is installed in the piping to collect liquid and allow for its removal from the piping.

#### **3. How can I identify vapor condensate traps at an UST site?**

Vapor condensate traps will not be present on most UST systems. Because a vapor condensate trap is only needed when continuous slope of the vent or vapor recovery

pipng cannot be achieved, they are most commonly found where one or more of the following conditions exist:

- Greater than average length of piping between the tank and the dispenser closest to the tank.
- Greater than average length of piping between the UST and the tank vent stack.
- Shallower than average burial depth for the UST.
- A surface slope exists between the tank and the dispenser area.
- A tank system comprised of aboveground and underground tanks that are connected.

Whenever one or more of these conditions exist, inspectors should be aware that vapor condensate traps may have been installed. If any vapor condensate traps are present, they will be located along the tank vent or vapor recovery piping. They are typically installed under a manhole cover that provides access for inspection and maintenance of the condensate trap if needed. During the annual UST system inspection, a local regulatory agency may require that unidentified manhole lids in the vicinity of the UST system be removed so that any vapor condensate traps can be identified and inspected.

#### **4. Should vapor condensate traps be regulated as part of the UST system or permitted individually as a separate UST?**

The answer to this question depends on the design and configuration of the vapor condensate trap. For some UST systems, the tank vent and vapor recovery piping is exempt from the definition of "pipe" if it is designed to prevent, and does not hold, standing fluid.<sup>1</sup> Since vapor condensate traps are designed to store condensed vapors in the liquid state, this exemption does not apply. Therefore, if the vapor condensate trap is hydraulically linked to an UST (i.e. the vapor condensate trap and the tank contain the same substance and share withdrawal pipes) then the vapor condensate trap should be permitted as part of the UST system. For vapor condensate traps that are not hydraulically linked to an UST, a separate permit should be issued.

#### **5. What regulatory requirements apply to vapor condensate traps?**

The answer to this question depends on the design of the vapor condensate trap and the date the UST system was installed. Most vapor condensate traps are constructed like a small UST; essentially a vertical or horizontal cylinder with multiple threaded openings at the top. These vapor condensate traps should be regulated

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<sup>1</sup> California Health and Safety Code, Chapter 6.7, section 25281.5(a)(4)

like any other UST. Requirements will vary depending on the date of installation, but secondary containment, interstitial monitoring, periodic secondary containment testing, cathodic protection, periodic integrity testing, and overfill prevention may be required.

Some vapor condensate traps are constructed using standard piping and fittings, but configured to provide a low point and an access port for removal of liquid. These vapor condensate traps should be regulated as product piping that is fed by gravity flow. Requirements will vary depending on the date of installation, but secondary containment, interstitial monitoring, periodic secondary containment testing, cathodic protection, and periodic integrity testing may be required.

#### **6. What requirements apply to removal of liquid from a vapor condensate trap?**

Once again, the answer to this question depends on the design of the vapor condensate trap. Some vapor condensate traps are equipped with a suction line (typically connected to a siphon port on the turbine) that can automatically evacuate liquid and return it to the UST. Because the suction line contains liquid product, it is subject to the same regulatory requirements as any other product suction piping on the UST system.<sup>2</sup> Depending on the installation date of the UST and the presence or absence of check valves, secondary containment, interstitial monitoring, or periodic integrity testing of the suction line may be required.

Vapor condensate traps that are not equipped for automatic evacuation must be emptied manually. Condensed fuel vapors create a liquid that is hazardous and flammable, so care must be used when handling it. In some cases, the liquid will be moved from the vapor condensate trap to the regular grade unleaded UST. In other cases, the liquid will be transported off site for disposal or re-refining. In all cases, the liquid must be managed in accordance with all applicable requirements.

#### **7. Do other agencies have requirements for vapor condensate traps?**

Yes. Because vapor condensate traps are located within vapor recovery piping or tank vent piping, they are subject to regulation by the California Air Resources Board and the local Air Quality Management Districts. UST operators and local regulatory agencies should be aware that the Air Quality Management District may require permits, testing, and inspections when certain work is conducted on vapor

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<sup>2</sup> California Health and Safety Code, Chapter 6.7, sections 25281 and 25281.5

condensate traps. It is highly recommended that you contact your local Air Quality Management District for information on their policies and requirements relating to vapor condensate traps.

If you have questions regarding this document, contact the UST Program at (916) 341-5775 or via e-mail at [ust@waterboards.ca.gov](mailto:ust@waterboards.ca.gov).

Sincerely,

*Original Signed By*

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