

**NATURAL RESOURCES CONSERVATION SERVICE  
MONTANA CONSERVATION PRACTICE STANDARD**

## **ON-FARM SECONDARY CONTAINMENT FACILITY (NUMBER)**

### **CODE 319**

#### **DEFINITION**

A permanent facility designed to provide secondary containment of oil and petroleum products used on-farm.

#### **PURPOSE**

To minimize the risk of accidental release of stored oil and petroleum products used in agricultural operations to support the following purposes:

- Control accidental release of oil and petroleum products to prevent contamination of groundwater and surface waters.
- Provide measures for a safe, effective and timely manner for clean-up of a spill or leak.

#### **CONDITIONS WHERE PRACTICE APPLIES**

This practice is applicable to agricultural areas where:

- An oil and petroleum product storage facility will be used for agricultural purposes.
- Spillage of oil and petroleum products would pose a contamination threat to soil, groundwater, or surface water.

On-farm oil products include diesel fuel, gasoline, lube oil, hydraulic oil, adjuvant oil, crop oil, vegetable oil, or animal fat, as identified by U.S. EPA's Oil Spill, Prevention, Control, and Countermeasure (SPCC) regulation (40 CFR 112 Oil Pollution Prevention).

This practice does not apply to the removal of existing oil and petroleum storage tanks.

This standard does not apply to underground storage tanks.

This standard does not apply to commercial suppliers or multi-landowner storage facilities.

#### **CRITERIA**

**On-Farm Secondary Containment Facilities must be designed, inspected, and approved by a registered Technical Service Provider. An SPCC plan may be required prior to the implementation of this practice. See Laws and Regulations.**

#### **Laws and Regulations**

Plan, design, and construct secondary containment facility to meet all federal, state, tribal, and local laws and regulations. The owner or operator is responsible for securing all required permits or approvals.

U.S.EPA's SPCC regulation (40 CFR 112) provides the threshold criteria for the development of a certified SPCC plan by the owner or operator or Professional Engineer.

**A SPCC plan is a narrative emergency response plan which inventories the on-farm oil storage facilities and the operation and management of those facilities. It also incorporates specific steps for preventing, controlling, and mitigating oil spills.**

**Under the following conditions, a SPCC plan is not required:**

- **An aggregate aboveground storage capacity less than 2,500 gallons, OR**
- **An aggregate aboveground storage capacity greater than 2,500 gallons and less than 6,000 gallons, and**
- **No reportable discharge history.**

**NRCS, MT  
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**Conservation practice standards are reviewed periodically and updated if needed. To obtain the current version of this standard contact the Natural Resources Conservation Service.**

**NOTE:** This type of font (**AaBbCcDdEe 123..**) indicates NRCS National Standards.  
This type of font (**AaBbCcDdEe 123..**) indicates Montana Supplement.

Under the following conditions, a SPCC plan is required, but the owner or operator can prepare and self-certify the SPCC plan.

- An aggregate aboveground storage capacity greater than 6,000 gallons but less than 20,000 gallons,
- No individual tank with a capacity greater than 10,000 gallons; and
- No reportable discharge history.

A SPCC plan template for Tier 1 Facilities (individual tanks < 5,000 gallons) is available from the EPA website: <http://www.epa.gov/oil-spills-prevention-and-preparedness-regulations> under the “Qualified Facility Determination” link.

Guidance for the development of a SPCC plan for Tier 2 Facilities (individual tanks > 5,000 gallons but aggregate storage < 10,000 gallons) can be found in the SPCC Rule (40 CFR 112, Subsection 112.7 and Subparts B or C) at: [http://www.ecfr.gov/cgi-bin/text-idx?tpl=/ecfrbrowse/Title40/40cfr112\\_main\\_02.tpl](http://www.ecfr.gov/cgi-bin/text-idx?tpl=/ecfrbrowse/Title40/40cfr112_main_02.tpl)

Under the following conditions, a SPCC plan must be prepared and certified by a certified Technical Service Provider:

- An individual tank with an aboveground storage capacity greater than 10,000 gallons, or
- An aggregate aboveground storage capacity greater than or equal to 20,000 gallons, or
- A reportable discharge history.

Aggregate aboveground storage includes oil products in containers greater than 55 gallons that are located within the farmstead or contiguous (connected) piece of property. The maximum volume of individual tanks or containers shall be included in the aggregate storage calculation (as if they were full).

In the calculation of aggregate storage, do NOT count the following:

- Containers storing heating oil used solely for a single-family residence,
- Pesticide application equipment or related mix containers (with adjuvant oil),

- Completely buried tanks (underground storage tanks or UST’s) and associated piping and equipment,
- Containers holding animal feed ingredients approved for use in livestock feed by the FDA.

The owner or operator must apply for a State Electrical Permit and inspection if the secondary containment facility includes electric appliances such as pumps and lighting.

Aboveground petroleum storage tanks and secondary containment facilities are exempt from the State Fire Code (2012 IFC) as stated in MCA 50-3-103(6).

### General Containment

Use only containment systems constructed, manufactured or fabricated for the purpose of containing oil, fuel, or other on-farm petroleum products.

Secondary containment facilities shall be liquid-tight to protect both surface and ground water. They shall be constructed with reinforced concrete, corrugated metal, or geosynthetic-lined earthfill.

Anchor non-mobile oil storage tanks to the bottom of the secondary containment facility to prevent the tank from floating in the event of a catastrophic leak or accidental spill from adjacent tanks. If fixed anchorage is impractical due to excessive buoyant forces, the tank(s) may be tethered (e.g., cables) to allow floatation but restrict drifting that can damage the tank wall, valves, or electrical connections.

Locate tanks on a clean, hard or compacted surface where leaks can be detected, collected and contained. Use a similar surface beneath any pipes or appurtenances in the vehicle filling area.

Maintain a minimum 3-foot separation distance between tanks for inspection and emergency response. Maintain a minimum 3-foot separation distance between the outside dimensions of the tank and the secondary containment wall for inspection and emergency response.

Containment structures exposed to rain shall have provisions for removal of accumulated rain water. Types of water removal systems can include sump and pump or fire-resistant valve

**and outlet pipe. Containment floors shall be sloped to effectively drain rain water.**

Divert runoff water from storms equal to or less than the 25-year, 24-hour storm event from entering the secondary containment facility.

### **Location**

Locate secondary containment facilities above the 100-year floodplain elevation. However, if site restrictions require location within a floodplain, design to protect the facility from inundation and damage from the 25-year flood event.

Evaluate the potential risk to water quality associated with petroleum products planned or present on the farm. Locate secondary containment facility:

- As far as practical from streams, ponds, lakes, wetlands, sinkholes, and water wells, with a minimum setback distance of 100 feet;
- 25 feet away from on-farm traffic and 75 feet away from major off-farm traffic flow;
- 10 feet away from any building to limit the spread of a fire.
- **100 feet from property lines where the adjacent land is buildable. 2012 IFC 2306.2.3**
- **50 feet from occupied residential buildings, e.g., a farm house. 2012 IFC 2306.2.3**

**Consult the State Conservation Engineer when planning secondary containment facilities for small irrigation fuel tanks adjacent to streams, where the containment facility may be exposed to streambank erosion or inundation by floods less than the 25-year event.**

### **Sized Containment**

An enclosed secondary containment structure shall contain 100% of the capacity of the largest storage tank. An open secondary containment structure shall contain 100% of the capacity of the largest storage tank plus the volume of the 25-year 24-hour rainfall event. **The final size of the secondary containment structure shall compensate for the loss of volume consumed by other internal tanks, containers, and framework.**

### **Structural Design**

Address all factors that will influence the performance of the secondary containment structure, including anticipated loading, tank sizes, material properties, and construction quality.

**Ensure the foundation has sufficient bearing capacity for point loads or distributed loads from oil or fuel tanks to prevent bearing failure, excessive or differential settlement, and cracking.**

**Ensure that the concrete floor and walls meet ACI 350 to ensure adequate reinforcement to prevent excessive cracking from temperature and shrinkage. Typically, small secondary containment facilities for agricultural purposes do not include control joints or expansion/contraction joints in order to avoid complications during construction.**

**Ensure corrugated metal walls, posts, and post footings have sufficient strength to prevent excessive deflection or collapse under hydrostatic loads.**

**Ensure that the secondary containment structure and the internal tanks are stable against uplift or buoyancy forces which may occur from external flood or internal spill from adjacent tanks.**

Base the structural design of the containment facility, including earthen dikes and roofed structures (if applicable) on the criteria contained in the NRCS Conservation Practice Standard (CPS) *Waste Storage Facility* (Code 313) and *Roofs and Covers* (Code 367).

**The design, construction, and installation for aboveground, double-walled, petroleum storage tanks shall meet the Administrative Rules of Montana ARM 17.57.101-107. The standards listed in these rules shall be followed regardless of whether the landowner participates the Montana Petroleum Tank Release Cleanup Fund.**

### **Safety**

Provide the storage facility with appropriately marked signs. Post a "No Smoking" sign near the fueling areas. Ensure that all fill ports **or tanks walls are labeled with the fuel type, or painted with the appropriate paint code according to API Standard 1637, e.g., gasoline-red, diesel-yellow, and kerosene-brown.**

Provide security measures to limit unauthorized access to the storage tanks and secondary containment structures such as security lighting, fencing, and locks on fuel dispensers.

Protect storage tanks from damage by vehicles, tractors, and other farm equipment **using guard rail, curbs, or bollards. Recommendations can be found on the Aboveground Storage Tank Self-Inspection Checklist can be found at: <http://deq.mt.gov/DEQAdmin/PET/forms>**

Provide adequate ventilation in roofed structures to prevent the buildup of excess fumes and development of vacuum or pressure exceeding the design pressure as a result of filling, emptying, or atmospheric temperature changes.

### CONSIDERATIONS

A secondary containment facility may be roofed, sided or otherwise covered to prevent rain, snow, and debris from accumulating in the containment.

Tanks should have a level gauge. Pipe connections to the tanks should be at the top of the tanks to prevent a spill from a leaky connection. Locate piping and valves within the secondary containment structure.

Consider elevating tanks to ease inspection for leaks.

Install automatic shutoff valves and **hoses with breakaway devices** on electrically operated dispensers.

**An owner or operator may register an aboveground petroleum storage tank and secondary containment facilities with the Montana Petroleum Tank Release Compensation Board for the purposes of determining eligibility under the Montana Petroleum Tank Release Cleanup Fund. The fund provides up to a \$1 million in compensation for petroleum spill cleanup (owner deductible is 50% of the first \$35,000).**

**An owner or operator may apply for registration by submitting a signed and completed application on a form provided by the Board. Applicable rules governing the installation, operation, and maintenance of aboveground petroleum storage tanks can be found in the Administrative Rules of Montana ARM 17.58.101-344. Questions can be directed to Executive Director Terry Wadsworth (406) 444-9714 or**

**<http://deq.mt.gov/DEQAdmin/PET>. An Aboveground Storage Tank Self-Inspection Checklist can be found at: <http://deq.mt.gov/DEQAdmin/PET/forms>**

### PLANS AND SPECIFICATIONS

Prepare plans and specifications for on-farm secondary containment facility that describe the requirements for applying the practice to achieve its intended purpose. As a minimum, provide the following in the plans and specifications:

1. Plan view of system layout.
2. Structural and material details of all components including drawings and specifications.
3. Locations, sizes, and type of pipelines, **tanks**, and appurtenances.
4. Requirements for foundation preparation and treatment.
5. Safety features, fencing, and signage.
6. Location of utilities and notification requirements.

### OPERATION AND MAINTENANCE

Prepare an operation and maintenance plan that is specific to the components used on the site. Provide instructions for operating and maintaining components to ensure proper function. **Provisions for the operation and maintenance of secondary containment facilities should be included in the SPCC Plan if required.**

Maintain a list of all the storage tank capacities and products the tanks contain for each secondary containment facility.

Provide for inspection of storage tanks regularly according to the schedule outlined in the facility SPCC plan. As a minimum, tanks should be inspected monthly and repairs conducted promptly for:

- Leaks.
- Rust or corrosion.
- Accumulation of trash or weeds.
- Proper labeling and signage.

- Condition of valves, fittings and hoses.
- Collected precipitation.

Provide instructions for **inspecting** accumulated rain water for contamination before removal from the containment structure. Contamination testing may involve on-site analysis of rainwater or a visual observation to determine a discoloration or sheen on water surface or the presence of an odor of petroleum products in the water.

**The SPCC Plan and/or Operation and Maintenance Plan shall state that rainwater can be released from the secondary containment facility after any observed oil sheen is removed with a floating absorbent pad available from several commercial vendors. The contaminated pads can be wrapped in a plastic bag and landfilled.**

**If the vehicle filling area is not designed to gather and contain the maximum spill from a delivery truck or tanker, the SPCC Plan and/or Operation and Maintenance Plan shall include a statement that all product transfers shall be constantly monitored.**

Perform maintenance as needed. Keep records of inspection and repair.

## REFERENCES

American Petroleum Institute (API), Standard 1637, "Using the API Color-Symbol System to Mark Equipment and Vehicles for Product Identification at Gasoline Dispensing Facilities and Distribution Terminals."

Underwriters Laboratories, Standard No. 142, "Standard for Steel Aboveground Tanks for Flammable and Combustible Liquids."

Environmental Protection Agency, The Spill Prevention, Control, and Countermeasure (SPCC) rule.  
<http://www.epa.gov/emergencies/content/spcc/index.htm>

**Water Resources Reform and Development Act (WRRDA) of 2014. This Act revised the EPA's original SPCC Rule.**