

Spill Prevention, Control, and Countermeasure Plan: Secondary Containment and Catchment

Guidance

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Applies To: University of Michigan locations that store oil.

40 CFR Part 112, Oil Pollution Prevention, requires an oil facility to have a Spill Prevention Control and Countermeasures Plan (SPCC) to prevent discharges of oil into navigable waters. The definition of “oil” is oil of any kind or in any form, including, but not limited to petroleum, fuel oil, sludge, oil refuse, and oil mixed with wastes.

As part of the SPCC plan, all bulk oil storage requires secondary containment and catchment for tank truck loading and unloading operations. This document provides examples for meeting these requirements.

NOTE: This document provides an overview of SPCC secondary containment and catchment and there may be additional health, safety, and environmental regulatory requirements for a particular storage site.

Secondary Containment

Using double-walled containers, spill pallets, berms, dikes, curbing, sumps, or standpipes can provide secondary containment. The secondary containment system should **must** hold: 100% of the largest container, or 10% of the total volume of all the containers in the system, whichever is larger.

Depending on the needs of the facility, secondary containments can be purchased ready-made from safety supply companies or designed and constructed for the specific site.

Ready-Made Secondary Containment Systems

If a ready-made containment system is selected, the product specifications **must** be reviewed by the Environmental Protection & Permitting Program Area (EP3) because not all ready-made containment systems meet all the health, safety, and environmental regulatory requirements.

SYSTEM	THINGS TO CONSIDER...
Spill pallets for drum storage	<ul style="list-style-type: none">• Before installing spill pallets for drum storage, check with the occupants to determine if this is an acceptable means of containment (for example, the AC shop does not support the use of spill pallets. They prefer that a permanent berm be constructed).• An access ramp may be needed to move the drums on to and off the spill pallet.
Portable berms	<ul style="list-style-type: none">• Some portable berms have soft sides that can be collapsed when moving drums in and out of the containment area.

SYSTEM	THINGS TO CONSIDER...
Double-walled tanks	<ul style="list-style-type: none"> • Use doubled-walled tanks with aboveground storage tanks (ASTs) and underground storage tanks (USTs). • Install in areas where space is a consideration because the containment system uses the same space as the AST or UST.

Custom Secondary Containment Systems

Custom secondary containment systems are used to accommodate specific site conditions. If feasible, this is often preferred for new facilities because a designed system is more ‘user friendly.’ Some examples include:

SYSTEM	THINGS TO CONSIDER...
Berms	<ul style="list-style-type: none"> • Berms are constructed for drum storage areas. • Berms can be designed with a “speed bump,” as part of or all of the berms, so that a drum cart can be used to move drums in and out of the containment area. • This type of system is used at the Transportation garage.
Standpipes or other means	<ul style="list-style-type: none"> • This system is used to block drains to prevent a potential release. • Unused drains must be plugged.
Sumps	<ul style="list-style-type: none"> • The storage area must be clearly designated and slope/drain to the sump. • The sump can be covered with a grate to allow drums to be easily rolled over it during deliveries. • This type of system is used for the storage areas at Lay Auto Lab.

Outdoor Containment Systems

Outdoor containment systems can accumulate precipitation. The containment system **must** be designed with sufficient freeboard to allow for precipitation.

NOTE: Double wall tanks do not have these concerns since because the second wall prevents rainwater from entering the containment.

After a storm event, the accumulated water **must** be inspected to determine if there is any sheen or other signs of contamination, before the water can be drained. If there is any contamination, then the water **must** be pumped out for special disposal.

To avoid precipitation accumulation and drainage issues, the containment system can be covered. There are a variety of containment sheds available through safety supply companies for drums for this purpose.

Indoor Storage Areas

Indoor storage areas **must** be checked for floor drains. A room may be considered secondary containment if there are no floor drains and no other potential pathway for a spill to spread outside of the room.

If there are drains, it may be possible to block the drains in order to provide containment.

Catchment for Tank Truck Loading and Unloading

During tank truck loading and unloading operations, sufficient catchment is required to contain the contents that are in the largest compartment of the tanker truck.

Because personnel are on site during tank truck loading and unloading, it is assumed that a spill will be noticed; and therefore, cleaned up quickly. Because of this assumption, catchment has a “looser” definition than secondary containment. The following parameters determine the site-specific catchment design:

- The size of the largest compartment in the tanker truck
- Area geography
- Size of the storage tank
- Frequency of loading and unloading oil
- Availability of site personnel
- Location of the storm drains

Catchment can be obtained using a portable system or fixed engineering controls. Many existing locations use portable systems for catchment. If a new loading/unloading facility is being constructed, or if there are renovations at an existing facility, then fixed engineering controls **must** be installed at that time.

Portable Systems

The following catchment systems provide catchment and can be obtained from safety supply companies.

SYSTEM	THINGS TO CONSIDER...
Blocking drains	<ul style="list-style-type: none">• The surface area (i.e. asphalt/concrete parking lot, impermeable surface, etc.) is considered as catchment when drains are blocked using spill mats, drain plugs, dikes, impermeable sheeting, hard covers, or other methods.• This is a simple way to provide catchment, but can be labor intensive, depending on the number of drains in the area.• The frequency of deliveries and availability of site personnel should also be considered in the selection of this method.• The site must also be able to be temporarily blocked from use during spill cleanups.
Portable Berms	<ul style="list-style-type: none">• May be needed on unpaved surfaces where spill mats and dikes would not properly seal with the surface around the drains.• A disadvantage of these systems is that depending on the catchment volume needed, the berm could weigh over 200 pounds.• Additional personnel would be needed to install the catchment system.

Fixed Engineering Controls

SYSTEM	THINGS TO CONSIDER...
Custom spill tanks	<ul style="list-style-type: none"> • A drain in the area is connected to the tank, which will to receive the oil in the event of a release. During loading and unloading, the drain is opened and then closed after the transfer is complete. • These systems can be installed in areas where space limited. • Any spills must be promptly reported. • The disadvantage to this method of catchment is that the tanks tend to accumulate precipitation or groundwater, despite the drain being closed. <ul style="list-style-type: none"> ○ If any liquid is discovered in the spill tank, it must be emptied within 10 days or the tank is considered a regulated UST and require registration. ○ A vacuum truck contractor is needed to empty out the tank and handle the waste disposal. ○ Over the long term this additional expense could become an important consideration.
Surface Catchment Areas	<ul style="list-style-type: none"> • This system is designed and constructed for catchment by using berms, grading, or diversions. • A drain or gap in a berm is required for drainage. When loading and unloading occurs, the drain or gap must be plugged and then unplugged after the transfer is complete. • The system needs to be designed to withstand the traffic load in the area. • A large area is needed to act as catchment. • The system is not recommended in an area where access cannot be blocked during a spill. <p>NOTE: For example, this system was not appropriate for the valet parking lot at the Hospital (Helipad tank) but may be appropriate in a maintenance area.</p>
Sumps or catch basin	<ul style="list-style-type: none"> • The sump can be covered with a grate to allow the delivery vehicle to drive over it. • The sump should have a drain which is normally open to allow for draining storm runoff. The drain must be closed (valve, plug, etc.) during loading/unloading operations to provide catchment.

A site should also review its operations to determine if steps can be taken to reduce their catchment requirements. For example, if a small tank is used with infrequent deliveries then drum storage could be substituted. Catchment would not be required since because there would be no tanker truck loading or unloading. The site personnel could also specify the maximum compartment size of the tanker truck used at their site and potentially reduce the required catchment volume.

If you have any questions, please contact Environment, Health & Safety, Environmental Protection & Permitting at (734) 647-1143.

Revision History

REVISION #	DATE	REVISION #	DATE	REVISION #	DATE	REVISION #	DATE
1	09/17/10	3	7/5/23				
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