

**NATURAL RESOURCES CONSERVATION SERVICE  
CONSERVATION PRACTICE STANDARD**

**AGRICHEMICAL HANDLING FACILITY**

(Each)

**CODE 702**

**DEFINITION**

The Agrichemical Handling Facility (AHF) is a permanent structure with an impervious surface to provide an environmentally safe area for the handling of on-farm agrichemicals, such as pesticides and fertilizers that are used in application operations on agricultural lands.

**PURPOSE**

To provide for the containment and isolation of spillage from on-farm agrichemical mixing, loading, unloading, and rinsing operations in order to minimize pollution of, or harm to, the soil, water, air, plant, or animal resources.

**CONDITIONS WHERE PRACTICE APPLIES**

This standard applies where current methods of mixing agrichemicals and rinsing equipment are polluting or can pollute, or harm, the soil, water, air, plant, or animal resources.

**CRITERIA**

**General Criteria.** The AHF shall include a watertight containment structure comprised of a concrete pad and depressed sump, and all necessary equipment for pumping, transferring, and storing containment liquid. Fertilizer storage tanks shall be isolated from those used for pesticide storage at those sites where both types of chemicals are used.

Measures shall be designed to divert runoff from adjacent areas resulting from a 25 year 24 hour duration storm event.

The AHF shall be located outside the 100-year flood plain and wetland areas.

The AHF shall be isolated from other buildings used to store feed, seed, petroleum products, or livestock and from residences; and located downwind of these buildings when possible.

Access shall be a graveled or paved ramp with a minimum length of 12 feet and a maximum slope of 15%. Ramp grade shall be away from the pad area. All other areas around the pad shall be established in vegetation or covered with other erosion resistant materials.

All concrete materials shall comply with the requirements of ACI 318 Building Code Requirements for Reinforced Concrete.

The containment volume for an AHF covered with a roof shall be 125% of the volume of the largest sprayer or chemical tank that will be located on the pad.

The containment volume for an AHF not covered by a roof shall be 125% of the volume of largest sprayer or chemical tank that will be located on the pad, or the volume from a 2 year, 24 hour storm event over the entire pad area, whichever is greater.

Methods for handling rainwater and snow melt runoff shall be designed into the AHF.

The facility and all components shall comply with the applicable Federal, State and Local laws and codes.

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

**Pad.** The pad shall be a concrete slab-on-grade with a positive slope of at least 2% (1/4 inch per foot) from all areas toward the sump.

The minimum length and width of the pad shall be sufficient to accommodate the existing or anticipated equipment.

The required thickness and reinforcement of the slab shall be determined on the basis of the wheel loads of the existing or anticipated equipment. Design should be based upon methods described in the ACI 360R Code, "Design of Slabs on Grade" or other similar industry guides.

The pad and sump shall be sealed with a chemically resistant, non-vapor barrier forming coating to prevent contamination of the concrete surfaces. A "microsilica" concrete additive, meeting manufacturer's recommendations, may be used in lieu of coating.

Surface preparation and coating application shall be according to the manufacturer's recommendations.

The minimum slab thickness shall be 5 inches and the minimum reinforcement shall be 10 by 10 gauge, 6 inch by 6 inch welded wire fabric. Waterstop shall be used between the pad and curb walls when constructed in separate concrete placements.

**Sump.** The sump shall be watertight and constructed of non-corrodible material, and shall be covered with a corrosion resistant grating of sufficient size to allow access for cleaning. The sump shall not be used for storage of spillage or rinsate.

**Roof.** The roof, if provided, shall cover the entire AHF and shall extend sufficiently to prevent precipitation from accumulating on the pad.

The minimum clearance between the lowest chord of the roof and the highest area of the pad shall provide clear access for the spray equipment and shall be not less than ten (10) feet. Enclosure supports shall be located outside of the AHF.

The roof shall be designed for the minimum loads contained in the ASAE EP288.4 "Agricultural Building Snow and Wind Loads".

**Pump.** The pump shall be permanently installed and corrosion resistant with provisions for protection during winter months.

The pump shall be dedicated to the agrichemical handling facility and shall not be used for other purposes. The pump and appurtenances shall be corrosion resistant.

A filter shall be installed between the pump and the sprayer or storage tank(s).

**Storage Tank(s).** Provisions shall be made for the temporary storage of 100 percent of the volume of the largest sprayer or chemical tank that will be on the pad, or 25 percent of the containment volume of the facility, whichever is greater. This volume may be provided with storage tank(s) dedicated to this purpose used alone or in combination with spray equipment tanks or other farm tanks that are reliably available.

All dedicated storage tank(s) shall be permanently installed and above the grade on the pad or on an adjacent pad.

The tank(s) shall be constructed of non-corrodible material(s).

**Piping.** All piping necessary to transfer contaminated water between the sump, the pump, temporary storage tank(s), and sprayer shall be of material compatible with the chemicals being used. Flexible hosing especially designed for agricultural service or light industrial service may be utilized for these purposes.

All transfer piping carrying contaminated water shall be completely exposed for its entire length. Where complete exposure is not feasible or possible, double walled piping, with free drainage of the outer pipe back into the sump, may be utilized.

All piping necessary to supply non-contaminated water to the pad shall be fitted with backflow prevention devices.

All transfer piping shall be fitted with backflow prevention devices between the pump and storage tank(s) and between the storage tank(s) and the spray tank(s).

**Monitoring Well.** A minimum of one monitoring well shall be installed down gradient from the AHF. The well shall be constructed of non-perforated PVC pipe with cap. PVC pipe shall be installed vertically to a minimum depth of 10 feet below the ground surface or to a depth two feet below seasonal high water table, whichever is greater.

## CONSIDERATIONS

The following shall be considered when designing an AHF:

The need for a roof structure over the pad to reduce rainwater storage requirements and runoff problems. The installation of sidewalls should also be considered.

Building orientation or roof construction such that the accumulation of wind blown precipitation will be avoided.

The availability of water and the distance to water sources.

Proximity and gradient to water resources and geographic features such as springs, wells, lakes, wetlands, and sinkholes.

On-farm traffic patterns and accessibility to chemical application areas and chemical storage.

Adjacent land uses and visibility.

The effects of chemical drift on surrounding areas due to prevailing winds.

The need for an emergency washing area with a faucet and a shower with a pull chain, for washing eyes, face, and bodies in the event of an accidental exposure to chemicals.

A minimum of one fire extinguisher shall be installed.

Accessibility to a telephone and prominent posting of emergency telephone numbers.

The need for ventilation devices in facilities which are completely enclosed in order to dissipate chemical dusts and vapors or to minimize the presence of condensation on liquid storage tanks.

The need for a loading platform to facilitate the filling and/or rinsing of spray equipment.

Building architecture and materials that are compatible with the surrounding structures.

The need for security of chemicals, fertilizers and pesticides such as locks. Signs shall be posted to show location of chemicals, telephone, emergency wash area, fire extinguishers, exits and any other emergency measures.

## PLANS AND SPECIFICATIONS

The construction drawings for the AHF shall comply with this standard. The following statement shall appear on all construction drawings for AHF's:

"Management of chemicals shall be the responsibility of the owner/operator and shall be in accordance with applicable Federal, State and Local regulations." (See References).

Plans and specifications shall describe the site-specific requirements for implementing this practice to achieve its intended use.

**Design Data.** The following information shall be recorded in the design and/or on the drawings, as applicable:

1. A drawing showing the facility with contour information in relation to the surrounding buildings, streams, brooks, wells, etc.
2. Detail designs for special components such as: curbs, hydrants, sump, pump configuration, stormwater diversions, etc.
3. Calculations showing design and required storage capabilities of the facility.
4. Erosion and sediment control measures as needed.
5. A log of all drilled wells within 1000 feet.
6. Water testing information.
7. List of emergency components to be installed such as fire extinguisher, emergency wash station, signs, etc.

**Construction Check Data.** The following information shall be recorded on the drawings or on the design to certify installation of the facility:

1. Final survey elevations or depths and dimensions of the pad, curbs, sump, etc.
2. Locations of buried pipelines and power cables where installed as part of the facility.
3. Checklist of other components required in the design.

### **OPERATION AND MAINTENANCE**

An operation and maintenance (O&M) plan shall be developed that is consistent with the purposes of this practice, its intended life, safety requirements, and the criteria for its design. It shall address:

Proper disposal/utilization of rinsate, exterior washwater, accumulated sediment, spillage wastewater, containers and clothing in accordance with the pesticide labeling requirements and Federal, State, and Local laws and codes.

Storm-water handling process.

Periodic inspection of hoses, piping, pump(s), and testing of backflow prevention devices.

Monitoring of groundwater if deemed necessary.

Inspection of the pad and sump for cracks and leaks, and deterioration of the sealant.

Cleaning the sump and pad between different chemical mixing operations and removal of sediment accumulation from the sump, taking proper precautions to reduce worker exposure.

Winterization of the facilities.

Emergency response instructions in case of an accidental pesticide spill, exposure, fire or other incident that could adversely affect environmental health.

Posting warning signs that hazardous chemicals are present.

The owner or applicator will have appropriate applicators license or permits for chemicals used at the facility. Applicator will have and use all required personal protection equipment as listed on chemical labels.

### **REFERENCES**

<http://www.epa.gov/pesticides>

[http://www.epa.gov/pesticides/citizens/pest\\_secu\\_alert.htm](http://www.epa.gov/pesticides/citizens/pest_secu_alert.htm)

<http://www.state.vt.us/agric/pid.htm>