

**NATURAL RESOURCES CONSERVATION SERVICE
CONSERVATION PRACTICE STANDARD**

WATER HARVESTING CATCHMENT

(No.)

CODE 636

DEFINITION

A facility for collecting and storing runoff from precipitation.

PURPOSE

Provide water for livestock, fish, wildlife, or other conservation purposes, by creating impervious areas to increase, collect, and store runoff.

CONDITIONS WHERE PRACTICE APPLIES

This practice applies to resource conservation systems where there is a need for additional supply of water.

This practice applies to the sealing of the ground surface or the construction of elevated roof structures. It also applies to curbs and diversions constructed to collect and store runoff from existing impervious areas such as rock outcrops or existing pavement.

This practice does not apply to the collection and storage of runoff from existing roofed structures, which is addressed by NRCS Conservation Practice Standard, Roof Runoff Structure (558).

CRITERIA

Water harvesting catchments shall be designed according to the water requirements and conditions of the site, in accordance with the following:

- The contributing drainage area shall be large enough to yield the quantity and quality of runoff water required for the intended use.
- Aprons on the ground surface shall be smooth and impervious, to insure that

adequate runoff occurs. Compacted earth, treated earth, wax, rubber, plastic, asphalt, concrete, steel, and other suitable materials are acceptable for this purpose.

- Undesired runoff shall be diverted from the catchment area to prevent damage, contamination, or excessive sedimentation.
- An overflow pipe or auxiliary spillway shall be installed to prevent damage to the surface apron from runoff in excess of that needed to maintain the design capacity of the conveyance system. A sediment trap shall be installed between the surface apron and the storage facility.
- The storage facility shall be of adequate size, impermeable, and durable to hold water for the intended purpose. Earthen basins, or tanks constructed of steel, concrete, plastic, wood, or similar materials, are acceptable. Earthen reservoirs shall have a minimum 1 foot of freeboard above the design high water surface elevation. All storage facilities shall be protected from a minimum 10-year-frequency rainfall event. Overflow protection shall be provided for all storage facilities.
- Aprons on the ground surface and elevated roof structures shall be protected from damage by weather, animals, vandals, and traffic. Fencing shall be installed as necessary.

CONSIDERATIONS

Consider the effects the practice has on the quantity and quality of surface and ground water resources. Factors may include changes in evaporation, timing of releases from the catchment, and the impact of the type of catchment on surface water versus ground water resources.

Evaporation control measures may be needed to reduce water losses.

Consider covered storage basins or tanks, to preserve water quality of the harvested runoff.

Consider the installation of animal exclusion or escape devices to protect against the accidental drowning of wildlife.

Elevated roof structures or storage tanks may require additional design criteria to meet state or local building codes/permit requirements.

PLANS AND SPECIFICATIONS

Plans and specifications for water harvesting catchments shall be in keeping with this standard and shall describe the requirements for installing the practice to achieve its intended purpose.

OPERATION AND MAINTENANCE

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

- Inspecting and testing valves, pumps, or other appurtenances.
- Maintaining protection from erosion at outlets.
- Inspecting for and removing debris, minerals, algae, and other materials that may restrict system flow.
- Draining or providing for cold weather operation of the system.
- Controlling vegetation, wildlife, rodents, or burrowing animals from damaging apron.
- Maintaining all fences to prevent unauthorized human or livestock access.
- Inspecting the catchment area for signs of ultraviolet degradation of flexible materials.

REFERENCES

USDA-ARS, Agriculture Handbook No. 600, Handbook of Water Harvesting.