NATURAL RESOURCES CONSERVATION SERVICE
CONSERVATION PRACTICE STANDARD

AGRICHEMICAL MIXING FACILITY

New York
(number)
code NY702

DEFINITION

The Agrichemical Mixing Facility (AMF) is a permanent structure designed to provide an area for controlled mixing and containment of on-farm agrichemicals.

PURPOSES

To protect the environment by containing, collecting, and storing on-farm agrichemicals during mixing, loading, unloading, and rinsing operations.

CONDITION WHERE PRACTICE APPLIES

This standard applies where fertilizers and pesticides are mixed and loaded and where equipment is cleaned. An agrichemical storage facility, if needed shall be designed by others to meet current DEC and federal requirements.

CRITERIA

Location:

Locate AMF's away from hydrologically sensitive areas.

The AMF shall be located outside the 100 year flood plain and wetland areas, 100 feet from private wells and surface water bodies, and 500 feet from wells used for public water supply.

General:

Measures shall be designed to divert the clean and collect potentially contaminated runoff resulting from a 25 year 24 hour duration storm event.

The AMF shall include a watertight containment structure comprised of a concrete pad, depressed sump, storage tank, and all necessary equipment for pumping, transferring, and storing contaminated water. Fertilizer storage tank(s) shall be isolated from those used for pesticide storage at those sites where both types of chemicals are used. All federal, state, and local laws, rules, ordinances and regulations governing agrichemical mixing, pollution abatement, health and safety shall be followed.

Producers are responsible for securing the necessary permits to install the required facilities and for properly managing the facilities.

Stormwater discharges druing non-use periods will be addressed.

Stabilize all disturbed areas around the AMF.

Components:

The system for an AMF shall include those components necessary to contain rinsate, accidental spills and leaks during use. Components of a complete facility must include, but are not limited, to the following:

1. A curbed, chemical mixing and loading pad;
2. A collection sump and sump pump;
3. An adequate water supply for mixing chemicals, rinsing tanks and containers and for emergency health and safety needs including water supply pump, pipeline, hoses, back-flow prevention devices, and other hardware as needed;
4. Tanks for storage of rinsate and potentially contaminated runoff;
5. An Operation and Maintenance Plan;
6. An Emergency Safety Contingency Plan.

Capacity of AMF System:

The pad and sump combined will be designed to contain 125% of the volume of the largest chemical or spray tank on the pad.

The pad, sump and storage tank combined will be designed to contain the 25 yr. - 24 hr. storm.

The storage tank will contain 100% of the volume of the largest chemical or spray tank on the pad.

Pad:

The size of the concrete pad used for the chemical mixing operation shall be the length and width of the largest sprayer, with booms folded in, plus 10 feet.

The pad shall be a concrete slab-on-grade with a positive slope from all areas toward the sump.

The concrete slab will be designed to prevent cracking. Construction joints will be designed to transfer loading. Joints will be sealed at the surface and have water stops installed. Slabs will be reinforced and thickened at equipment entry points.

Sump:

The sump shall be designed to withstand the anticipated loads and to prevent flotation. Determine sump capacity based on sump pump requirements. Grit removal methods will be specified to protect the pump.

Sump Pump:

The sump pump shall be selected to provide the discharge rate at the head requirements of the site and the potential corrosive characteristics of the agrichemicals.

Roof:

Use of a roof to cover the pad is strongly encouraged. Design of the roof shall meet all local and state codes. Drawings and specifications of the roof shall be submitted and accepted prior to the AMF installation.

Water Supply:

A reliable water supply (well or reservoir) shall be provided to the pad at a minimum of 5 gallon per minute. Backflow prevention and a method to allow winterizing of the pipelines shall be installed on all water supply lines.

Storage Tank(s)

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

The storage tank material shall be compatible with the agrichemicals to be stored.

Provide an adequate number of tanks to prevent mixing of incompatible chemicals.

Employee Safety -Decontamination Site:

An emergency washing faucet and emergency eye-wash station shall be installed. A drop shower is recommended. A permanent water supply or volume of water for a total bath in accordance with the EPA Worker Protection Act of 1993 will be installed at the AMF.

CONSIDERATIONS

Select a site that has not been used previously for chemical storage, mixing, loading or equipment rinsing.

Consider use of an pump filled elevated clean water tank to provide gravity feed water to use with spray equipment.

Consider the use of additives such as micro-silica or fiber to increase surface hardness of the concrete pad.

The concrete surface can be treated to protect from deterioration from chemicals.

Consider a loading platform to facilitate the filling of spray equipment.

Locate the AMF downwind and downhill from sensitive areas such as houses, gardens, and recreation areas.

Locate the AMF as near as practicable to the agrichemical storage facility.

PLANS AND SPECIFICATIONS

Plans and specifications for constructing AMF's shall be prepared in accordance with the criteria contained in this standard and shall describe the requirements for applying this practice to achieve its intended use.

The following statement shall appear on all construction drawings for AMF’s

> “Management of chemicals shall be the responsibility of the owner/operator and shall be in accordance with applicable federal, state and local regulations.”

OPERATION AND MAINTENANCE

An operation and maintenance (O&M) plan shall be developed that is consistent with the purposes of this practice and shall cover three (3) areas:

* A set of general procedures that need to be followed prior, during and after any chemical mixing operation.
* Specific information about the operation including list of chemicals, location layout, emergency telephone and other site specific data.
* Safety and handling procedures in case of spills as well as training and inspection guidance.

REFERENCES

Designing Facilities for Pesticide and Fertilizer Containment. Mid West Plan Service MWPS-37. Ames, IA. 1991.

Reinforced Concrete Strength Design. Technical Release-67, USDA-SCS, National Engineering Staff Design Unit. 1980.

Environmental Engineering Concrete Structures. ACI350r-89, American Concrete Institute, Detroit, MI, 1989

Design of Slabs on Grade. ACI360r-92; American Concrete Institute, Detroit, MI, 1992.

Building Code Requirements for Reinforced Concrete and Commentary. ACI318-95/ ACI318R-95, American Concrete Institute. Detroit, MI. 1995