

NATURAL RESOURCES CONSERVATION SERVICE
PACIFIC BASIN AREA
CONSERVATION PRACTICE STANDARD

WATER FACILITY

(Number)
CODE 614

DEFINITION

A device (tank, trough, or other watertight container) for providing animal access to water.

PURPOSE

To provide watering facilities for livestock and/or wildlife at selected locations in order to:

- Protect and enhance vegetative cover through proper distribution of grazing;
- Provide erosion control through better grassland management; or
- Protect streams, ponds and water supplies from contamination by providing alternative access to water.

CONDITIONS WHERE PRACTICE APPLIES

This practice applies to all land uses where there is a need for new or improved watering facilities.

CRITERIA

General Criteria Applicable to all Purposes

A water facility shall have adequate capacity to meet the water requirements of the livestock and/or wildlife. This will include the storage volume necessary to carry over between periods of replenishment. Animal water requirements can be obtained from the NRCS Engineering Field Handbook, Table 11-1.

Where water supplies are dependable and livestock are checked daily, a water facility with little water storage capacity may be used. Water facilities must provide the daily water requirement of the livestock and provide access to the entire herd within a short period of time.

The site shall be well drained; if not, drainage measures shall be provided. Areas adjacent to the water facility that will be trampled by livestock shall be graveled, paved, or otherwise treated to provide firm footing and reduce erosion. Design of the protective surface around the trough shall be in accordance with Pacific Basin standard, Heavy Use Area Protection (561).

Automatic water level control and/or overflow facilities shall be provided as appropriate. Valves or pipes shall be protected by shields or covers to prevent damage by livestock. Overflow shall be piped to a stable or suitable point of release. The water facility's outlet pipes shall be protected from damage from destructive winds (typhoons), livestock or wildlife.

When a roof is placed over the water facility to provide shade, the roof shall be designed for appropriate wind loads and shall be durable to withstand anticipated livestock and wildlife activities.

All materials shall have a life expectancy that meets or exceeds the planned useful life of the installation. Common construction materials are reinforced concrete, steel, fiberglass, plastic and wood. All designs shall meet the industry standards for the material being used.

Generally applicable design requirements and procedures can be found in the documents referenced at the end of this standard.

Concrete structures shall be constructed from a concrete mix producing a minimum compressive strength of 3,000 psi at 28 days. Galvanized steel tanks shall have a minimum thickness of 20 gauge. Plastic and fiberglass structures shall be made of ultraviolet resistant materials or shall have a durable

WATER FACILITY 614 - 2

coating to protect the structure from deterioration due to sunlight.

CONSIDERATIONS

This practice may adversely affect cultural resources. Planning, installation and maintenance must comply with GM 420, Part 401.

Topography should be evaluated to minimize trail erosion and flooding erosion from tank overflow.

Watering facilities should be accessible to small animals. Escape ramps for birds and small animals should be installed.

Adequate protection for livestock during adverse weather conditions should be considered.

PLANS AND SPECIFICATIONS

Plans and specifications for installing water facilities shall be in keeping with this standard and shall describe the requirements for applying the practice to achieve its intended purpose. If the water facility is a component of a system that includes additional conservation practices, the information necessary to construct these additional practices will also be conveyed on the plans.

Development of plans will be guided by Engineering Field Handbook, Chapter 5, and shall be in accordance with National Engineering Manual, Parts 541 and 542.

OPERATION AND MAINTENANCE

An O&M plan specific to the type of installed water facility shall be provided to the landowner. The plan shall include, but not be limited to, the following provisions:

1. Check for debris, algae, sludge or other materials in the water facility which may restrict the inflow or outflow system;
2. Check for leaks and repair immediately if any leaks are found;
3. Check the automatic water level device to insure proper operation;
4. Check to ensure that adjacent areas are well protected against erosion;
5. Check to ensure the outlet pipe is freely operating and not causing erosion problems; and

6. Prepare guidance for adverse weather.

Algae, iron or lime accumulation should be addressed in areas with water quality that is known to cause problems. Chemicals such as copper sulfate and chlorine can be recommended as needed, as long as local rules and regulations are followed.

REFERENCES

1. Engineering Field Handbook
2. National Engineering Manual
3. Manual of Steel Construction, American Institute of Steel Construction
4. Timber, National Design Specification for Wood, American Forest and Paper Association
5. Concrete, ACI 318, American Concrete Institute
6. Masonry, Building Code Requirement for Masonry Structures, ACI 530, American Concrete Institute