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Leak Investigation and TSSA Guidance for Sumps and Spill Buckets

SPS 310.570 Conditions indicating a release; SPS 310.575 Tank system integrity assessment; and SPS 310.580 Tank system site assessment all pose conditions and methodologies for determining the extent of a release to the environment. The manner in which an inspector addresses sump and spill bucket integrity issues and compliance can set the course of action down one of a number of paths. Some paths may have actions and cost that exceeds what is necessary for a reasonable and adequate release determination.

One situation that we have is that the individual inspector who issues the order has to determine when compliance has been achieved to close-out the order; and operators and consultants charged with determining if a release occurred want procedural guidance in the effort to comply with the orders.

In relation to tank or dispenser sump and spill bucket integrity the point of code reference is SPS 310.230(10) Maintenance.

> **(10)** SYSTEM MAINTENANCE. (a) All system equipment and components shall be maintained to function to the manufacturer's original specifications and shall be maintained to be leak-free.

As an example neither the sump boot nor the spill bucket in the adjacent photos are being maintained to mfg's specifications and subsequently are not being maintained "leak free."

Did a leak occur?

The initial citation typically is to address correction of the deficiency and a subsequent citation to conduct a release investigation. The objectives of this guidance document are to explain when a citation or orders for a release investigation should or should not be issued; along with soil assessment sampling guidance.

Factors that determine the extent of a sump or spill bucket release investigation are:

- Is there evidence of a malfunction or failure of the system release detection equipment?
  - Is there evidence that a release occurred during or as a consequence of the malfunction or failure?
- Is there evidence that liquid reached the level of the sump breach?
  - Is there visual observation of liquid level or staining?
  - Is there peripheral or off-site evidence such as vapors or a sheen on water?
- Is there evidence that the liquid contained a regulated product?
  - Is there residue, visual coloration or staining associated with the regulated product in the system?

If all of the sub-bullets above are 'No' there is no need to order a release investigation.

If any of the sub-bullets above are 'Yes' the owner has two options:

1. Treat the situation as a release and proceed with opening the sump or spill bucket to the ambient soil to assess the surrounding soil and/or perform soil testing; or
2. Conduct a tightness test on the sump or spill bucket ***prior** to the repair*.

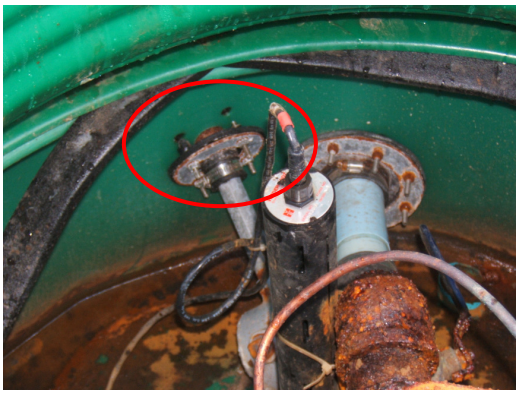
a. If the test determines the sump or spill bucket is tight the release investigation is satisfied.
b. If the test determines that the sump or spill bucket is not tight proceed to performing a soil assessment which may require soil testing.

Soil sampling guidance for a tank top sump and/or a spill bucket:
We will require one sample from each side of the tank adjacent to the sump or spill bucket at a depth equivalent to the bottom of the tank or slightly deeper. The soil probe location should be within five feet of the tank sidewall at its maximum diameter. Greater distances and/or sampling from only one side may be warranted due to piping, other tanks, electrical conduits, etc. In such cases, the reporting shall include clear documentation indicating the limitation(s). In situations of high groundwater, sample to the depth of the groundwater. For situations with pea gravel backfilled tank basins, obtain a native soil sample from the bottom of the basin at the same locations indicated above (i.e., analytical results for pea gravel are not appropriate).

Soil sampling guidance for a dispenser sump:
Sampling is similar to the TSSA sampling for dispensers. If design plans are not available the pipe and electrical conduit entering the dispenser sump should give an indication of the pipe and conduit run outside the sump (i.e., determine how to avoid the runs when collecting a soil sample). Where the sump wall penetration is toward the side of an island, collect one sample on the side of the sump where the suspected breach has occurred at a depth of 12 inches below the level of the suspected breach in the sump. When the sump wall penetration is toward the end of an island, collect one sample on each side of the sump adjacent to the sump wall penetration.

Release reporting
A spill or release is required to be reported as described in the DNR web page at the following link: http://dnr.wi.gov/topic/spills/define.html The DNR has stated their position that: "In order for the spill to *not be reportable* it would have to be cleaned up immediately after the release, not after the discovery. So if there is a slow leak to the subsurface it is technically reportable whether it is less than 1 gallon or not."

Release investigation decision making examples:



In both the photos staining indicates there has been some liquid in the sump previously. Both sumps are currently dry and staining is below the penetration. Because there is not strong evidence that liquid with petroleum reached the penetration holes a release investigation is not required.

In the adjacent photos liquid has reached the sump wall penetration. However, the liquid appears to be water that <u>is not</u> contaminated with petroleum, therefore *a release investigation is not required.*

<u>The "check box" test of release investigation applicability:</u>

☐ YES ☒ NO Is there evidence of a malfunction or failure of the system release detection equipment?
☐ YES ☒ NO Is there evidence that a release occurred during or as a consequence of the malfunction or failure?
☒ YES ☐ NO Is there evidence that liquid reached the level of the sump breach?
☒ YES ☐ NO Is there visual observation of liquid level or staining?
☐ YES ☒ NO Is there peripheral or off-site evidence such as vapors or a sheen on water?
☐ YES ☒ NO Is there evidence that the liquid contained a regulated product?
☐ YES ☒ NO Is there residue, visual coloration or staining associated with a petroleum product?

Release investigation not required

☐ YES ☒ NO Is there evidence of a malfunction or failure of the system release detection equipment?
☐ YES ☒ NO Is there evidence that a release occurred during or as a consequence of the malfunction or failure?
☒ YES ☐ NO Is there evidence that liquid reached the level of the sump breach?
☒ YES ☐ NO Is there visual observation of liquid level or staining?
☐ YES ☒ NO Is there peripheral or off-site evidence such as vapors or a sheen on water?
☒ YES ☐ NO Is there evidence that the liquid contained a regulated product?
☒ YES ☐ NO Is there residue, visual coloration or staining associated with a petroleum product?

Release investigation is required