

**NATURAL RESOURCES CONSERVATION SERVICE
PACIFIC ISLANDS AREA**

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.
- *Storage tank materials and construction shall conform to the Pacific Islands Area Standard for Watering Facility (614).*
- *Storage basins shall conform to Pacific Islands Area Standard for Pond (378).*
- *Storage basin linings shall conform to Pacific Islands Area Standard for Pond Sealing or Lining (521A).*
- 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.

Conservation practice standards are reviewed periodically and updated if needed. To obtain the current version of this standard, contact your Natural Resources Conservation Service [State Office](#) or visit the [electronic Field Office Technical Guide](#). *Italicized font represents state-specific additions to the standard, which are more specific than guidance in the national standard.*

**NRCS, PI
June 2011**

The Rainfall Harvesting System design aide (EFM Notice HI-21), located in the National Engineering Handbook Part 650, Chapter 11, may be used for system design.

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

Prepare plans and specifications in accordance with the criteria of this standard and describe the requirements for applying the practice to achieve its intended use, including:

Construction drawings for the catchment area shall include:

- *Catchment area layout and dimensions,*
- *Material specifications to seal or surface the catchment area, and*
- *Rain shed structural requirements.*

Construction plans for the earthen storage basin shall include:

- *Storage basin dimensions,*
- *Embankment profile and cross-section,*
- *Auxiliary spillway profile and cross-section,*
- *Material specifications for the Inlet and outlet pipe, and*
- *If lining is needed, lining material specifications and installation.*

The Pacific Islands Area Water Harvesting Catchment (636) Specification shall be furnished as a construction specification.

OPERATION AND MAINTENANCE

The Pacific Islands Area Operation and Maintenance Plan specific to the type of installed water harvesting catchment shall be provided to and reviewed with 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.

USDA, NRCS. 2000. National Engineering Handbook, Part 650, Chapter 11. Washington, D.C.