

Practice: 636 - Water Harvesting Catchment

Scenario: #1 - Collection Water - Poly

Scenario Description: Collect water from surface runoff into a 1550 collection tank. Structure is supported on a concrete base (4") with strapping and tie downs according to manufacture. Diverted collected water from catchment area with guttering and downspout (Roof Runoff- 558) through a 4" diameter PVC Schedule 40 pipe, to storage tank for subsequent use. Resource concerns: Livestock production limitation - Inadequate livestock water; Insufficient water - Inefficient use of irrigation water. Associated practices: 382 - Fence; 614 - Watering Facility; or 436 - Irrigation Reservoir, Roof Runoff (558), Underground outlet(620).

Before Situation: Inadequate water available to address resource concerns. Client hauls water to supply needs.

After Situation: The guttering and downspouts collects the roof runoff and the water is conveyed through a pipe, by gravity, to a storage tank for use by livestock or a very small irrigation system. This system is the primary collection component of a Water Harvesting Catchment (CPS 636) facility. Divert collected water from roof with guttering and downspout through a 4" diameter PVC Sch-40 pipe,

Scenario Feature Measure: Collection Tank- Each

Scenario Unit: Gallon

Scenario Typical Size: 1550

Total Scenario Cost: \$4,826.04

Scenario Cost/Unit: \$3.11

Cost Details

Component Name	Id	Description	Unit	Cost	Qty	Total
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Equipment Installation

Concrete, CIP, slab on grade, reinforced	37	Steel reinforced concrete formed and cast-in-place as a slab on grade by chute placement. Typical strength is 3000 to 4000 psi. Includes materials, labor and equipment to transport, place and finish.	Cubic Yard	\$290.09	10.1	\$2,929.92
Dozer, 80 HP	929	Track mounted Dozer with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	\$65.86	2	\$131.71

Labor

Equipment Operators, Heavy	233	Includes: Cranes, Hydraulic Excavators >=50 HP, Dozers, Paving Machines, Rock Trenchers, Trenchers >=12", Dump Trucks, Ag Equipment >=150 HP, Scrapers, Water Wagons.	Hour	\$29.32	2	\$58.65
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Materials

Aggregate, Gravel, Ungraded, Quarry Run	1099	Includes materials, equipment and labor	Cubic Yard	\$21.55	0.8	\$17.24
Tank, Poly Enclosed Storage, >1,000	1075	Water storage tanks. Includes materials and shipping only.	Gallon	\$0.93	1550	\$1,433.75

Mobilization

Mobilization, medium equipment	1139	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$254.77	1	\$254.77
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Scenario: #2 - Surface Catchment

Scenario Description: Construct an apron, approximately 50 feet wide by 90 feet long, utilizing: a plastic or rubber membrane laid on a prepared ground surface; or an asphalt or concrete surface with curbing; to collect rain water. Divert collected water from the surface catchment by gravity through an 8" diameter, PVC SDR-35 pipe to an existing tank or plastic-lined earthen reservoir. Exclusion of animals is required, so conservation practice 382 - Fencing, may be needed to protect the catchment. Resource Concern: Livestock production limitation - Inadequate livestock water. Associated Practices: 382 - Fencing; 614 - Watering Facility; 436 - Irrigation Reservoir; and 521A - Pond Sealing or Lining, Flexible Membrane.

Before Situation: Inadequate water available to address resource concerns. Client hauls water to supply needs.

After Situation: Design and construct an impervious surface as the primary collection component, and a pipe to convey the water to create a reliable water supply for livestock.

Scenario Feature Measure: Surface Area of Catchment

Scenario Unit: Square Yard

Scenario Typical Size: 500

Total Scenario Cost: \$7,933.17

Scenario Cost/Unit: \$15.87

Cost Details

Component Name	Id	Description	Unit	Cost	Qty	Total
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Labor

Equipment Operators, Heavy	233	Includes: Cranes, Hydraulic Excavators >=50 HP, Dozers, Paving Machines, Rock Trenchers, Trenchers >=12", Dump Trucks, Ag Equipment >=150 HP, Scrapers, Water Wagons.	Hour	\$29.32	12	\$351.87
General Labor	231	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$19.74	72	\$1,420.94
Supervisor or Manager	234	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	\$38.60	24	\$926.33

Equipment Installation

Dozer, 80 HP	929	Track mounted Dozer with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	\$65.86	12	\$790.29
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Materials

Pipe, PVC, 8", SDR 35	994	Materials: - 8" - PVC - SDR 35 - ASTM D3034	Foot	\$8.07	140	\$1,130.44
Synthetic Liner, 40 mil	1387	Synthetic 40 mil HDPE, LLDPE, EPDM, etc membrane liner material. Includes materials and shipping only.	Square Yard	\$6.12	500	\$3,058.53

Mobilization

Mobilization, medium equipment	1139	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$254.77	1	\$254.77
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