Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Appalachian
State	North Carolina
Discipline Group	Agricultural Engineering
Practice Code/Name	614 - Watering Facility
Scenario ID	8
Scenario Name	Portable Trough
Scenario Description	Provide an adequate amount and quality of drinking water for livestock and address the associated resouce concerns such as excessive nutrient buildup, grazing management, poor plant diversity and quality and soil/water quality. This sencerio is for a pasture rotation or enhanced pature management and utilization by installing a small water troughs (100 gallon) which provide a water supply. Because the system does not flow continuously a float is needed to maintain the water level within the portable trough. Trough is moved from paddock to paddock as needed.
Before Practice Situation	The setting takes place where livestock have open access to existing natural water supplies and/or poor grazing mgt. results in: poor water quality from soil erosion and manure deposit, poor grazing distribution and plant health, over grazing, poor manure distribution, and poor animal health.
After Practice Situation	Improved: water/soil quality, grazing management, plant diversity and quality, manure distribution, water quality, and animal health. Portable heavy duty polyethylene troughs (plastic or PE has to meet 20 year life) as part of an intensive rotational grazing management system. The trough is connected to a water supply system via quick coupler. Tanks are secured to wooden post and have automatic waters and are in use during the growing season.
Scenario Feature Measure	Number of Portable Troughs installed
Scenario Unit	Each
Scenario Typical Size	1

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$104.98	$104.98
Equipment/Installation	$26.31	$26.31
Labor	$18.67	$18.67
Mobilization	$0.00	$0.00
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$149.96	$149.96

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	1050	Post, Wood, CCA Treated, 4-5" X 7'	Wood Post, Line 4-5" X 7', CCA Treated	Each	$11.30	2	$22.60
Materials	290	Tank, Polyethylene, 100 gallon	Portable heavy duty rubber stock tank	Each	$82.38	1	$82.38
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	$26.31	1	$26.31
Labor	231	General Labor	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	$18.67	1	$18.67

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Region	Appalachian
State	North Carolina
Discipline Group	Agricultural Engineering
Practice Code/Name	614 - Watering Facility
Scenario ID	4
Scenario Name	concrete or steel reservoir, 500 to 1000 gallons
Scenario Description	A 500 gallon concrete tank watering trough constructed of approved materials, installed to provide water for livestock. All watering facilities will be constructed from approved durable materials that have a life expectancy that meets or exceeds the planned useful life of the installation. This watering facility will address the resource concerns of inadequate supply of water for livestock and or wildlife, habitat degradation, water quality, and undesirable plant productivity and health.
Before Practice Situation	Livestock have access to streams, ponds and/or lakes causing shoreline and/or streambank erosion and delivering non-point source pollutants directly to the receiving water. This access degrades water quality.
After Practice Situation	A concrete tank or steel with bottom liner watering trough is installed to provide water for livestock on a 8' x 8' concrete foundation. Geotextile and gravel are installed around the concrete pad to protect access from livestock hooves that could cause erosion. All needed pipelines are installed using Livestock Pipeline (516). Any needed vegetation of disturbed areas will use Critical Area Planting (342). All collectors or catchments for collecting precipitation will be addressed by using Water Harvesting Catchment (636). Any needed water source installation will use Water Well (642), Pumping Plant (533), Spring Development (574), or Livestock Pipeline (516) as appropriate. Areas around watering facilities where animal concentrations or overflow from the watering facility will cause resource concerns will be protected by using Heavy Use Area Protection (561) as appropriate.
Scenario Feature Measure	Each watering facility
Scenario Unit	Each
Scenario Typical Size	1

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$1,255.52	$1,255.52
Equipment/Installation	$540.39	$540.39
Labor	$72.77	$72.77
Mobilization	$92.60	$92.60
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$1,961.28	$1,961.28

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	46	Aggregate, Gravel, Graded	Gravel, includes materials, equipment and labor to transport and place. Includes washed and unwashed gravel.	Cubic yard	$24.01	2	$48.02
Materials	1049	Tank, Concrete, 500 gallon	Materials and delivery	Each	$1,207.50	1	$1,207.50
Equipment/Installation	926	Backhoe, 80 HP	Wheel mounted backhoe excavator with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	$45.37	0.1	$4.54
Equipment/Installation	38	Concrete, CIP, formed reinforced	Steel reinforced concrete formed and cast-in-placed in formed structures such as walls or suspended slabs by chute placement. Typical strength is 3000 to 4000 psi. Includes materials, labor and equipment to transport, place and finish.	Cubic yard	$329.10	1.5	$493.65
Equipment/Installation	42	Geotextile, woven	Woven Geotextile Fabric. Includes materials, equipment and labor	Square Yard	$2.11	20	$42.20
Labor	231	General Labor	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	$18.67	2	$37.34
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$35.43	1	$35.43
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	$92.60	1	$92.60

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Practice and Scenario Description:

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Region	Appalachian
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Discipline Group	Agricultural Engineering
Practice Code/Name	614 - Watering Facility
Scenario ID	3
Scenario Name	4-hole freeze-proof watering trough
Scenario Description	A permanent, 4-hole freeze-proof watering tank constructed of approved materials, installed to provide water for livestock. All watering facilities will be constructed from approved durable materials that have a life expectancy that meets or exceeds the planned useful life of the installation. This watering facility will address the resource concerns of inadequate supply of water for livestock and or wildlife, habitat degradation, water quality, and undesirable plant productivity and health.
Before Practice Situation	Livestock have access to streams, ponds and/or lakes causing shoreline and/or streambank erosion and delivering non-point source pollutants directly to the receiving water. This access degrades water quality.
After Practice Situation	A 4-hole freeze-proof watering tank is installed to provide water for livestock on a 8' x 8' concrete foundation. Geotextile and gravel are installed around the concrete pad to stabilize pad and protect access from livestock hooves that could cause erosion. All needed pipelines are installed using Livestock Pipeline (516). Any needed vegetation of disturbed areas will use Critical Area Planting (342). All collectors or catchments for collecting precipitation will be addressed by using Water Harvesting Catchment (636). Any needed water source installation will use Water Well (642), Pumping Plant (533), Spring Development (574), or Livestock Pipeline (516) as appropriate. Areas around watering facilities where animal concentrations or overflow from the watering facility will cause resource concerns will be protected by using Heavy Use Area Protection (561) as appropriate.
Scenario Feature Measure	Each watering facility
Scenario Unit	Each
Scenario Typical Size	1

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$1,151.12	$1,151.12
Equipment/Installation	$745.28	$745.28
Labor	$145.54	$145.54
Mobilization	$92.60	$92.60
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$2,134.54	$2,134.54

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost
Materials	46	Aggregate, Gravel, Graded	Gravel, includes materials, equipment and labor to transport and place. Includes washed and unwashed gravel.	Cubic yard	$24.01	12	$288.12
Materials	281	Tank, Freeze Proof, 4 hole	Tank, Freeze Proof with 4 drinking holes	Each	$863.00	1	$863.00
Equipment/Installation	926	Backhoe, 80 HP	Wheel mounted backhoe excavator with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	$45.37	1.5	$68.06
Equipment/Installation	38	Concrete, CIP, formed reinforced	Steel reinforced concrete formed and cast-in-placed in formed structures such as walls or suspended slabs by chute placement. Typical strength is 3000 to 4000 psi. Includes materials, labor and equipment to transport, place and finish.	Cubic yard	$329.10	1.5	$493.65
Equipment/Installation	42	Geotextile, woven	Woven Geotextile Fabric. Includes materials, equipment and labor	Square Yard	$2.11	87	$183.57
Labor	231	General Labor	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	$18.67	4	$74.68
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$35.43	2	$70.86
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	$92.60	1	$92.60