## Scenario Worksheet

### Practice and Scenario Description:

| Information Type | Data |
|---|---|
| Region | Corn Belt |
| State | Ohio |
| Discipline Group | Environmental Engineering |
| Practice Code/Name | 309 - Agrichemical Handling Facility |
| Scenario ID | 4 |
| Scenario Name | Liquid Agrichemical Storage, Concrete Walls & Floor |
| Scenario Description | This practice scenario is an agrichemical handling facility for storage of liquid agrichemicals along with a mixing and loading pad. This practice addresses water quality degradation and due to mis-handling, storing, and mixing of agrichemicals where nutrients and/or chemicals are running off into surface waters or leaching into ground water. Associated practices: Heavy Use Area Protection (561), Diversion (362), Access Road (560), Pipeline (516), Pumping Plant for Water Control (533), Nutrient Management (590), Pest Management (595), Pond Sealing or Lining Flexible Membrane (521A), Roofs and Covers (367) |
| Before Practice Situation | Agrichemicals are improperly stored on the ground or next to a well. Operator mixes the agrichemicals and fills the sprayer tank next to a hydrant. Spills or overflows of agrichemicals contaminate the soil, runoff to surface waters and leaching to ground water. |
| After Practice Situation | An agrichemical storage and handling facility is constructed with a concrete floor and 1' concrete perimeter walls. The average size of the agrichemical handling facility for storage is 35' x 40'. The concrete is sealed and sloped to a collection sump. This practice will contain agrichemicals and prevent contamination of surface and ground water resources. |
| Scenario Feature Measure | Square Feet of storage area |
| Scenario Unit | Square Foot |
| Scenario Typical Size | 1400 |

### Cost Summary:

| Cost Category | Scenario Cost | Scenario Cost/Unit |
|---|---|---|
| Materials | $1,867.40 | $1.33 |
| Equipment/Installation | $8,730.57 | $6.24 |
| Labor | $160.74 | $0.11 |
| Mobilization | $454.07 | $0.32 |
| Acquisition of Technical Knowledge | $0.00 | $0.00 |
| Foregone Income | $0.00 | $0.00 |
| Total | $11,212.78 | $8.01 |

### Cost Details:

| Cost Category | Component ID | Component Name | Component Description | Unit | Price ($/unit) | Quantity | Cost |
|---|---|---|---|---|---|---|---|
| Materials | 1497 | Painting, concrete surface, impermeable | Painting of concrete surfaces with an impermeable coating. Includes materials and application. | Square Foot | $0.93 | 1400 | $1,302.00 |
| Materials | 45 | Aggregate, Sand, Graded, Washed | Sand, typical ASTM C33 gradation, includes materials, equipment and labor to transport and place | Cubic yard | $25.70 | 22 | $565.40 |
| Equipment/Installation | 37 | Concrete, CIP, slab on grade, reinforced | Steel reinforced concrete formed and cast-in-placed 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 | $255.77 | 17 | $4,348.09 |
| 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 | $406.16 | 10 | $4,061.60 |
| Equipment/Installation | 929 | Dozer, 80 HP | Track mounted Dozer with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included. | Hour | $53.48 | 6 | $320.88 |
| Labor | 233 | Equipment Operators, Heavy | Includes: Cranes, Hydraulic Excavators >=50 HP, Dozers, Paving Machines, Rock Trenchers, Trenchers >=12", Dump Trucks, Ag Equipment >=150 HP, Scrapers, Water Wagons. | Hour | $26.79 | 6 | $160.74 |
| Mobilization | 1139 | Mobilization, medium equipment | Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds. | Each | $203.05 | 1 | $203.05 |
| Mobilization | 1138 | Mobilization, small equipment | Equipment <70 HP but can't be transported by a pick-up truck or with typical weights between 3,500 to 14,000 pounds. | Each | $138.58 | 1 | $138.58 |
| Mobilization | 1137 | Mobilization, very small equipment | Equipment that is small enough to be transported by a pick-up truck with typical weights less than 3,500 pounds. Can be multiple pieces of equipment if all hauled simultaneously. | Each | $56.22 | 2 | $112.44 |

## Scenario Worksheet

### Practice and Scenario Description:

| Information Type | Data |
|---|---|
| Region | Corn Belt |
| State | Ohio |
| Discipline Group | Environmental Engineering |
| Practice Code/Name | 309 - Agrichemical Handling Facility |
| Scenario ID | 2 |
| Scenario Name | Liquid Agrichemical Storage, Treated Timber Walls |
| Scenario Description | This practice scenario is an agrichemical handling facility for storage of liquid agrichemicals. Due to topography, limited site space and/or geological conditions a fabricated structure is needed. This practice addresses water quality degradation and due to mis-handling, storing, and mixing of agrichemicals where nutrients and/or chemicals are running off into surface waters or leaching into ground water.<br>Associated practices: Heavy Use Area Protection (561), Diversion (362), Access Road (560), Pipeline (516), Pumping Plant for Water Control (533), Nutrient Management (590), Pest Management (595), Pond Sealing or Lining Flexible Membrane (521A), Roofs and Covers (367). |
| Before Practice Situation | Agrichemicals are improperly stored on the ground or next to a well. Operator mixes the agrichemicals and fills the sprayer tank next to a hydrant. Spills or overflows of agrichemicals contaminate the soil, runoff to surface waters and leaching to ground water. |
| After Practice Situation | An agrichemical handling facility is constructed for storage of liquid agrichemicals. The average size of the agrichemical handling facility for proper storage of liquid agrichemicals is in fabricated containment that is 24' x 36' x3' with flexible membrane lined walls. The walls are made of treated timber. This practice will contain agrichemicals and prevent contamination of surface and ground water resources. |
| Scenario Feature Measure | Square Feet of storage area |
| Scenario Unit | Square Foot |
| Scenario Typical Size | 864 |

### Cost Summary:

| Cost Category | Scenario Cost | Scenario Cost/Unit |
|---|---|---|
| Materials | $2,437.10 | $2.82 |
| Equipment/Installation | $1,457.52 | $1.69 |
| Labor | $1,702.20 | $1.97 |
| Mobilization | $341.63 | $0.40 |
| Acquisition of Technical Knowledge | $0.00 | $0.00 |
| Foregone Income | $0.00 | $0.00 |
| Total | $5,938.45 | $6.87 |

### Cost Details:

| Cost Category | Component ID | Component Name | Component Description | Unit | Price ($/unit) | Quantity | Cost |
|---|---|---|---|---|---|---|---|
| Materials | 1044 | Dimension Lumber, Treated | Treated dimension lumber with nominal thickness equal or less than 2". Includes lumber and fasteners | Board Foot | $0.71 | 1088 | $772.48 |
| Materials | 46 | Aggregate, Gravel, Graded | Gravel, includes materials, equipment and labor to transport and place. Includes washed and unwashed gravel. | Cubic yard | $26.70 | 16 | $427.20 |
| Materials | 45 | Aggregate, Sand, Graded, Washed | Sand, typical ASTM C33 gradation, includes materials, equipment and labor to transport and place | Cubic yard | $25.70 | 11 | $282.70 |
| Equipment/Installation | 933 | Skidsteer, 80 HP | Skidsteer loader with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included. | Hour | $33.99 | 24 | $815.76 |
| Equipment/Installation | 929 | Dozer, 80 HP | Track mounted Dozer with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included. | Hour | $53.48 | 12 | $641.76 |
| Labor | 232 | Equipment Operators, Light | Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers | Hour | $22.67 | 24 | $544.08 |
| Labor | 233 | Equipment Operators, Heavy | Includes: Cranes, Hydraulic Excavators >=50 HP, Dozers, Paving Machines, Rock Trenchers, Trenchers >=12", Dump Trucks, Ag Equipment >=150 HP, Scrapers, Water Wagons. | Hour | $26.79 | 12 | $321.48 |
| 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 | $19.92 | 42 | $836.64 |
| Mobilization | 1139 | Mobilization, medium equipment | Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds. | Each | $203.05 | 1 | $203.05 |
| Mobilization | 1138 | Mobilization, small equipment | Equipment <70 HP but can't be transported by a pick-up truck or with typical weights between 3,500 to 14,000 pounds. | Each | $138.58 | 1 | $138.58 |
| Materials | 1609 | Lumber, planks, posts and timbers, treated | Treated dimension lumber with nominal thickness greater than 2". Includes lumber and fasteners. Does not include labor. | Board Foot | $1.17 | 816 | $954.72 |

## Scenario Worksheet

### Practice and Scenario Description:

| Information Type | Data |
|---|---|
| Region | Corn Belt |
| State | Ohio |
| Discipline Group | Environmental Engineering |
| Practice Code/Name | 309 - Agrichemical Handling Facility |
| Scenario ID | 3 |
| Scenario Name | Concrete Agrichemical Handling Pad for mixing and loading |
| Scenario Description | This practice scenario is an agrichemical handling facility for mixing and loading operations. This practice addresses water quality degradation and due to mis-handling, and mixing of agrichemicals where nutrients and/or chemicals are running off into surface waters or leaching into ground water. Associated practices: Heavy Use Area Protection (561), Diversion (362), Access Road (560), Pipeline (516), Pumping Plant for Water Control (533), Nutrient Management (590), Pest Management (595), Roofs and Covers (367), Pond Sealing or Lining, Flexible Membrane (521a). |
| Before Practice Situation | Agrichemicals are improperly stored on the ground or next to a well. Operator mixes the agrichemicals and fills the sprayer tank next to a hydrant with no storage for spills. Spills or overflows of agrichemicals contaminate the soil, runoff to surface waters and leaching to ground water. |
| After Practice Situation | This scenario is an agrichemical handling facility pad for mixing and loading operations. The average size of the agrichemical handling pad for mixing and loading is 16' x 40' x 6" with an application equipment length of 36 ft. The handling pad for mixing and loading operations is sized to contain the length of the agrichemical spray tank and its volume. The concrete is sealed and sloped to a collection sump, containment of the pad is surrounded by sloped and ramped reinforced concrete. This practice will contain agrichemicals and prevent contamination of surface and ground water resources. |
| Scenario Feature Measure | Square Feet of handling area |
| Scenario Unit | Square Foot |
| Scenario Typical Size | 640 |

### Cost Summary:

| Cost Category | Scenario Cost | Scenario Cost/Unit |
|---|---|---|
| Materials | $852.20 | $1.33 |
| Equipment/Installation | $3,283.16 | $5.13 |
| Labor | $329.72 | $0.52 |
| Mobilization | $397.85 | $0.62 |
| Acquisition of Technical Knowledge | $0.00 | $0.00 |
| Foregone Income | $0.00 | $0.00 |
| Total | $4,862.93 | $7.60 |

### Cost Details:

| Cost Category | Component ID | Component Name | Component Description | Unit | Price ($/unit) | Quantity | Cost |
|---|---|---|---|---|---|---|---|
| Materials | 1497 | Painting, concrete surface, impermeable | Painting of concrete surfaces with an impermeable coating. Includes materials and application. | Square Foot | $0.93 | 640 | $595.20 |
| Materials | 45 | Aggregate, Sand, Graded, Washed | Sand, typical ASTM C33 gradation, includes materials, equipment and labor to transport and place | Cubic yard | $25.70 | 10 | $257.00 |
| Equipment/Installation | 37 | Concrete, CIP, slab on grade, reinforced | Steel reinforced concrete formed and cast-in-placed 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 | $255.77 | 12 | $3,069.24 |
| Equipment/Installation | 929 | Dozer, 80 HP | Track mounted Dozer with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included. | Hour | $53.48 | 4 | $213.92 |
| Labor | 232 | Equipment Operators, Light | Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers | Hour | $22.67 | 4 | $90.68 |
| 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 | $19.92 | 12 | $239.04 |
| Mobilization | 1139 | Mobilization, medium equipment | Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds. | Each | $203.05 | 1 | $203.05 |
| Mobilization | 1138 | Mobilization, small equipment | Equipment <70 HP but can't be transported by a pick-up truck or with typical weights between 3,500 to 14,000 pounds. | Each | $138.58 | 1 | $138.58 |
| Mobilization | 1137 | Mobilization, very small equipment | Equipment that is small enough to be transported by a pick-up truck with typical weights less than 3,500 pounds. Can be multiple pieces of equipment if all hauled simultaneously. | Each | $56.22 | 1 | $56.22 |

## Scenario Worksheet

### Practice and Scenario Description:

| Information Type | Data |
|---|---|
| Region | Corn Belt |
| State | Ohio |
| Discipline Group | Forestry |
| Practice Code/Name | 311 - Alley Cropping |
| Scenario ID | 2 |
| Scenario Name | Alley Cropping, 3 row bareroot planting stock |
| Scenario Description | Cropland is planted with trees in 3-row sets with 40 foot alleyways in between. The outside rows of trees are conifers and the center row a mast-producing high-value hardwood timber species. Between row spacing is 16 feet and between tree spacing is 10 feet. The resource concerns are Plant Condition - inadequate structure and composition; Soil Erosion (wind); Excess/ Insufficient Water (inefficient moisture management); Inadequate Habitat for Fish and Wildlife (food, cover/shelter, continuity). Site preparation is not included and must be implemented through associated practice 490 Tree/Shrub Site Preparation. Additional associated practices may include: 315 Herbaceous Weed Control, 660 Tree/Shrub Pruning, 484 Mulching |
| Before Practice Situation | The landscape has been cropped for many years. It is void of any perennial tree vegetation. Wind erosion is evident, insufficient water for crops occurs due to excessive winds, wildlife habitat score is very low due to the lackof any perennial vegetation. Site preparation needs may include deep ripping to eliminate any plow pan prior to tree planting. |
| After Practice Situation | Trees have been established to diversify the crop production, reduce erosion by wind and water and improve growing conditions for crops in alleyways. Typically the area planted is 10 acres. |
| Scenario Feature Measure | Area of Treatment |
| Scenario Unit | Acre |
| Scenario Typical Size | 10 |

### Cost Summary:

| Cost Category | Scenario Cost | Scenario Cost/Unit |
|---|---|---|
| Materials | $3,285.15 | $328.52 |
| Equipment/Installation | $161.19 | $16.12 |
| Labor | $1,291.72 | $129.17 |
| Mobilization | $360.13 | $36.01 |
| Acquisition of Technical Knowledge | $0.00 | $0.00 |
| Foregone Income | $1,945.30 | $194.53 |
| Total | $7,043.49 | $704.35 |

### Cost Details:

| Cost Category | Component ID | Component Name | Component Description | Unit | Price ($/unit) | Quantity | Cost |
|---|---|---|---|---|---|---|---|
| Materials | 1583 | Stakes, wood, 3/4" x 3/4" x 60" | 3/4" x 3/4" x 60" wood stakes to fasten items in place. Materials only. | Each | $1.44 | 605 | $871.20 |
| Materials | 1575 | Cable ties, plastic | Plastic cable ties (typ. 8-12") to assist in securing items. Materials only. | Each | $0.07 | 605 | $42.35 |
| Materials | 1571 | Tree shelter, solid tube type, 5" x 48" | 5" x 48" tree tube for protection from animal damage. Materials only. | Each | $1.93 | 605 | $1,167.65 |
| Materials | 1509 | Tree, hardwood, seedling or transplant, bare root, 6-18" | Bare root hardwood trees 6-18" tall. Materials only. | Each | $0.65 | 605 | $393.25 |
| Materials | 1519 | Tree, conifer, seedling, containerized, 10 cu. in. | Containerized conifer stock, 10 cubic inches (approx 6" plug), 1.7" x 6"). Materials only. | Each | $0.67 | 1210 | $810.70 |
| Equipment/Installation | 963 | Tractor, agricultural, 60 HP | Agricultural tractor with horsepower range of 50 to 90. Equipment and power unit costs. Labor not included. | Hour | $19.28 | 2.5 | $48.20 |
| Equipment/Installation | 939 | Truck, Pickup | Equipment and power unit costs. Labor not included. | Hour | $25.51 | 4 | $102.04 |
| Equipment/Installation | 1600 | Mechanical tree planter | Mechanical tree planter. Requires a pulling unit of either tractor or small dozer depending upon site conditions. Does not include labor. | Hour | $4.38 | 2.5 | $10.95 |
| 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 | $36.52 | 12 | $438.24 |
| Labor | 232 | Equipment Operators, Light | Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers | Hour | $22.67 | 2.5 | $56.68 |
| 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 | $19.92 | 40 | $796.80 |
| Mobilization | 1142 | Mobilization, General labor | Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc. | Hour | $19.90 | 2 | $39.80 |
| Mobilization | 1143 | Mobilization, Light Equipment Operator | Mobilization of light equipment operators: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers | Hour | $22.46 | 2 | $44.92 |
| Mobilization | 1145 | Mobilization, Supervisor or Manager | Mobilization of supervisors or management. Includes crew supervisors, foremen and farm/ranch managers, etc. | Hour | $36.18 | 2 | $72.36 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Mobilization | 1139 | Mobilization, medium equipment | Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds. | Each | $203.05 | 1 | $203.05 |
| Foregone Income | 1959 | FI, Corn Dryland | Dryland Corn is Primary Crop | Acre | $392.59 | 2.5 | $981.48 |
| Foregone Income | 1961 | FI, Soybeans Dryland | Dryland Soybeans is Primary Crop | Acre | $385.53 | 2.5 | $963.83 |

## Scenario Worksheet

### Practice and Scenario Description:

| Information Type | Data |
|---|---|
| Region | Corn Belt |
| State | Ohio |
| Discipline Group | Forestry |
| Practice Code/Name | 311 - Alley Cropping |
| Scenario ID | 1 |
| Scenario Name | Alley Cropping, single row conatiner planting stock |
| Scenario Description | The crop or grass land is planted with rows of trees to increase crop diversity. Final row width, and spacing of trees within the row, is based on farm equipment size, growth form of trees, light needs of annual crop or grass, and intent of the landowner. The resource concerns are plant condition - inadequate structure and composition. Site preparation is not included and must be implemented through associated practice 490 Tree/Shrub Site Preparation. Additional associated practices may include: 315 Herbaceous Weed Control, 660 Tree/Shrub Pruning, 484 Mulching |
| Before Practice Situation | The landscape has been cropped or in perennial grass for many years. It is void of any perennial tree vegetation. On cropland site preparation needs may need deep ripping to eliminate any plow pan and on grass land competing vegetation control is accomplished prior to tree planting. |
| After Practice Situation | Trees have been established to diversify the crop production of the field. Typically the area planted is 10 acres on approximately 12 x 40 foot spacing. |
| Scenario Feature Measure | planted seedling |
| Scenario Unit | Each |
| Scenario Typical Size | 900 |

### Cost Summary:

| Cost Category | Scenario Cost | Scenario Cost/Unit |
|---|---|---|
| Materials | $15,174.00 | $16.86 |
| Equipment/Installation | $4,913.44 | $5.46 |
| Labor | $6,129.60 | $6.81 |
| Mobilization | $674.29 | $0.75 |
| Acquisition of Technical Knowledge | $0.00 | $0.00 |
| Foregone Income | $972.65 | $1.08 |
| Total | $27,863.98 | $30.96 |

### Cost Details:

| Cost Category | Component ID | Component Name | Component Description | Unit | Price ($/unit) | Quantity | Cost |
|---|---|---|---|---|---|---|---|
| Materials | 1583 | Stakes, wood, 3/4" x 3/4" x 60" | 3/4" x 3/4" x 60" wood stakes to fasten items in place. Materials only. | Each | $1.44 | 900 | $1,296.00 |
| Materials | 1575 | Cable ties, plastic | Plastic cable ties (typ. 8-12") to assist in securing items. Materials only. | Each | $0.07 | 900 | $63.00 |
| Materials | 1571 | Tree shelter, solid tube type, 5" x 48" | 5" x 48" tree tube for protection from animal damage. Materials only. | Each | $1.93 | 900 | $1,737.00 |
| Materials | 1532 | Tree, hardwood, seedling or transplant, potted or B&B, 2-3 gal. | Potted or balled and burlapped hardwood tree, 2-3 gal. Materials only. | Each | $13.42 | 900 | $12,078.00 |
| Equipment/Installation | 962 | Tractor, agricultural, 120 HP | Agricultural tractor with horsepower range of 90 to 140. Equipment and power unit costs. Labor not included. | Hour | $47.06 | 90 | $4,235.40 |
| Equipment/Installation | 939 | Truck, Pickup | Equipment and power unit costs. Labor not included. | Hour | $25.51 | 4 | $102.04 |
| Equipment/Installation | 934 | Auger, Post driver attachment | Auger or post driver attachment to a tractor or skidsteer. Does not include power unit. Labor not included. | Hour | $7.20 | 80 | $576.00 |
| 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 | $36.52 | 20 | $730.40 |
| Labor | 232 | Equipment Operators, Light | Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers | Hour | $22.67 | 80 | $1,813.60 |
| 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 | $19.92 | 180 | $3,585.60 |
| Mobilization | 1142 | Mobilization, General labor | Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc. | Hour | $19.90 | 6 | $119.40 |
| Mobilization | 1143 | Mobilization, Light Equipment Operator | Mobilization of light equipment operators: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers | Hour | $22.46 | 6 | $134.76 |
| Mobilization | 1145 | Mobilization, Supervisor or Manager | Mobilization of supervisors or management. Includes crew supervisors, foremen and farm/ranch managers, etc. | Hour | $36.18 | 6 | $217.08 |
| Mobilization | 1139 | Mobilization, medium equipment | Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds. | Each | $203.05 | 1 | $203.05 |
| Foregone Income | 1959 | FI, Corn Dryland | Dryland Corn is Primary Crop | Acre | $392.59 | 1.25 | $490.74 |
| Foregone Income | 1961 | FI, Soybeans Dryland | Dryland Soybeans is Primary Crop | Acre | $385.53 | 1.25 | $481.91 |

## Scenario Worksheet

### Practice and Scenario Description:

| Information Type | Data |
|---|---|
| Region | Corn Belt |
| State | Ohio |
| Discipline Group | Environmental Engineering |
| Practice Code/Name | 313 - Waste Storage Facility |
| Scenario ID | 20 |
| Scenario Name | Composted Bedded Pack - Gravel Floor |
| Scenario Description | A composted bedded pack facility is constructed to store wastes as part of an agricultural waste management system. Payment includes materials and equipment necessary for construction of the floor and walls. If a roof is to be included in the installation refer to Practice Standard 367 - Roofs and Covers. This practice will address soil and water quality by reducing the pollution potential for surface water and groundwater quality degradation.<br><br>Potential Associated Practices: Fence (382), Nutrient Management (590), Waste Transfer (634), Heavy Use Area Protection (561), and Roofs and Covers (367). |
| Before Practice Situation | Operator presently has a confined animal feeding operation without a waste management system adequate to handle the waste stream leaving the animal production facilities. Manure and other agricultural waste by-products are not being utilized or controlled in an environmentally safe manner. The wastes are either accumulating at the source, or are being transported but not properly utilized or disposed of. This situation poses an environmentally threat of excessive nutrients, organics, and pathogens being transported into surface and groundwater resources. |
| After Practice Situation | Using a bedded pack provides an environmentally safe facility for storing manure and other agricultural waste by-products. This facility provides the landowner a means of storing waste until it can be utilized in a proper manner in accordance with a nutrient management plan.<br>Typical design: floor area 4,000 ft2 , (40' X 100'); 4' concrete wall height, 3' footing depth with a geotextile and 6" gravel layer over an earthen floor; 20' openings on each end of structure. |
| Scenario Feature Measure | Square Foot Floor Area |
| Scenario Unit | Square Foot |
| Scenario Typical Size | 4,000 |

### Cost Summary:

| Cost Category | Scenario Cost | Scenario Cost/Unit |
|---|---|---|
| Materials | $1,975.80 | $0.49 |
| Equipment/Installation | $18,873.68 | $4.72 |
| Labor | $0.00 | $0.00 |
| Mobilization | $924.64 | $0.23 |
| Acquisition of Technical Knowledge | $0.00 | $0.00 |
| Foregone Income | $0.00 | $0.00 |
| Total | $21,774.12 | $5.44 |

### 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 | $26.70 | 74 | $1,975.80 |
| Equipment/Installation | 1223 | Excavation, common earth, large equipment, 150 ft | Bulk excavation of common earth including sand and gravel with dozer >100 HP with average push distance of 150 feet. Includes equipment and labor. | Cubic Yard | $3.26 | 74 | $241.24 |
| Equipment/Installation | 1199 | Stripping and stockpiling, topsoil | Stripping and stockpiling of topsoil adjacent to stripping area. Includes equipment and labor. | Cubic Yard | $0.77 | 102 | $78.54 |
| Equipment/Installation | 50 | Earthfill, Manually Compacted | Earthfill, manually compacted, includes equipment and labor | Cubic yard | $5.23 | 22 | $115.06 |
| Equipment/Installation | 49 | Earthfill, Roller Compacted | Earthfill, roller or machine compacted, includes equipment and labor | Cubic yard | $3.92 | 74 | $290.08 |
| 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 | $406.16 | 42 | $17,058.72 |
| Equipment/Installation | 42 | Geotextile, woven | Woven Geotextile Fabric. Includes materials, equipment and labor | Square Yard | $2.35 | 444 | $1,043.40 |
| Equipment/Installation | 48 | Excavation, Common Earth, side cast, small equipment | Bulk excavation and side casting of common earth with hydraulic excavator with less than 1 CY capacity. Includes equipment and labor. | Cubic yard | $2.12 | 22 | $46.64 |
| Mobilization | 1137 | Mobilization, very small equipment | Equipment that is small enough to be transported by a pick-up truck with typical weights less than 3,500 pounds. Can be multiple pieces of equipment if all hauled simultaneously. | Each | $56.22 | 2 | $112.44 |
| Mobilization | 1139 | Mobilization, medium equipment | Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds. | Each | $203.05 | 4 | $812.20 |

## Scenario Worksheet

### Practice and Scenario Description:

| Information Type | Data |
|---|---|
| Region | Corn Belt |
| State | Ohio |
| Discipline Group | Environmental Engineering |
| Practice Code/Name | 313 - Waste Storage Facility |
| Scenario ID | 23 |
| Scenario Name | Composted Bedded Pack - Non-Reinforced Concrete Floor |
| Scenario Description | A composted bedded pack facility is constructed to store wastes such as manure, wastewater, and contaminated runoff as part of an agricultural waste management system. This scenario is intended for situations where consistency of manure or geological conditions prohibit the use of earthen floors. Payment includes materials and equipment necessary for construction of the floor and walls. The walls may be constructed of concrete or wood as allowed by state policies and regulations. If a roof is to be included in the installation refer to Practice Standard 367 - Roofs and Covers. This practice will address soil and water quality by reducing the pollution potential for surface water and groundwater quality degradation.<br><br>Potential Associated Practices: Fence (382), Nutrient Management (590), Waste Transfer (634), Heavy Use Area Protection (561) and Roofs and Covers (367). |
| Before Practice Situation | Operator presently has a confined animal feeding operation without a waste management system adequate to handle the waste stream leaving the animal production facilities. Manure and other agricultural waste by-products are not being utilized or controlled in an environmentally safe manner. The wastes are either accumulating at the source, or are being transported but not properly utilized or disposed of. This situation poses an environmentally threat of excessive nutrients, organics, and pathogens being transported into surface and groundwater resources. |
| After Practice Situation | Using a bedded pack provides an environmentally safe facility for storing manure and other agricultural waste by-products. This facility provides the landowner a means of storing waste until it can be utilized in a proper manner in accordance with a nutrient management plan.<br>Typical design: floor area 4,000 ft2, (40' X 100'); 4' concrete wall height, 3' footing depth with a 5" non reinforced concrete floor; 20' openings on each end of structure. |
| Scenario Feature Measure | Square Foot Floor Area |
| Scenario Unit | Square Foot |
| Scenario Typical Size | 4,000 |

### Cost Summary:

| Cost Category | Scenario Cost | Scenario Cost/Unit |
|---|---|---|
| Materials | $950.90 | $0.24 |
| Equipment/Installation | $25,465.00 | $6.37 |
| Labor | $0.00 | $0.00 |
| Mobilization | $924.64 | $0.23 |
| Acquisition of Technical Knowledge | $0.00 | $0.00 |
| Foregone Income | $0.00 | $0.00 |
| Total | $27,340.54 | $6.84 |

### Cost Details:

| Cost Category | Component ID | Component Name | Component Description | Unit | Price ($/unit) | Quantity | Cost |
|---|---|---|---|---|---|---|---|
| Materials | 45 | Aggregate, Sand, Graded, Washed | Sand, typical ASTM C33 gradation, includes materials, equipment and labor to transport and place | Cubic yard | $25.70 | 37 | $950.90 |
| Equipment/Installation | 1223 | Excavation, common earth, large equipment, 150 ft | Bulk excavation of common earth including sand and gravel with dozer >100 HP with average push distance of 150 feet. Includes equipment and labor. | Cubic Yard | $3.26 | 74 | $241.24 |
| Equipment/Installation | 1199 | Stripping and stockpiling, topsoil | Stripping and stockpiling of topsoil adjacent to stripping area. Includes equipment and labor. | Cubic Yard | $0.77 | 102 | $78.54 |
| Equipment/Installation | 36 | Concrete, CIP, formless, non reinforced | Non reinforced concrete cast-in-placed without forms by chute placement. Typical strength is 3000 to 4000 psi. Includes materials, labor and equipment to transport, place and finish. | Cubic yard | $125.48 | 62 | $7,779.76 |
| Equipment/Installation | 50 | Earthfill, Manually Compacted | Earthfill, manually compacted, includes equipment and labor | Cubic yard | $5.23 | 22 | $115.06 |
| Equipment/Installation | 49 | Earthfill, Roller Compacted | Earthfill, roller or machine compacted, includes equipment and labor | Cubic yard | $3.92 | 37 | $145.04 |
| 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 | $406.16 | 42 | $17,058.72 |
| Equipment/Installation | 48 | Excavation, Common Earth, side cast, small equipment | Bulk excavation and side casting of common earth with hydraulic excavator with less than 1 CY capacity. Includes equipment and labor. | Cubic yard | $2.12 | 22 | $46.64 |
| Mobilization | 1137 | Mobilization, very small equipment | Equipment that is small enough to be transported by a pick-up truck with typical weights less than 3,500 pounds. Can be multiple pieces of equipment if all hauled simultaneously. | Each | $56.22 | 2 | $112.44 |
| Mobilization | 1139 | Mobilization, medium equipment | Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds. | Each | $203.05 | 4 | $812.20 |

## Scenario Worksheet

### Practice and Scenario Description:

| Information Type | Data |
|---|---|
| Region | Corn Belt |
| State | Ohio |
| Discipline Group | Environmental Engineering |
| Practice Code/Name | 313 - Waste Storage Facility |
| Scenario ID | 21 |
| Scenario Name | Composted Bedded Pack - 6" Reinforced Concrete Floor |
| Scenario Description | A composted bedded pack facility is constructed to store wastes such as manure, wastewater, and contaminated runoff as part of an agricultural waste management system. This scenario is intended for situations where consistency of manure or geological conditions prohibit the use of earthen floors. Payment includes materials and equipment necessary for construction of the floor and walls. The walls may be constructed of concrete or wood as allowed by state policies and regulations. If a roof is to be included in the installation refer to Practice Standard 367 - Roofs and Covers. This practice will address soil and water quality by reducing the pollution potential for surface water and groundwater quality degradation.<br><br>Potential Associated Practices: Fence (382), Nutrient Management (590), Waste Transfer (634), Heavy Use Area Protection (561) and Roofs and Covers (367). |
| Before Practice Situation | Operator presently has a confined animal feeding operation without a waste management system adequate to handle the waste stream leaving the animal production facilities. Manure and other agricultural waste by-products are not being utilized or controlled in an environmentally safe manner. The wastes are either accumulating at the source, or are being transported but not properly utilized or disposed of. This situation poses an environmentally threat of excessive nutrients, organics, and pathogens being transported into surface and groundwater resources. |
| After Practice Situation | Using a bedded pack provides an environmentally safe facility for storing manure and other agricultural waste by-products. This facility provides the landowner a means of storing waste until it can be utilized in a proper manner in accordance with a nutrient management plan.<br>Typical design: floor area 4,000 ft2, (40' X 100'); 4' concrete wall height, 3' footing depth with a 6" reinforced concrete floor; 20' openings on each end of structure. |
| Scenario Feature Measure | Square Foot Floor Area |
| Scenario Unit | Square Foot |
| Scenario Typical Size | 4,000 |

### Cost Summary:

| Cost Category | Scenario Cost | Scenario Cost/Unit |
|---|---|---|
| Materials | $950.90 | $0.24 |
| Equipment/Installation | $36,612.22 | $9.15 |
| Labor | $0.00 | $0.00 |
| Mobilization | $924.64 | $0.23 |
| Acquisition of Technical Knowledge | $0.00 | $0.00 |
| Foregone Income | $0.00 | $0.00 |
| Total | $38,487.76 | $9.62 |

### Cost Details:

| Cost Category | Component ID | Component Name | Component Description | Unit | Price ($/unit) | Quantity | Cost |
|---|---|---|---|---|---|---|---|
| Materials | 45 | Aggregate, Sand, Graded, Washed | Sand, typical ASTM C33 gradation, includes materials, equipment and labor to transport and place | Cubic yard | $25.70 | 37 | $950.90 |
| Equipment/Installation | 1223 | Excavation, common earth, large equipment, 150 ft | Bulk excavation of common earth including sand and gravel with dozer >100 HP with average push distance of 150 feet. Includes equipment and labor. | Cubic Yard | $3.26 | 74 | $241.24 |
| Equipment/Installation | 1199 | Stripping and stockpiling, topsoil | Stripping and stockpiling of topsoil adjacent to stripping area. Includes equipment and labor. | Cubic Yard | $0.77 | 102 | $78.54 |
| Equipment/Installation | 50 | Earthfill, Manually Compacted | Earthfill, manually compacted, includes equipment and labor | Cubic yard | $5.23 | 22 | $115.06 |
| Equipment/Installation | 37 | Concrete, CIP, slab on grade, reinforced | Steel reinforced concrete formed and cast-in-placed 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 | $255.77 | 74 | $18,926.98 |
| Equipment/Installation | 49 | Earthfill, Roller Compacted | Earthfill, roller or machine compacted, includes equipment and labor | Cubic yard | $3.92 | 37 | $145.04 |
| 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 | $406.16 | 42 | $17,058.72 |
| Equipment/Installation | 48 | Excavation, Common Earth, side cast, small equipment | Bulk excavation and side casting of common earth with hydraulic excavator with less than 1 CY capacity. Includes equipment and labor. | Cubic yard | $2.12 | 22 | $46.64 |
| Mobilization | 1137 | Mobilization, very small equipment | Equipment that is small enough to be transported by a pick-up truck with typical weights less than 3,500 pounds. Can be multiple pieces of equipment if all hauled simultaneously. | Each | $56.22 | 2 | $112.44 |
| Mobilization | 1139 | Mobilization, medium equipment | Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds. | Each | $203.05 | 4 | $812.20 |

## Scenario Worksheet

### Practice and Scenario Description:

| Information Type | Data |
|---|---|
| Region | Corn Belt |
| State | Ohio |
| Discipline Group | Environmental Engineering |
| Practice Code/Name | 313 - Waste Storage Facility |
| Scenario ID | 19 |
| Scenario Name | Concrete Tank Open Top - ≥110,000 Cu Ft Storage |
| Scenario Description | This scenario consists of installing an open top concrete tank that has a design storage volume of 110,000 Cu Ft or greater. Payment includes materials and equipment necessary for construction of the concrete tank. If a roof is to be included in the installation refer to Practice Standard 367 - Roofs and Covers. Vehicular and equipment access is addressed in Heavy Use Area Protection (561). Tank can also be installed under an animal facility using slats. The design volume does not include freeboard. This practice will address soil and water quality by reducing the pollution potential to soil, surface water and ground water. Payment includes all materials, equipment and labor to install a concrete tank and gravel for drainfill around the tank.<br><br>Potential Associated Practices: Pond Sealing or Lining, Bentonite Sealant (521C), Pond Sealing or Lining, Compacted Clay Treatment (521D), Pond Sealing or Lining, Flexible Membrane (521A), Pond Sealing or Lining, Soil Dispersant (521B), Fence (382), Critical Area Planting (342), Nutrient Management (590), Access Road (560), Waste Transfer (634), Heavy Use Area Protection (561), Roof and Covers (367), Solid/Liquid Waste Separation Facility (632), Diversion (362), Pipeline (516), Subsurface Drain (606), and Underground Outlet (620). |
| Before Practice Situation | Manure and other agricultural by-products are not being utilized or controlled in an environmentally safe manner. The wastes are either accumulating at the source, or other location, or are being transported but not properly utilized or disposed of. This situation poses an environmentally threat of excessive nutrients, organics, and pathogens being transported into surface and groundwaters, in addition to the use of excessive amounts of fertilizers. |
| After Practice Situation | Manure and other agricultural by-products are being controlled, by the collection at the source, and stored temporarily, at an environmentally suitable location, until such time that they are disposed of or utilized in a proper manner, typically in accordance with a nutrient management plan.<br>Tank typically 8' deep with a bottom area of 21,000 SF and a design storage volume of 147,000 CF plus 1 ft freeboard. Outside dimensions 22,200 sq ft (includes 3' footing and 8" wall).Sizing based on manure, other wastes, rainfall, lot runoff, etc. as appropriate. Sizing based on manure, other wastes, rainfall, lot runoff, etc. as appropriate. Volume does not include 1 ft of freeboard. |
| Scenario Feature Measure | Design Storage Volume |
| Scenario Unit | Cubic Foot |
| Scenario Typical Size | 147,000 |

### Cost Summary:

| Cost Category | Scenario Cost | Scenario Cost/Unit |
|---|---|---|
| Materials | $16,519.40 | $0.11 |
| Equipment/Installation | $164,449.26 | $1.12 |
| Labor | $0.00 | $0.00 |
| Mobilization | $2,342.70 | $0.02 |
| Acquisition of Technical Knowledge | $0.00 | $0.00 |
| Foregone Income | $0.00 | $0.00 |
| Total | $183,311.36 | $1.25 |

### Cost Details:

| Cost Category | Component ID | Component Name | Component Description | Unit | Price ($/unit) | Quantity | Cost |
|---|---|---|---|---|---|---|---|
| Materials | 1614 | Waterstop, PVC, ribbed, 3/16" x 6" | Waterstop, PVC, ribbed, 3/16" thick by 6"wide. Includes materials, equipment and labor. | Foot | $4.82 | 580 | $2,795.60 |
| Materials | 46 | Aggregate, Gravel, Graded | Gravel, includes materials, equipment and labor to transport and place. Includes washed and unwashed gravel. | Cubic yard | $26.70 | 514 | $13,723.80 |
| 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 | $406.16 | 116 | $47,114.56 |
| Equipment/Installation | 37 | Concrete, CIP, slab on grade, reinforced | Steel reinforced concrete formed and cast-in-placed 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 | $255.77 | 370 | $94,634.90 |
| Equipment/Installation | 1223 | Excavation, common earth, large equipment, 150 ft | Bulk excavation of common earth including sand and gravel with dozer >100 HP with average push distance of 150 feet. Includes equipment and labor. | Cubic Yard | $3.26 | 4300 | $14,018.00 |
| Equipment/Installation | 50 | Earthfill, Manually Compacted | Earthfill, manually compacted, includes equipment and labor | Cubic yard | $5.23 | 1660 | $8,681.80 |
| Mobilization | 1139 | Mobilization, medium equipment | Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds. | Each | $203.05 | 6 | $1,218.30 |
| Mobilization | 1137 | Mobilization, very small equipment | Equipment that is small enough to be transported by a pick-up truck with typical weights less than 3,500 pounds. Can be multiple pieces of equipment if all hauled simultaneously. | Each | $56.22 | 20 | $1,124.40 |

## Scenario Worksheet

### Practice and Scenario Description:

| Information Type | Data |
|---|---|
| Region | Corn Belt |
| State | Ohio |
| Discipline Group | Environmental Engineering |
| Practice Code/Name | 313 - Waste Storage Facility |
| Scenario ID | 15 |
| Scenario Name | Concrete Tank Open Top - 15,000 - 24,999 Cu Ft Storage |
| Scenario Description | This scenario consists of installing an open top concrete tank that has a design storage volume from 15,000 to 24,999 Cu Ft. Payment includes materials and equipment necessary for construction of the concrete tank. If a roof is to be included in the installation refer to Practice Standard 367 - Roofs and Covers. Vehicular and equipment access is addressed in Heavy Use Area Protection (561). Tank can also be installed under an animal facility using slats. The design volume does not include freeboard. This practice will address soil and water quality by reducing the pollution potential to soil, surface water and ground water. Payment includes all materials, equipment and labor to install a concrete tank and gravel for drainfill around the tank.<br><br>Potential Associated Practices: Pond Sealing or Lining, Bentonite Sealant (521C), Pond Sealing or Lining, Compacted Clay Treatment (521D), Pond Sealing or Lining, Flexible Membrane (521A), Pond Sealing or Lining, Soil Dispersant (521B), Fence (382), Critical Area Planting (342), Nutrient Management (590), Access Road (560), Waste Transfer (634), Heavy Use Area Protection (561), Roof and Covers (367), Solid/Liquid Waste Separation Facility (632), Diversion (362), Subsurface Drain (606), Pumping Plant (533) and Underground Outlet (620). |
| Before Practice Situation | Manure and other agricultural by-products are not being utilized or controlled in an environmentally safe manner. The wastes are either accumulating at the source, or other location, or are being transported but not properly utilized or disposed of. This situation poses an environmentally threat of excessive nutrients, organics, and pathogens being transported into surface and groundwaters, in addition to the use of excessive amounts of fertilizers. |
| After Practice Situation | Manure and other agricultural by-products are being controlled, by the collection at the source, and stored temporarily, at an environmentally suitable location, until such time that they are disposed of or utilized in a proper manner, typically in accordance with a nutrient management plan.<br>Tank is typically 8 ft deep, with a bottom area of 2,670 sq.ft., and a design storage volume of 18,700 cubic feet plus 1 ft freeboard. Size based on design volume of manure, other wastes, rainfall, lot runoff, etc as appropriate and does not include the 1 ft of freeboard. |
| Scenario Feature Measure | Design Storage Volume |
| Scenario Unit | Cubic Foot |
| Scenario Typical Size | 18,700 |

### Cost Summary:

| Cost Category | Scenario Cost | Scenario Cost/Unit |
|---|---|---|
| Materials | $3,018.06 | $0.16 |
| Equipment/Installation | $34,677.41 | $1.85 |
| Labor | $1,071.60 | $0.06 |
| Mobilization | $1,080.74 | $0.06 |
| Acquisition of Technical Knowledge | $0.00 | $0.00 |
| Foregone Income | $0.00 | $0.00 |
| Total | $39,847.81 | $2.13 |

### Cost Details:

| Cost Category | Component ID | Component Name | Component Description | Unit | Price ($/unit) | Quantity | Cost |
|---|---|---|---|---|---|---|---|
| Materials | 1614 | Waterstop, PVC, ribbed, 3/16" x 6" | Waterstop, PVC, ribbed, 3/16" thick by 6"wide. Includes materials, equipment and labor. | Foot | $4.82 | 183 | $882.06 |
| Materials | 46 | Aggregate, Gravel, Graded | Gravel, includes materials, equipment and labor to transport and place. Includes washed and unwashed gravel. | Cubic yard | $26.70 | 80 | $2,136.00 |
| 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 | $406.16 | 40 | $16,246.40 |
| Equipment/Installation | 37 | Concrete, CIP, slab on grade, reinforced | Steel reinforced concrete formed and cast-in-placed 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 | $255.77 | 53 | $13,555.81 |
| Equipment/Installation | 50 | Earthfill, Manually Compacted | Earthfill, manually compacted, includes equipment and labor | Cubic yard | $5.23 | 240 | $1,255.20 |
| Equipment/Installation | 931 | Hydraulic Excavator, 1 CY | Track mounted hydraulic excavator with bucket capacity range of 0.8 to 1.5 CY. Equipment and power unit costs. Labor not included. | Hour | $90.50 | 40 | $3,620.00 |
| Labor | 233 | Equipment Operators, Heavy | Includes: Cranes, Hydraulic Excavators >=50 HP, Dozers, Paving Machines, Rock Trenchers, Trenchers >=12", Dump Trucks, Ag Equipment >=150 HP, Scrapers, Water Wagons. | Hour | $26.79 | 40 | $1,071.60 |
| Mobilization | 1139 | Mobilization, medium equipment | Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds. | Each | $203.05 | 2 | $406.10 |
| Mobilization | 1137 | Mobilization, very small equipment | Equipment that is small enough to be transported by a pick-up truck with typical weights less than 3,500 pounds. Can be multiple pieces of equipment if all hauled simultaneously. | Each | $56.22 | 12 | $674.64 |

## Scenario Worksheet

### Practice and Scenario Description:

| Information Type | Data |
|---|---|
| Region | Corn Belt |
| State | Ohio |
| Discipline Group | Environmental Engineering |
| Practice Code/Name | 313 - Waste Storage Facility |
| Scenario ID | 16 |
| Scenario Name | Concrete Tank Open Top - 25,000 - 49,999 Cu Ft Storage |
| Scenario Description | This scenario consists of installing an open top concrete tank that has a design storage volume from 25,000 to 49,999 Cu Ft. Payment includes materials and equipment necessary for construction of the concrete tank. If a roof is to be included in the installation refer to Practice Standard 367 - Roofs and Covers. Vehicular and equipment access is addressed in Heavy Use Area Protection (561). Tank can also be installed under an animal facility using slats. The design volume does not include freeboard. This practice will address soil and water quality by reducing the pollution potential to soil, surface water and ground water. Payment includes all materials, equipment and labor to install a concrete tank and gravel for drainfill around the tank.<br><br>Potential Associated Practices: Pond Sealing or Lining, Bentonite Sealant (521C), Pond Sealing or Lining, Compacted Clay Treatment (521D), Pond Sealing or Lining, Flexible Membrane (521A), Pond Sealing or Lining, Soil Dispersant (521B), Fence (382), Critical Area Planting (342), Nutrient Management (590), Access Road (560), Waste Transfer (634), Heavy Use Area Protection (561), Roof and Covers (367), Solid/Liquid Waste Separation Facility (632), Diversion (362), Subsurface Drain (606), and Underground Outlet (620). |
| Before Practice Situation | Manure and other agricultural by-products are not being utilized or controlled in an environmentally safe manner. The wastes are either accumulating at the source, or other location, or are being transported but not properly utilized or disposed of. This situation poses an environmentally threat of excessive nutrients, organics, and pathogens being transported into surface and groundwaters, in addition to the use of excessive amounts of fertilizers. |
| After Practice Situation | Manure and other agricultural by-products are being controlled, by the collection at the source, and stored temporarily, at an environmentally suitable location, until such time that they are disposed of or utilized in a proper manner, typically in accordance with a nutrient management plan.<br>Tank installed is 8' deep, with an interior bottom area of 3,786 SF, and a design storage volume of 26,500 cubic feet plus 1 ft freeboard. Outside dimensions, 4,225 sq ft (includes 3' footing and 8" wall). Size based on manure, other wastes, rainfall, lot runoff, etc as appropriate. Calculated volume for scenario does not include the 1 ft of freeboard. |
| Scenario Feature Measure | Design Storage Volume |
| Scenario Unit | Cubic Foot |
| Scenario Typical Size | 26,500 |

### Cost Summary:

| Cost Category | Scenario Cost | Scenario Cost/Unit |
|---|---|---|
| Materials | $4,559.56 | $0.17 |
| Equipment/Installation | $48,634.60 | $1.84 |
| Labor | $0.00 | $0.00 |
| Mobilization | $1,193.18 | $0.05 |
| Acquisition of Technical Knowledge | $0.00 | $0.00 |
| Foregone Income | $0.00 | $0.00 |
| Total | $54,387.34 | $2.05 |

### Cost Details:

| Cost Category | Component ID | Component Name | Component Description | Unit | Price ($/unit) | Quantity | Cost |
|---|---|---|---|---|---|---|---|
| Materials | 1614 | Waterstop, PVC, ribbed, 3/16" x 6" | Waterstop, PVC, ribbed, 3/16" thick by 6"wide. Includes materials, equipment and labor. | Foot | $4.82 | 248 | $1,195.36 |
| Materials | 46 | Aggregate, Gravel, Graded | Gravel, includes materials, equipment and labor to transport and place. Includes washed and unwashed gravel. | Cubic yard | $26.70 | 126 | $3,364.20 |
| 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 | $406.16 | 50 | $20,308.00 |
| Equipment/Installation | 37 | Concrete, CIP, slab on grade, reinforced | Steel reinforced concrete formed and cast-in-placed 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 | $255.77 | 80 | $20,461.60 |
| Equipment/Installation | 1223 | Excavation, common earth, large equipment, 150 ft | Bulk excavation of common earth including sand and gravel with dozer >100 HP with average push distance of 150 feet. Includes equipment and labor. | Cubic Yard | $3.26 | 1450 | $4,727.00 |
| Equipment/Installation | 50 | Earthfill, Manually Compacted | Earthfill, manually compacted, includes equipment and labor | Cubic yard | $5.23 | 600 | $3,138.00 |
| Mobilization | 1139 | Mobilization, medium equipment | Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds. | Each | $203.05 | 2 | $406.10 |
| Mobilization | 1137 | Mobilization, very small equipment | Equipment that is small enough to be transported by a pick-up truck with typical weights less than 3,500 pounds. Can be multiple pieces of equipment if all hauled simultaneously. | Each | $56.22 | 14 | $787.08 |

## Scenario Worksheet

### Practice and Scenario Description:

| Information Type | Data |
|---|---|
| Region | Corn Belt |
| State | Ohio |
| Discipline Group | Environmental Engineering |
| Practice Code/Name | 313 - Waste Storage Facility |
| Scenario ID | 17 |
| Scenario Name | Concrete Tank Open Top - 50,000 - 74,999 Cu Ft Storage |
| Scenario Description | This scenario consists of installing an open top concrete tank that has a design storage volume from 50,000 to 74,999 Cu Ft. Payment includes materials and equipment necessary for construction of the concrete tank. If a roof is to be included in the installation refer to Practice Standard 367 - Roofs and Covers. Vehicular and equipment access is addressed in Heavy Use Area Protection (561). Tank can also be installed under an animal facility using slats. The design volume does not include freeboard. This practice will address soil and water quality by reducing the pollution potential to soil, surface water and ground water. Payment includes all materials, equipment and labor to install a concrete tank and gravel for drainfill around the tank.<br><br>Potential Associated Practices: Pond Sealing or Lining, Bentonite Sealant (521C), Pond Sealing or Lining, Compacted Clay Treatment (521D), Pond Sealing or Lining, Flexible Membrane (521A), Pond Sealing or Lining, Soil Dispersant (521B), Fence (382), Critical Area Planting (342), Nutrient Management (590), Access Road (560), Waste Transfer (634), Heavy Use Area Protection (561), Roof and Covers (367), Solid/Liquid Waste Separation Facility (632), Diversion (362), Subsurface Drain (606), and Underground Outlet (620). |
| Before Practice Situation | Manure and other agricultural by-products are not being utilized or controlled in an environmentally safe manner. The wastes are either accumulating at the source, or other location, or are being transported but not properly utilized or disposed of. This situation poses an environmentally threat of excessive nutrients, organics, and pathogens being transported into surface and groundwaters, in addition to the use of excessive amounts of fertilizers. |
| After Practice Situation | Manure and other agricultural by-products are being controlled, by the collection at the source, and stored temporarily, at an environmentally suitable location, until such time that they are disposed of or utilized in a proper manner, typically in accordance with a nutrient management plan.<br>Tank typically 8' deep, with a bottom area of 8470 SF, and a design storage volume of 59,300 cubic feet plus 1 ft freeboard. Outside dimensions 9,216 sq ft (includes 3' footing and 8" wall). Sizing based on manure, other wastes, rainfall, lot runoff, etc. as appropriate. Volume does not include 1 ft of freeboard. |
| Scenario Feature Measure | Design Storage Volume |
| Scenario Unit | Cubic Foot |
| Scenario Typical Size | 59,300 |

### Cost Summary:

| Cost Category | Scenario Cost | Scenario Cost/Unit |
|---|---|---|
| Materials | $8,288.56 | $0.14 |
| Equipment/Installation | $84,303.20 | $1.42 |
| Labor | $0.00 | $0.00 |
| Mobilization | $1,261.96 | $0.02 |
| Acquisition of Technical Knowledge | $0.00 | $0.00 |
| Foregone Income | $0.00 | $0.00 |
| Total | $93,853.72 | $1.58 |

### Cost Details:

| Cost Category | Component ID | Component Name | Component Description | Unit | Price ($/unit) | Quantity | Cost |
|---|---|---|---|---|---|---|---|
| Materials | 1614 | Waterstop, PVC, ribbed, 3/16" x 6" | Waterstop, PVC, ribbed, 3/16" thick by 6"wide. Includes materials, equipment and labor. | Foot | $4.82 | 368 | $1,773.76 |
| Materials | 46 | Aggregate, Gravel, Graded | Gravel, includes materials, equipment and labor to transport and place. Includes washed and unwashed gravel. | Cubic yard | $26.70 | 244 | $6,514.80 |
| 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 | $406.16 | 75 | $30,462.00 |
| Equipment/Installation | 37 | Concrete, CIP, slab on grade, reinforced | Steel reinforced concrete formed and cast-in-placed 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 | $255.77 | 160 | $40,923.20 |
| Equipment/Installation | 1223 | Excavation, common earth, large equipment, 150 ft | Bulk excavation of common earth including sand and gravel with dozer >100 HP with average push distance of 150 feet. Includes equipment and labor. | Cubic Yard | $3.26 | 3000 | $9,780.00 |
| Equipment/Installation | 50 | Earthfill, Manually Compacted | Earthfill, manually compacted, includes equipment and labor | Cubic yard | $5.23 | 600 | $3,138.00 |
| Mobilization | 1139 | Mobilization, medium equipment | Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds. | Each | $203.05 | 4 | $812.20 |
| Mobilization | 1137 | Mobilization, very small equipment | Equipment that is small enough to be transported by a pick-up truck with typical weights less than 3,500 pounds. Can be multiple pieces of equipment if all hauled simultaneously. | Each | $56.22 | 8 | $449.76 |

## Scenario Worksheet

### Practice and Scenario Description:

| Information Type | Data |
|---|---|
| Region | Corn Belt |
| State | Ohio |
| Discipline Group | Environmental Engineering |
| Practice Code/Name | 313 - Waste Storage Facility |
| Scenario ID | 14 |
| Scenario Name | Concrete Tank Open Top - 5,000 - 14,999 Cu Ft Storage |
| Scenario Description | This scenario consists of installing an open top concrete tank that has a design storage volume from 5,000 to 14,999 Cu Ft. Payment includes materials and equipment necessary for construction of the concrete tank. If a roof is to be included in the installation refer to Practice Standard 367 - Roofs and Covers. Vehicular and equipment access is addressed in Heavy Use Area Protection (561). Tank can also be installed under an animal facility using slats. Design volume does not include freeboard. This practice will address soil and water quality by reducing the pollution potential to soil, surface water and ground water. Payment includes all materials, equipment and labor to install a concrete tank and gravel for drainfill around the tank.<br><br>Potential Associated Practices: Pond Sealing or Lining, Bentonite Sealant (521C), Pond Sealing or Lining, Compacted Clay Treatment (521D), Pond Sealing or Lining, Flexible Membrane (521A), Pond Sealing or Lining, Soil Dispersant (521B), Fence (382), Critical Area Planting (342), Nutrient Management (590), Access Road (560), Waste Transfer (634), Heavy Use Area Protection (561), Roof and Covers (367), Solid/Liquid Waste Separation Facility (632), Diversion (362), Subsurface Drain (606), and Underground Outlet (620). |
| Before Practice Situation | Manure and other agricultural by-products are not being utilized or controlled in an environmentally safe manner. The wastes are either accumulating at the source, or other location, or are being transported but not properly utilized or disposed of. This situation poses an environmentally threat of excessive nutrients, organics, and pathogens being transported into surface and groundwaters, in addition to the use of excessive amounts of fertilizers. |
| After Practice Situation | Manure and other agricultural by-products are being controlled, by the collection at the source, and stored temporarily, at an environmentally suitable location, until such time that they are disposed of or utilized in a proper manner, typically in accordance with a nutrient management plan.<br>Tank typically 8' deep, with a bottom area of 1256 SF, and a design storage volume of 8,800 cubic feet plus 1 ft freeboard. Sizing based on manure, other wastes, rainfall, lot runoff, etc. as appropriate. Volume does not include 1 ft of freeboard. |
| Scenario Feature Measure | Design Storage Volume |
| Scenario Unit | Cubic Foot |
| Scenario Typical Size | 8800 |

### Cost Summary:

| Cost Category | Scenario Cost | Scenario Cost/Unit |
|---|---|---|
| Materials | $1,884.10 | $0.21 |
| Equipment/Installation | $20,248.88 | $2.30 |
| Labor | $803.70 | $0.09 |
| Mobilization | $1,486.84 | $0.17 |
| Acquisition of Technical Knowledge | $0.00 | $0.00 |
| Foregone Income | $0.00 | $0.00 |
| Total | $24,423.52 | $2.78 |

### Cost Details:

| Cost Category | Component ID | Component Name | Component Description | Unit | Price ($/unit) | Quantity | Cost |
|---|---|---|---|---|---|---|---|
| Materials | 1614 | Waterstop, PVC, ribbed, 3/16" x 6" | Waterstop, PVC, ribbed, 3/16" thick by 6"wide. Includes materials, equipment and labor. | Foot | $4.82 | 125 | $602.50 |
| Materials | 46 | Aggregate, Gravel, Graded | Gravel, includes materials, equipment and labor to transport and place. Includes washed and unwashed gravel. | Cubic yard | $26.70 | 48 | $1,281.60 |
| 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 | $406.16 | 28 | $11,372.48 |
| Equipment/Installation | 37 | Concrete, CIP, slab on grade, reinforced | Steel reinforced concrete formed and cast-in-placed 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 | $255.77 | 20 | $5,115.40 |
| Equipment/Installation | 50 | Earthfill, Manually Compacted | Earthfill, manually compacted, includes equipment and labor | Cubic yard | $5.23 | 200 | $1,046.00 |
| Equipment/Installation | 931 | Hydraulic Excavator, 1 CY | Track mounted hydraulic excavator with bucket capacity range of 0.8 to 1.5 CY. Equipment and power unit costs. Labor not included. | Hour | $90.50 | 30 | $2,715.00 |
| Labor | 233 | Equipment Operators, Heavy | Includes: Cranes, Hydraulic Excavators >=50 HP, Dozers, Paving Machines, Rock Trenchers, Trenchers >=12", Dump Trucks, Ag Equipment >=150 HP, Scrapers, Water Wagons. | Hour | $26.79 | 30 | $803.70 |
| Mobilization | 1139 | Mobilization, medium equipment | Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds. | Each | $203.05 | 4 | $812.20 |
| Mobilization | 1137 | Mobilization, very small equipment | Equipment that is small enough to be transported by a pick-up truck with typical weights less than 3,500 pounds. Can be multiple pieces of equipment if all hauled simultaneously. | Each | $56.22 | 12 | $674.64 |

## Scenario Worksheet

### Practice and Scenario Description:

| Information Type | Data |
|---|---|
| Region | Corn Belt |
| State | Ohio |
| Discipline Group | Environmental Engineering |
| Practice Code/Name | 313 - Waste Storage Facility |
| Scenario ID | 13 |
| Scenario Name | Concrete Tank Open Top - <5,000 Cu Ft Storage |
| Scenario Description | This scenario consists of installing an open top concrete tank with or without a full width ramp that has a design storage volume less than 5,000 cu ft. Payment includes materials and equipment necessary for construction of the concrete tank. If a roof is to be included in the installation refer to Practice Standard 367 - Roofs and Covers. Vehicular and equipment access is addressed in Heavy Use Area Protection (561). Tank can also be installed under an animal facility using slats. Design volume does not include freeboard. This practice will address soil and water quality by reducing the pollution potential to soil, surface water and ground water. Payment includes all materials, equipment and labor to install a concrete tank and gravel for drainfill around the tank.<br><br>Potential Associated Practices: Pond Sealing or Lining, Bentonite Sealant (521C), Pond Sealing or Lining, Compacted Clay Treatment (521D), Pond Sealing or Lining, Flexible Membrane (521A), Pond Sealing or Lining, Soil Dispersant (521B), Fence (382), Critical Area Planting (342), Nutrient Management (590), Access Road (560), Waste Transfer (634), Heavy Use Area Protection (561), Roof and Covers (367), Solid/Liquid Waste Separation Facility (632), Diversion (362), Subsurface Drain (606), and Underground Outlet (620). |
| Before Practice Situation | Manure and other agricultural by-products are not being utilized or controlled in an environmentally safe manner. The wastes are either accumulating at the source, or other location, or are being transported but not properly utilized or disposed of. This situation poses an environmentally threat of excessive nutrients, organics, and pathogens being transported into surface and groundwaters, in addition to the use of excessive amounts of fertilizers. |
| After Practice Situation | Manure and other agricultural by-products are being controlled, by the collection at the source, and stored temporarily, at an environmentally suitable location, until such time that they are disposed of or utilized in a proper manner, typically in accordance with a nutrient management plan.<br>Tank typically 5' deep, with a bottom area of 880 sq ft, and a design storage colume of 3520 cu ft plus 1 ft freeboard. Sizing based on manure, other wastes, rainfall, lot runoff, etc. as appropriate. Volume does not include 1 ft of freeboard. |
| Scenario Feature Measure | Design Storage Volume |
| Scenario Unit | Cubic Foot |
| Scenario Typical Size | 3520 |

### Cost Summary:

| Cost Category | Scenario Cost | Scenario Cost/Unit |
|---|---|---|
| Materials | $2,314.03 | $0.66 |
| Equipment/Installation | $16,507.92 | $4.69 |
| Labor | $803.70 | $0.23 |
| Mobilization | $630.98 | $0.18 |
| Acquisition of Technical Knowledge | $0.00 | $0.00 |
| Foregone Income | $0.00 | $0.00 |
| Total | $20,256.63 | $5.75 |

### Cost Details:

| Cost Category | Component ID | Component Name | Component Description | Unit | Price ($/unit) | Quantity | Cost |
|---|---|---|---|---|---|---|---|
| Materials | 1614 | Waterstop, PVC, ribbed, 3/16" x 6" | Waterstop, PVC, ribbed, 3/16" thick by 6"wide. Includes materials, equipment and labor. | Foot | $4.82 | 186.5 | $898.93 |
| Materials | 46 | Aggregate, Gravel, Graded | Gravel, includes materials, equipment and labor to transport and place. Includes washed and unwashed gravel. | Cubic yard | $26.70 | 53 | $1,415.10 |
| 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 | $406.16 | 15.2 | $6,173.63 |
| Equipment/Installation | 37 | Concrete, CIP, slab on grade, reinforced | Steel reinforced concrete formed and cast-in-placed 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 | $255.77 | 25.7 | $6,573.29 |
| Equipment/Installation | 50 | Earthfill, Manually Compacted | Earthfill, manually compacted, includes equipment and labor | Cubic yard | $5.23 | 200 | $1,046.00 |
| Equipment/Installation | 931 | Hydraulic Excavator, 1 CY | Track mounted hydraulic excavator with bucket capacity range of 0.8 to 1.5 CY. Equipment and power unit costs. Labor not included. | Hour | $90.50 | 30 | $2,715.00 |
| Labor | 233 | Equipment Operators, Heavy | Includes: Cranes, Hydraulic Excavators >=50 HP, Dozers, Paving Machines, Rock Trenchers, Trenchers >=12", Dump Trucks, Ag Equipment >=150 HP, Scrapers, Water Wagons. | Hour | $26.79 | 30 | $803.70 |
| Mobilization | 1139 | Mobilization, medium equipment | Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds. | Each | $203.05 | 2 | $406.10 |
| Mobilization | 1137 | Mobilization, very small equipment | Equipment that is small enough to be transported by a pick-up truck with typical weights less than 3,500 pounds. Can be multiple pieces of equipment if all hauled simultaneously. | Each | $56.22 | 4 | $224.88 |

## Scenario Worksheet

### Practice and Scenario Description:

| Information Type | Data |
|---|---|
| Region | Corn Belt |
| State | Ohio |
| Discipline Group | Environmental Engineering |
| Practice Code/Name | 313 - Waste Storage Facility |
| Scenario ID | 18 |
| Scenario Name | Concrete Tank Open Top - 75,000 - 109,999 Cu Ft Storage |
| Scenario Description | This scenario consists of installing an open top concrete tank that has a design storage volume from 75,000 to 109,999 Cu Ft. Payment includes materials and equipment necessary for construction of the concrete tank. If a roof is to be included in the installation refer to Practice Standard 367 - Roofs and Covers. Vehicular and equipment access is addressed in Heavy Use Area Protection (561). Tank can also be installed under an animal facility using slats. The design volume does not include freeboard. This practice will address soil and water quality by reducing the pollution potential to soil, surface water and ground water. Payment includes all materials, equipment and labor to install a concrete tank and gravel for drainfill around the tank.<br><br>Potential Associated Practices: Pond Sealing or Lining, Bentonite Sealant (521C), Pond Sealing or Lining, Compacted Clay Treatment (521D), Pond Sealing or Lining, Flexible Membrane (521A), Pond Sealing or Lining, Soil Dispersant (521B), Fence (382), Critical Area Planting (342), Nutrient Management (590), Access Road (560), Waste Transfer (634), Heavy Use Area Protection (561), Roof and Covers (367), Solid/Liquid Waste Separation Facility (632), Diversion (362), Pipeline (516), Subsurface Drain (606), and Underground Outlet (620). |
| Before Practice Situation | Manure and other agricultural by-products are not being utilized or controlled in an environmentally safe manner. The wastes are either accumulating at the source, or other location, or are being transported but not properly utilized or disposed of. This situation poses an environmentally threat of excessive nutrients, organics, and pathogens being transported into surface and groundwaters, in addition to the use of excessive amounts of fertilizers. |
| After Practice Situation | Manure and other agricultural by-products are being controlled, by the collection at the source, and stored temporarily, at an environmentally suitable location, until such time that they are disposed of or utilized in a proper manner, typically in accordance with a nutrient management plan. This practice will address soil and water quality by reducing the pollution potential to soil, surface water and ground water.<br>Tank typically 8' deep, with a bottom area of 12,642 SF, and a storage capacity of 88,500 cubic feet plus 1 ft freeboard. Outside dimensions 13,456 sq ft (includes 3' footing and 8" wall).Sizing based on manure, other wastes, rainfall, lot runoff, etc. as appropriate. Volume does not include 1 ft of freeboard. |
| Scenario Feature Measure | Design Storage Volume |
| Scenario Unit | Cubic Foot |
| Scenario Typical Size | 88,500 |

### Cost Summary:

| Cost Category | Scenario Cost | Scenario Cost/Unit |
|---|---|---|
| Materials | $10,819.80 | $0.12 |
| Equipment/Installation | $112,537.50 | $1.27 |
| Labor | $0.00 | $0.00 |
| Mobilization | $1,892.94 | $0.02 |
| Acquisition of Technical Knowledge | $0.00 | $0.00 |
| Foregone Income | $0.00 | $0.00 |
| Total | $125,250.24 | $1.42 |

### Cost Details:

| Cost Category | Component ID | Component Name | Component Description | Unit | Price ($/unit) | Quantity | Cost |
|---|---|---|---|---|---|---|---|
| Materials | 1614 | Waterstop, PVC, ribbed, 3/16" x 6" | Waterstop, PVC, ribbed, 3/16" thick by 6"wide. Includes materials, equipment and labor. | Foot | $4.82 | 450 | $2,169.00 |
| Materials | 46 | Aggregate, Gravel, Graded | Gravel, includes materials, equipment and labor to transport and place. Includes washed and unwashed gravel. | Cubic yard | $26.70 | 324 | $8,650.80 |
| 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 | $406.16 | 90 | $36,554.40 |
| Equipment/Installation | 37 | Concrete, CIP, slab on grade, reinforced | Steel reinforced concrete formed and cast-in-placed 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 | $255.77 | 230 | $58,827.10 |
| Equipment/Installation | 1223 | Excavation, common earth, large equipment, 150 ft | Bulk excavation of common earth including sand and gravel with dozer >100 HP with average push distance of 150 feet. Includes equipment and labor. | Cubic Yard | $3.26 | 4300 | $14,018.00 |
| Equipment/Installation | 50 | Earthfill, Manually Compacted | Earthfill, manually compacted, includes equipment and labor | Cubic yard | $5.23 | 600 | $3,138.00 |
| Mobilization | 1139 | Mobilization, medium equipment | Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds. | Each | $203.05 | 6 | $1,218.30 |
| Mobilization | 1137 | Mobilization, very small equipment | Equipment that is small enough to be transported by a pick-up truck with typical weights less than 3,500 pounds. Can be multiple pieces of equipment if all hauled simultaneously. | Each | $56.22 | 12 | $674.64 |

## Scenario Worksheet

### Practice and Scenario Description:

| Information Type | Data |
|---|---|
| Region | Corn Belt |
| State | Ohio |
| Discipline Group | Environmental Engineering |
| Practice Code/Name | 313 - Waste Storage Facility |
| Scenario ID | 12 |
| Scenario Name | Concrete Lid Tank - ≥1,000 Cu Ft Storage |
| Scenario Description | This scenario consists of installing a small concrete tank with a solid lid and a design storage volume of greater than or equal to 1,000 Cu Ft. Design volume does not include freeboard. This practice will address soil and water quality by reducing the pollution potential to soil, surface water and ground water. Payment includes all materials, equipment and labor to install a concrete lid tank and gravel for drainfill around the tank.<br><br>Potential Associated Practices: Pond Sealing or Lining, Bentonite Sealant (521C), Pond Sealing or Lining, Compacted Clay Treatment (521D), Pond Sealing or Lining, Flexible Membrane (521A), Pond Sealing or Lining, Soil Dispersant (521B), Fence (382), Critical Area Planting (342), Nutrient Management (590), Access Road (560), Waste Transfer (634), Heavy Use Area Protection (561), Roof and Covers (367), Solid/Liquid Waste Separation Facility (632), Diversion (362), Subsurface Drain (606), Pumping Plant (533),and Underground Outlet (620). |
| Before Practice Situation | Manure and other agricultural by-products are not being utilized or controlled in an environmentally safe manner. The wastes are either accumulating at the source, or other location, or are being transported but not properly utilized or disposed of. This situation poses an environmentally threat of excessive nutrients, organics, and pathogens being transported into surface and groundwaters, in addition to the use of excessive amounts of fertilizers. |
| After Practice Situation | Manure and other agricultural by-products are being controlled, by the collection at the source, and stored temporarily, at an environmentally suitable location, until such time that they are disposed of or utilized in a proper manner, typically in accordance with a nutrient management plan.<br>Tank typically 8' deep x 12' wide x 40' long, with a design storage volume of 3,360 cubic feet plus 1 ft freeboard. Sizing based on manure, other wastes, rainfall, lot runoff, etc. Volume does not include 1 ft of freeboard. Tanks associated with open lots sized to handle design storm in tank or in combination with lot as per state regulations. |
| Scenario Feature Measure | Design Storage Volume |
| Scenario Unit | Cubic Foot |
| Scenario Typical Size | 3360 |

### Cost Summary:

| Cost Category | Scenario Cost | Scenario Cost/Unit |
|---|---|---|
| Materials | $875.08 | $0.26 |
| Equipment/Installation | $18,201.30 | $5.42 |
| Labor | $267.90 | $0.08 |
| Mobilization | $518.54 | $0.15 |
| Acquisition of Technical Knowledge | $0.00 | $0.00 |
| Foregone Income | $0.00 | $0.00 |
| Total | $19,862.82 | $5.91 |

### Cost Details:

| Cost Category | Component ID | Component Name | Component Description | Unit | Price ($/unit) | Quantity | Cost |
|---|---|---|---|---|---|---|---|
| Materials | 1614 | Waterstop, PVC, ribbed, 3/16" x 6" | Waterstop, PVC, ribbed, 3/16" thick by 6"wide. Includes materials, equipment and labor. | Foot | $4.82 | 104 | $501.28 |
| Materials | 46 | Aggregate, Gravel, Graded | Gravel, includes materials, equipment and labor to transport and place. Includes washed and unwashed gravel. | Cubic yard | $26.70 | 14 | $373.80 |
| 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 | $406.16 | 35 | $14,215.60 |
| Equipment/Installation | 37 | Concrete, CIP, slab on grade, reinforced | Steel reinforced concrete formed and cast-in-placed 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 | $255.77 | 10 | $2,557.70 |
| Equipment/Installation | 50 | Earthfill, Manually Compacted | Earthfill, manually compacted, includes equipment and labor | Cubic yard | $5.23 | 100 | $523.00 |
| Equipment/Installation | 931 | Hydraulic Excavator, 1 CY | Track mounted hydraulic excavator with bucket capacity range of 0.8 to 1.5 CY. Equipment and power unit costs. Labor not included. | Hour | $90.50 | 10 | $905.00 |
| Labor | 233 | Equipment Operators, Heavy | Includes: Cranes, Hydraulic Excavators >=50 HP, Dozers, Paving Machines, Rock Trenchers, Trenchers >=12”, Dump Trucks, Ag Equipment >=150 HP, Scrapers, Water Wagons. | Hour | $26.79 | 10 | $267.90 |
| Mobilization | 1139 | Mobilization, medium equipment | Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds. | Each | $203.05 | 2 | $406.10 |
| Mobilization | 1137 | Mobilization, very small equipment | Equipment that is small enough to be transported by a pick-up truck with typical weights less than 3,500 pounds. Can be multiple pieces of equipment if all hauled simultaneously. | Each | $56.22 | 2 | $112.44 |

## Scenario Worksheet

### Practice and Scenario Description:

| Information Type | Data |
|---|---|
| Region | Corn Belt |
| State | Ohio |
| Discipline Group | Environmental Engineering |
| Practice Code/Name | 313 - Waste Storage Facility |
| Scenario ID | 11 |
| Scenario Name | ConcreteLid Tank - <1,000 Cu Ft Storage |
| Scenario Description | This scenario consists of installing a small concrete tank with a solid lid and a design storage volume of less than 1,000 Cu Ft. Design volume does not include freeboard. This practice will address soil and water quality by reducing the pollution potential to soil, surface water and ground water. Payment includes all materials, equipment and labor to install a concrete lid tank and gravel for drainfill around the tank.<br><br>Potential Associated Practices: Pond Sealing or Lining, Bentonite Sealant (521C), Pond Sealing or Lining, Compacted Clay Treatment (521D), Pond Sealing or Lining, Flexible Membrane (521A), Pond Sealing or Lining, Soil Dispersant (521B), Fence (382), Critical Area Planting (342), Nutrient Management (590), Access Road (560), Waste Transfer (634), Heavy Use Area Protection (561), Roof and Covers (367), Solid/Liquid Waste Separation Facility (632), Diversion (362), Subsurface Drain (606), Pumping Plant (533),and Underground Outlet (620). |
| Before Practice Situation | Manure and other agricultural by-products are not being utilized or controlled in an environmentally safe manner. The wastes are either accumulating at the source, or other location, or are being transported but not properly utilized or disposed of. This situation poses an environmentally threat of excessive nutrients, organics, and pathogens being transported into surface and groundwaters, in addition to the use of excessive amounts of fertilizers. |
| After Practice Situation | Manure and other agricultural by-products are being controlled, by the collection at the source, and stored temporarily, at an environmentally suitable location, until such time that they are disposed of or utilized in a proper manner, typically in accordance with a nutrient management plan.<br>Tank typically 5' deep x 8' wide x 9' long, with a design storage volume of 288 cubic feet plus 1 ft freeboard. Sizing based on manure, other wastes, rainfall, lot runoff, etc. Volume does not include 1 ft of freeboard. Tanks associated with open lots sized to handle design storm in tank or in combination with lot as per state regulations. |
| Scenario Feature Measure | Design Storage Volume |
| Scenario Unit | Cubic Foot |
| Scenario Typical Size | 288 |

### Cost Summary:

| Cost Category | Scenario Cost | Scenario Cost/Unit |
|---|---|---|
| Materials | $434.56 | $1.51 |
| Equipment/Installation | $3,655.76 | $12.69 |
| Labor | $267.90 | $0.93 |
| Mobilization | $518.54 | $1.80 |
| Acquisition of Technical Knowledge | $0.00 | $0.00 |
| Foregone Income | $0.00 | $0.00 |
| Total | $4,876.76 | $16.93 |

### Cost Details:

| Cost Category | Component ID | Component Name | Component Description | Unit | Price ($/unit) | Quantity | Cost |
|---|---|---|---|---|---|---|---|
| Materials | 1614 | Waterstop, PVC, ribbed, 3/16" x 6" | Waterstop, PVC, ribbed, 3/16" thick by 6"wide. Includes materials, equipment and labor. | Foot | $4.82 | 68 | $327.76 |
| Materials | 46 | Aggregate, Gravel, Graded | Gravel, includes materials, equipment and labor to transport and place. Includes washed and unwashed gravel. | Cubic yard | $26.70 | 4 | $106.80 |
| 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 | $406.16 | 6 | $2,436.96 |
| Equipment/Installation | 50 | Earthfill, Manually Compacted | Earthfill, manually compacted, includes equipment and labor | Cubic yard | $5.23 | 60 | $313.80 |
| Equipment/Installation | 931 | Hydraulic Excavator, 1 CY | Track mounted hydraulic excavator with bucket capacity range of 0.8 to 1.5 CY. Equipment and power unit costs. Labor not included. | Hour | $90.50 | 10 | $905.00 |
| Labor | 233 | Equipment Operators, Heavy | Includes: Cranes, Hydraulic Excavators >=50 HP, Dozers, Paving Machines, Rock Trenchers, Trenchers >=12", Dump Trucks, Ag Equipment >=150 HP, Scrapers, Water Wagons. | Hour | $26.79 | 10 | $267.90 |
| Mobilization | 1139 | Mobilization, medium equipment | Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds. | Each | $203.05 | 2 | $406.10 |
| Mobilization | 1137 | Mobilization, very small equipment | Equipment that is small enough to be transported by a pick-up truck with typical weights less than 3,500 pounds. Can be multiple pieces of equipment if all hauled simultaneously. | Each | $56.22 | 2 | $112.44 |

## Scenario Worksheet

### Practice and Scenario Description:

| Information Type | Data |
|---|---|
| Region | Corn Belt |
| State | Ohio |
| Discipline Group | Environmental Engineering |
| Practice Code/Name | 313 - Waste Storage Facility |
| Scenario ID | 10 |
| Scenario Name | Dry Stack Facility - Concrete Floor with Concrete Side Walls |
| Scenario Description | This scenario consists of a dry stack facility with reinforced concrete floor and concrete side walls. This scenario is intended for situations where consistency of manure or geographical conditions prohibit earthen floors. Payment includes materials and equipment necessary for construction of the floor and walls. If a roof is to be included in the installation refer to Practice Standard 367 - Roofs and Covers. Vehicular and equipment access is addressed in Heavy Use Area Protection (561). The purpose of this practice is to properly store manure and other agricultural by-products that are stackable until they can be hauled away from the site for proper disposal or utilization on land at agronomical rates. This practice will address soil and water quality by reducing the pollution potential to soil, surface water and ground water.<br><br>Potential Associated practices: 342-Critical Area Planting, 362-Diversion, 561-Heavy Use Area Protection, 367-Roofs and Covers, 558-Roof Runoff Structure, 317- |
| Before Practice Situation | Manure and other agricultural by-products are not being utilized or controlled in an environmentally safe manner. The wastes are either accumulating at the source, or other location, or are being transported but not properly utilized or disposed of. This situation poses an environmentally threat of excessive nutrients, organics, and pathogens being transported into surface and groundwaters, in addition to the use of excessive amounts of fertilizers. |
| After Practice Situation | The typical is 40' x 56' concrete slab with 5' high bin dividers. The facility floor is 5" reinforced concrete with 5' reinforced concrete walls. Walls allow for greater storage volume. Walls consist of three permimeter walls (40' + 56' + 40') plus two 30' interior walls to create bins for storage for a total wall length of 196 linear feet. Manure and other agricultural by-products are being controlled, by the collection at the source, and stored temporarily, at an environmentally suitable location, until such time that they are disposed of or utilized in a proper manner, typically in accordance with a nutrient management plan. |
| Scenario Feature Measure | Cubic Foot Storage |
| Scenario Unit | Cubic Foot |
| Scenario Typical Size | 11200 |

### Cost Summary:

| Cost Category | Scenario Cost | Scenario Cost/Unit |
|---|---|---|
| Materials | $747.60 | $0.07 |
| Equipment/Installation | $23,668.87 | $2.11 |
| Labor | $0.00 | $0.00 |
| Mobilization | $406.10 | $0.04 |
| Acquisition of Technical Knowledge | $0.00 | $0.00 |
| Foregone Income | $0.00 | $0.00 |
| Total | $24,822.57 | $2.22 |

### 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 | $26.70 | 28 | $747.60 |
| 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 | $406.16 | 35 | $14,215.60 |
| Equipment/Installation | 37 | Concrete, CIP, slab on grade, reinforced | Steel reinforced concrete formed and cast-in-placed 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 | $255.77 | 35 | $8,951.95 |
| Equipment/Installation | 49 | Earthfill, Roller Compacted | Earthfill, roller or machine compacted, includes equipment and labor | Cubic yard | $3.92 | 83 | $325.36 |
| Equipment/Installation | 48 | Excavation, Common Earth, side cast, small equipment | Bulk excavation and side casting of common earth with hydraulic excavator with less than 1 CY capacity. Includes equipment and labor. | Cubic yard | $2.12 | 83 | $175.96 |
| Mobilization | 1139 | Mobilization, medium equipment | Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds. | Each | $203.05 | 2 | $406.10 |

## Scenario Worksheet

### Practice and Scenario Description:

| Information Type | Data |
|---|---|
| Region | Corn Belt |
| State | Ohio |
| Discipline Group | Environmental Engineering |
| Practice Code/Name | 313 - Waste Storage Facility |
| Scenario ID | 9 |
| Scenario Name | Dry Stack Facility - Concrete Floor with Wood Side Walls |
| Scenario Description | This scenario consists of a dry stack facility with reinforced concrete floor with pressure treated wood side walls. Payment includes materials and equipment necessary for construction of the floor and walls. If a roof is to be included in the installation refer to Practice Standard 367 - Roofs and Covers. Vehicular and equipment access is addressed in Heavy Use Area Protection (561). This scenario is intended for situations where consistency of manure or geographical conditions prohibit earthen floors. The purpose of this practice is to temporarily, properly store manure and other agricultural by-products that are stackable until they can be hauled away from the site for proper disposal or utilization on land at agronomical rates. This practice will address soil and water quality by reducing the pollution potential to soil, surface water and ground water.<br><br>Potential Associated practices: 342-Critical Area Planting, 362-Diversion, 561-Heavy Use Area Protection, 367-Roofs and Covers, 558-Roof Runoff Structure, 317- |
| Before Practice Situation | Manure and other agricultural by-products are not being utilized or controlled in an environmentally safe manner. The wastes are either accumulating at the source, or other location, or are being transported but not properly utilized or disposed of. This situation poses an environmentally threat of excessive nutrients, organics, and pathogens being transported into surface and groundwaters, in addition to the use of excessive amounts of fertilizers. |
| After Practice Situation | The typical is 40' x 56' concrete slab with 5' high bin dividers. The facility floor is 5" reinforced concrete with 5' pressure treated wood (2" x 8" boards) walls, 4' x 6" x 8' posts set 4' c-c with 6" concrete curbing. Walls allow for greater storage volume. Walls consist of three permimeter walls (40' + 56' + 40') plus two 30' interior walls to create bins for storage for a total wall length of 196 linear feet. Manure and other agricultural by-products are being controlled, by the collection at the source, and stored temporarily, at an environmentally suitable location, until such time that they are disposed of or utilized in a proper manner, typically in accordance with a nutrient management plan. |
| Scenario Feature Measure | Cubic Foot Storage |
| Scenario Unit | Cubic Foot |
| Scenario Typical Size | 11200 |

### Cost Summary:

| Cost Category | Scenario Cost | Scenario Cost/Unit |
|---|---|---|
| Materials | $3,234.32 | $0.29 |
| Equipment/Installation | $9,453.27 | $0.84 |
| Labor | $1,792.80 | $0.16 |
| Mobilization | $406.10 | $0.04 |
| Acquisition of Technical Knowledge | $0.00 | $0.00 |
| Foregone Income | $0.00 | $0.00 |
| Total | $14,886.49 | $1.33 |

### Cost Details:

| Cost Category | Component ID | Component Name | Component Description | Unit | Price ($/unit) | Quantity | Cost |
|---|---|---|---|---|---|---|---|
| Materials | 1044 | Dimension Lumber, Treated | Treated dimension lumber with nominal thickness equal or less than 2". Includes lumber and fasteners | Board Foot | $0.71 | 1960 | $1,391.60 |
| Materials | 1609 | Lumber, planks, posts and timbers, treated | Treated dimension lumber with nominal thickness greater than 2". Includes lumber and fasteners. Does not include labor. | Board Foot | $1.17 | 936 | $1,095.12 |
| Materials | 46 | Aggregate, Gravel, Graded | Gravel, includes materials, equipment and labor to transport and place. Includes washed and unwashed gravel. | Cubic yard | $26.70 | 28 | $747.60 |
| Equipment/Installation | 37 | Concrete, CIP, slab on grade, reinforced | Steel reinforced concrete formed and cast-in-placed 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 | $255.77 | 35 | $8,951.95 |
| Equipment/Installation | 49 | Earthfill, Roller Compacted | Earthfill, roller or machine compacted, includes equipment and labor | Cubic yard | $3.92 | 83 | $325.36 |
| Equipment/Installation | 48 | Excavation, Common Earth, side cast, small equipment | Bulk excavation and side casting of common earth with hydraulic excavator with less than 1 CY capacity. Includes equipment and labor. | Cubic yard | $2.12 | 83 | $175.96 |
| 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 | $19.92 | 90 | $1,792.80 |
| Mobilization | 1139 | Mobilization, medium equipment | Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds. | Each | $203.05 | 2 | $406.10 |

## Scenario Worksheet

### Practice and Scenario Description:

| Information Type | Data |
|---|---|
| Region | Corn Belt |
| State | Ohio |
| Discipline Group | Environmental Engineering |
| Practice Code/Name | 313 - Waste Storage Facility |
| Scenario ID | 1 |
| Scenario Name | Earthen Storage Facility -Onsite Borrow |
| Scenario Description | An earthen waste impoundment constructed with cuts and fills balanced such that one-half of the impoundment depth is excavated and the remainder of the storage is created with the embankment. The structure is constructed with on site material to store wastes such as manure, wastewater, and contaminated runoff as part of an agricultural waste management system. This practice will address soil and water quality by reducing the pollution potential for surface water and groundwater quality degradation. Payment includes materials and equipment necessary for construction of the storage structure. If a roof is to be included in the installation, refer to Practice Standard 367 - Roofs and Covers. If an earthen storage liner is to be included in the installation, refer to associated Practice Standards 521A, 521B, 521C, or 521D. Vehicular and equipment access is addressed in Heavy Use Area Protection (561). Adequately protect liner at agitation and access points.<br><br>Potential Associated Practices: Pond Sealing or Lining, Bentonite Sealant (521C), Pond Sealing or Lining, Compacted Clay Treatment (521D), Pond Sealing or Lining, Flexible Membrane (521A), Pond Sealing or Lining, Soil Dispersant (521B), Fence (382), Critical Area Planting (342), Nutrient Management (590), Waste Transfer (634), Heavy Use Area Protection (561), Roofs and Covers (367), and Solid/Liquid Waste Separation Facility (632), Waste Treatment (629) . |
| Before Practice Situation | Operator presently has a confined animal feeding operation without a waste management system adequate to handle the waste stream leaving the animal production facilities. Manure and other agricultural waste by-products are not being utilized or controlled in an environmentally safe manner. The wastes are either accumulating at the source, or are being transported but not properly utilized or disposed of. This situation poses an environmentally threat of excessive nutrients, organics, and pathogens being transported into surface and groundwater resources. |
| After Practice Situation | An earthen storage structure constructed from on-site material provides an environmentally safe facility for storing manure and other agricultural waste by-products. This facility provides the landowner a means of storing waste until it can be utilized in a proper manner in accordance with a nutrient management plan.<br>Typical design size: design storage volume 121,200 ft3; 150'X150' (top); 3:1 inside and outside side slopes; embankment topwidth = 10'; compaction ratio = 1.1; total depth = 10' (design depth = 8.5'); (not inclued in volume - 1' freeboard and 0.5' sludge accumulation); embankment volume = 4*160*((10+70)/2)*10*1.1 |
| Scenario Feature Measure | Design Storage Volume |
| Scenario Unit | Cubic Foot |
| Scenario Typical Size | 121,200 |

### Cost Summary:

| Cost Category | Scenario Cost | Scenario Cost/Unit |
|---|---|---|
| Materials | $26.80 | $0.00 |
| Equipment/Installation | $21,561.71 | $0.18 |
| Labor | $0.00 | $0.00 |
| Mobilization | $812.20 | $0.01 |
| Acquisition of Technical Knowledge | $0.00 | $0.00 |
| Foregone Income | $0.00 | $0.00 |
| Total | $22,400.71 | $0.18 |

### Cost Details:

| Cost Category | Component ID | Component Name | Component Description | Unit | Price ($/unit) | Quantity | Cost |
|---|---|---|---|---|---|---|---|
| Materials | 1120 | Structural steel tubing, 2" diameter | Structural steel tubing, 2" diameter, 1/8" wall thickness, materials only | Foot | $3.35 | 8 | $26.80 |
| Equipment/Installation | 1199 | Stripping and stockpiling, topsoil | Stripping and stockpiling of topsoil adjacent to stripping area. Includes equipment and labor. | Cubic Yard | $0.77 | 741 | $570.57 |
| Equipment/Installation | 1223 | Excavation, common earth, large equipment, 150 ft | Bulk excavation of common earth including sand and gravel with dozer >100 HP with average push distance of 150 feet. Includes equipment and labor. | Cubic Yard | $3.26 | 2519 | $8,211.94 |
| Equipment/Installation | 49 | Earthfill, Roller Compacted | Earthfill, roller or machine compacted, includes equipment and labor | Cubic yard | $3.92 | 3260 | $12,779.20 |
| Mobilization | 1139 | Mobilization, medium equipment | Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds. | Each | $203.05 | 4 | $812.20 |

## Scenario Worksheet

### Practice and Scenario Description:

| Information Type | Data |
|---|---|
| Region | Corn Belt |
| State | Ohio |
| Discipline Group | Range/Pasture Grazing |
| Practice Code/Name | 314 - Brush Management |
| Scenario ID | 1 |
| Scenario Name | Biological Control with Grazing Animals |
| Scenario Description | The removal, reduction or manipulation of non-herbaceous plants on non-cropland using biological management in the form of grazing with sheep, goats, or other grazing animal that will graze on the undesireable non-herbaceous species. Payment is based on impacted acres only. Payment is based on the use of goats for moderate brush problems where a stocking rate equivalent of 100 goats can adequately clear 1 acre of brush in one day (or equivalent stocking; for example 15 goats for 1 week to clear an acre of brush), or equivalent number of other livestock. Costs are related to transportation of livestock, setting up temporary fencing and/or watering system.Cost represents typical situations for conventional, organic, and transitioning to organic producers. |
| Before Practice Situation | Non-cropland acres consisting of a percentage of undesirable species such as (but not limited to) Amur cork tree, Siberian elm, callery pear, autumn olive, multiflora rose, barberry, burning bush, honeysuckle, or periwinkle that must be controlled. Undesirable species can contribute to degraded plant condition, inadequate feed & forage, and potential animal health issues. |
| After Practice Situation | Undesireable non-herbaceous species are controlled with grazing by goats. |
| Scenario Feature Measure | Acres treated |
| Scenario Unit | Acre |
| Scenario Typical Size | 1 |

### Cost Summary:

| Cost Category | Scenario Cost | Scenario Cost/Unit |
|---|---|---|
| Materials | $100.00 | $100.00 |
| Equipment/Installation | $118.42 | $118.42 |
| Labor | $159.36 | $159.36 |
| Mobilization | $39.80 | $39.80 |
| Acquisition of Technical Knowledge | $0.00 | $0.00 |
| Foregone Income | $0.00 | $0.00 |
| Total | $417.58 | $417.58 |

### Cost Details:

| Cost Category | Component ID | Component Name | Component Description | Unit | Price ($/unit) | Quantity | Cost |
|---|---|---|---|---|---|---|---|
| Materials | 1130 | Animals used for biological weed control | Goats, Llamas, Sheep - Includes all support: fence, water, dog, mob, etc. | Head per day | $1.00 | 100 | $100.00 |
| Equipment/Installation | 961 | Trucking, moving livestock to new paddock | Livestock transportation costs to implement a grazing rotation using a gooseneck trailer 6'8" x 24'. Includes equipment, power unit and labor costs. | Mile | $3.37 | 20 | $67.40 |
| Equipment/Installation | 939 | Truck, Pickup | Equipment and power unit costs. Labor not included. | Hour | $25.51 | 2 | $51.02 |
| 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 | $19.92 | 8 | $159.36 |
| Mobilization | 1142 | Mobilization, General labor | Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc. | Hour | $19.90 | 2 | $39.80 |

## Scenario Worksheet

### Practice and Scenario Description:

| Information Type | Data |
|---|---|
| Region | Corn Belt |
| State | Ohio |
| Discipline Group | Range/Pasture Grazing |
| Practice Code/Name | 314 - Brush Management |
| Scenario ID | 4 |
| Scenario Name | High Brush Management |
| Scenario Description | High brush management is used on non-cropland acres (including forestland, pasture, and wildlife areas) where 40%-60% canopy cover across the treatment area is in undesireable non-herbaceous cover, or the treatment area is on land with 18% - 25% slopes on average regardless of percent cover of undesireable species. Payment is based on impacted acres only. Treatment may consist of chemical, mechanical, manual, or a combination of methods. Cost represents typical situations for conventional, organic, and transitioning to organic producers. For organic land, chemical applications must be OMRI approved chemicals. |
| Before Practice Situation | Non-cropland acres consisting of a percentage of undesirable species such as (but not limited to) Tree of heaven, Paulownia (princess tree), honeysuckle, Japanese knotweed, privet, or wintercreeper, that must be controlled. Undesirable species can contribute to degraded plant condition, inadequate feed & forage, and potential animal health issues. |
| After Practice Situation | Undesireable non-herbaceous species are controlled with a combination of manual chainsawing, pass with a brush hog over the treatment area, and spot chemcial treatment. The treatment area is mechanically treated early in the growing season to reduce above ground biomass. The treated plants will readily resprout, and after adequate re-sprouting occurs herbicide will be applied to the new growth. This combined treatment will allow better access for the herbicide application equipment, better coverage on target plants, and less overall herbicide applied. |
| Scenario Feature Measure | Acres planned |
| Scenario Unit | Acre |
| Scenario Typical Size | 25 |

### Cost Summary:

| Cost Category | Scenario Cost | Scenario Cost/Unit |
|---|---|---|
| Materials | $915.15 | $36.61 |
| Equipment/Installation | $2,264.46 | $90.58 |
| Labor | $1,294.80 | $51.79 |
| Mobilization | $112.44 | $4.50 |
| Acquisition of Technical Knowledge | $0.00 | $0.00 |
| Foregone Income | $0.00 | $0.00 |
| Total | $4,586.85 | $183.47 |

### Cost Details:

| Cost Category | Component ID | Component Name | Component Description | Unit | Price ($/unit) | Quantity | Cost |
|---|---|---|---|---|---|---|---|
| Materials | 338 | Herbicide, Triclopyor | Triclopyr butoxyethyl ester (BEE) is a selective foliar and root absorbed, translocated herbicide used for control of woody and broadleaf plants. Product is typically used in these practices 595, 314, 645 and 666. Refer to WIN-PST for product names and active ingredients. Materials only. | Acre | $61.01 | 15 | $915.15 |
| Equipment/Installation | 964 | Chemical, spot treatment, single stem application | Ground applied chemical to individual plants or group of plants, e.g., backpack sprayer treatment. Equipment and labor cost included. | Hour | $55.87 | 24 | $1,340.88 |
| Equipment/Installation | 940 | Mower, Bush Hog | Equipment and power unit costs. Labor not included. | Hour | $41.52 | 20 | $830.40 |
| Equipment/Installation | 939 | Truck, Pickup | Equipment and power unit costs. Labor not included. | Hour | $25.51 | 2 | $51.02 |
| Equipment/Installation | 937 | Chainsaw | Equipment and power unit costs. Labor not included. | Hour | $5.27 | 8 | $42.16 |
| 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 | $19.92 | 65 | $1,294.80 |
| Mobilization | 1137 | Mobilization, very small equipment | Equipment that is small enough to be transported by a pick-up truck with typical weights less than 3,500 pounds. Can be multiple pieces of equipment if all hauled simultaneously. | Each | $56.22 | 2 | $112.44 |

## Scenario Worksheet

### Practice and Scenario Description:

| Information Type | Data |
|---|---|
| Region | Corn Belt |
| State | Ohio |
| Discipline Group | Range/Pasture Grazing |
| Practice Code/Name | 314 - Brush Management |
| Scenario ID | 2 |
| Scenario Name | Light Brush Management |
| Scenario Description | Light brush management is used on non-cropland acres (including forestland, pasture, and wildlife areas) where less than 10% canopy cover across the treatment area is in undesireable non-herbaceous cover, and the treatment area is less than 18% slope on average. Payment is based on impacted acres only. Treatment may consist of chemical, mechanical, manual, or a combination of methods. Cost represents typical situations for conventional, organic, and transitioning to organic producers. For organic land, chemical applications must be OMRI approved chemicals. |
| Before Practice Situation | Non-cropland acres consisting of a percentage of undesirable species such as (but not limited to) Amur cork tree, Siberian elm, callery pear, autumn olive, multiflora rose, barberry, burning bush, honeysuckle, or periwinkle that must be controlled. Undesirable species can contribute to degraded plant condition, inadequate feed & forage, and potential animal health issues. |
| After Practice Situation | Undesireable non-herbaceous species are controlled with a pass with a brush hog over the treatment area followed by spot chemcial treatment. The treatment area is mechanically treated early in the growing season to reduce above ground biomass. The treated plants will readily resprout, and after adequate re-sprouting occurs herbicide will be applied to the new growth. This combined treatment will allow better access for the herbicide application equipment, better coverage on target plants, and less overall herbicide applied. |
| Scenario Feature Measure | Acres treated |
| Scenario Unit | Acre |
| Scenario Typical Size | 25 |

### Cost Summary:

| Cost Category | Scenario Cost | Scenario Cost/Unit |
|---|---|---|
| Materials | $152.53 | $6.10 |
| Equipment/Installation | $747.10 | $29.88 |
| Labor | $159.36 | $6.37 |
| Mobilization | $112.44 | $4.50 |
| Acquisition of Technical Knowledge | $0.00 | $0.00 |
| Foregone Income | $0.00 | $0.00 |
| Total | $1,171.43 | $46.86 |

### Cost Details:

| Cost Category | Component ID | Component Name | Component Description | Unit | Price ($/unit) | Quantity | Cost |
|---|---|---|---|---|---|---|---|
| Materials | 338 | Herbicide, Triclopyor | Triclopyr butoxyethyl ester (BEE) is a selective foliar and root absorbed, translocated herbicide used for control of woody and broadleaf plants. Product is typically used in these practices 595, 314, 645 and 666. Refer to WIN-PST for product names and active ingredients. Materials only. | Acre | $61.01 | 2.5 | $152.53 |
| Equipment/Installation | 964 | Chemical, spot treatment, single stem application | Ground applied chemical to individual plants or group of plants, e.g., backpack sprayer treatment. Equipment and labor cost included. | Hour | $55.87 | 8 | $446.96 |
| Equipment/Installation | 940 | Mower, Bush Hog | Equipment and power unit costs. Labor not included. | Hour | $41.52 | 6 | $249.12 |
| Equipment/Installation | 939 | Truck, Pickup | Equipment and power unit costs. Labor not included. | Hour | $25.51 | 2 | $51.02 |
| 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 | $19.92 | 8 | $159.36 |
| Mobilization | 1137 | Mobilization, very small equipment | Equipment that is small enough to be transported by a pick-up truck with typical weights less than 3,500 pounds. Can be multiple pieces of equipment if all hauled simultaneously. | Each | $56.22 | 2 | $112.44 |

## Scenario Worksheet

### Practice and Scenario Description:

| Information Type | Data |
|---|---|
| Region | Corn Belt |
| State | Ohio |
| Discipline Group | Range/Pasture Grazing |
| Practice Code/Name | 314 - Brush Management |
| Scenario ID | 3 |
| Scenario Name | Medium Brush Management |
| Scenario Description | Medium brush management is used on non-cropland acres (including forestland, pasture, and wildlife areas) where 10% - 39% canopy cover across the treatment area is in undesireable non-herbaceous cover, and the treatment area is less than 18% slope on average. Payment is based on impacted acres only. Treatment may consist of chemical, mechanical, manual, or a combination of methods. Cost represents typical situations for conventional, organic, and transitioning to organic producers. For organic land, chemical applications must be OMRI approved chemicals. |
| Before Practice Situation | Non-cropland acres consisting of a percentage of undesirable species such as (but not limited to) Amur cork tree, Siberian elm, callery pear, autumn olive, multiflora rose, barberry, burning bush, honeysuckle, or periwinkle that must be controlled. Undesirable species can contribute to degraded plant condition, inadequate feed & forage, and potential animal health issues. |
| After Practice Situation | Undesireable non-herbaceous species are controlled with a pass with a brush hog over the treatment area followed by spot chemcial treatment. The treatment area is mechanically treated early in the growing season to reduce above ground biomass. The treated plants will readily resprout, and after adequate re-sprouting occurs herbicide will be applied to the new growth. This combined treatment will allow better access for the herbicide application equipment, better coverage on target plants, and less overall herbicide applied. |
| Scenario Feature Measure | Acres planned |
| Scenario Unit | Acre |
| Scenario Typical Size | 25 |

### Cost Summary:

| Cost Category | Scenario Cost | Scenario Cost/Unit |
|---|---|---|
| Materials | $457.58 | $18.30 |
| Equipment/Installation | $1,107.96 | $44.32 |
| Labor | $278.88 | $11.16 |
| Mobilization | $112.44 | $4.50 |
| Acquisition of Technical Knowledge | $0.00 | $0.00 |
| Foregone Income | $0.00 | $0.00 |
| Total | $1,956.86 | $78.27 |

### Cost Details:

| Cost Category | Component ID | Component Name | Component Description | Unit | Price ($/unit) | Quantity | Cost |
|---|---|---|---|---|---|---|---|
| Materials | 338 | Herbicide, Triclopyor | Triclopyr butoxyethyl ester (BEE) is a selective foliar and root absorbed, translocated herbicide used for control of woody and broadleaf plants. Product is typically used in these practices 595, 314, 645 and 666. Refer to WIN-PST for product names and active ingredients. Materials only. | Acre | $61.01 | 7.5 | $457.58 |
| Equipment/Installation | 964 | Chemical, spot treatment, single stem application | Ground applied chemical to individual plants or group of plants, e.g., backpack sprayer treatment. Equipment and labor cost included. | Hour | $55.87 | 10 | $558.70 |
| Equipment/Installation | 940 | Mower, Bush Hog | Equipment and power unit costs. Labor not included. | Hour | $41.52 | 12 | $498.24 |
| Equipment/Installation | 939 | Truck, Pickup | Equipment and power unit costs. Labor not included. | Hour | $25.51 | 2 | $51.02 |
| 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 | $19.92 | 14 | $278.88 |
| Mobilization | 1137 | Mobilization, very small equipment | Equipment that is small enough to be transported by a pick-up truck with typical weights less than 3,500 pounds. Can be multiple pieces of equipment if all hauled simultaneously. | Each | $56.22 | 2 | $112.44 |

## Scenario Worksheet

### Practice and Scenario Description:

| Information Type | Data |
|---|---|
| Region | Corn Belt |
| State | Ohio |
| Discipline Group | Range/Pasture Grazing |
| Practice Code/Name | 314 - Brush Management |
| Scenario ID | 5 |
| Scenario Name | Very High Brush Management |
| Scenario Description | High brush management is used on non-cropland acres (including forestland, pasture, and wildlife areas) where greater than 60% canopy cover across the treatment area is in undesireable non-herbaceous cover, or the treatment area is on land with greater than 25% slopes on average regardless of percent cover of undesireable species. Payment is based on impacted acres only. Treatment may consist of chemical, mechanical, manual, or a combination of methods. Cost represents typical situations for conventional, organic, and transitioning to organic producers. For organic land, chemical applications must be OMRI approved chemicals. |
| Before Practice Situation | Non-cropland acres consisting of a percentage of undesirable species such as (but not limited to) Tree of heaven, Paulownia (princess tree), honeysuckle, Japanese knotweed, privet, or wintercreeper, that must be controlled. Undesirable species can contribute to degraded plant condition, inadequate feed & forage, and potential animal health issues. |
| After Practice Situation | Undesireable non-herbaceous species are controlled with a combination of manual chainsawing, pass with a brush hog over the treatment area, and spot chemcial treatment. The treatment area is mechanically treated early in the growing season to reduce above ground biomass. The treated plants will readily resprout, and after adequate re-sprouting occurs herbicide will be applied to the new growth. This combined treatment will allow better access for the herbicide application equipment, better coverage on target plants, and less overall herbicide applied. |
| Scenario Feature Measure | Acres planned |
| Scenario Unit | Acre |
| Scenario Typical Size | 25 |

### Cost Summary:

| Cost Category | Scenario Cost | Scenario Cost/Unit |
|---|---|---|
| Materials | $1,525.25 | $61.01 |
| Equipment/Installation | $4,052.02 | $162.08 |
| Labor | $1,752.96 | $70.12 |
| Mobilization | $112.44 | $4.50 |
| Acquisition of Technical Knowledge | $0.00 | $0.00 |
| Foregone Income | $0.00 | $0.00 |
| Total | $7,442.67 | $297.71 |

### Cost Details:

| Cost Category | Component ID | Component Name | Component Description | Unit | Price ($/unit) | Quantity | Cost |
|---|---|---|---|---|---|---|---|
| Materials | 338 | Herbicide, Triclopyor | Triclopyr butoxyethyl ester (BEE) is a selective foliar and root absorbed, translocated herbicide used for control of woody and broadleaf plants. Product is typically used in these practices 595, 314, 645 and 666. Refer to WIN-PST for product names and active ingredients. Materials only. | Acre | $61.01 | 25 | $1,525.25 |
| Equipment/Installation | 964 | Chemical, spot treatment, single stem application | Ground applied chemical to individual plants or group of plants, e.g., backpack sprayer treatment. Equipment and labor cost included. | Hour | $55.87 | 40 | $2,234.80 |
| Equipment/Installation | 940 | Mower, Bush Hog | Equipment and power unit costs. Labor not included. | Hour | $41.52 | 40 | $1,660.80 |
| Equipment/Installation | 939 | Truck, Pickup | Equipment and power unit costs. Labor not included. | Hour | $25.51 | 2 | $51.02 |
| Equipment/Installation | 937 | Chainsaw | Equipment and power unit costs. Labor not included. | Hour | $5.27 | 20 | $105.40 |
| 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 | $19.92 | 88 | $1,752.96 |
| Mobilization | 1137 | Mobilization, very small equipment | Equipment that is small enough to be transported by a pick-up truck with typical weights less than 3,500 pounds. Can be multiple pieces of equipment if all hauled simultaneously. | Each | $56.22 | 2 | $112.44 |

## Scenario Worksheet

### Practice and Scenario Description:

| Information Type | Data |
|---|---|
| Region | Corn Belt |
| State | Ohio |
| Discipline Group | Range/Pasture Grazing |
| Practice Code/Name | 315 - Herbaceous Weed Control |
| Scenario ID | 7 |
| Scenario Name | Herbaceous Weed Control - Aquatic Areas |
| Scenario Description | Control of aquatic weed infestations, such as phragmites, reeds canary grass, or cattails, in wetland areas using multiple chemical applications. Due to moist soil conditions, herbicide is applied with an ATV and spot sprayer to avoid excessive disturbance to the site. Cost represents typical situations for conventional, organic, and transitioning to organic producers. Payment is based on impacted acres only. |
| Before Practice Situation | Area consists of aquatic herbaceous weed species such as phragmites, reeds canary grass, cattails, etc. that exceed the desirable ecological site condition promoting noxious and invasive species, increasing risk of soil erosion and degrading wildlife habitat. |
| After Practice Situation | Herbaceous weeds are removed to achieve the desirable plant community based on species composition, structure, density, and canopy cover or height. Ecological site condition is progressing in an upward trend, hydrology and plant health and vigor is returning to near normal levels, and wildlife habitat is improved. |
| Scenario Feature Measure | Acres Treated |
| Scenario Unit | Acre |
| Scenario Typical Size | 5 |

### Cost Summary:

| Cost Category | Scenario Cost | Scenario Cost/Unit |
|---|---|---|
| Materials | $68.40 | $13.68 |
| Equipment/Installation | $1,215.68 | $243.14 |
| Labor | $0.00 | $0.00 |
| Mobilization | $112.44 | $22.49 |
| Acquisition of Technical Knowledge | $0.00 | $0.00 |
| Foregone Income | $0.00 | $0.00 |
| Total | $1,396.52 | $279.30 |

### Cost Details:

| Cost Category | Component ID | Component Name | Component Description | Unit | Price ($/unit) | Quantity | Cost |
|---|---|---|---|---|---|---|---|
| Materials | 346 | Herbicide, Glyphosate-ipa salt 4SL | Product is typically used for aquatic usage. Product Name: Rodeo | Acre | $4.56 | 15 | $68.40 |
| Equipment/Installation | 964 | Chemical, spot treatment, single stem application | Ground applied chemical to individual plants or group of plants, e.g., backpack sprayer treatment. Equipment and labor cost included. | Hour | $54.03 | 22.5 | $1,215.68 |
| Mobilization | 1137 | Mobilization, very small equipment | Equipment that is small enough to be transported by a pick-up truck with typical weights less than 3,500 pounds. Can be multiple pieces of equipment if all hauled simultaneously. | Each | $56.22 | 2 | $112.44 |

## Scenario Worksheet

### Practice and Scenario Description:

| Information Type | Data |
|---|---|
| Region | Corn Belt |
| State | Ohio |
| Discipline Group | Range/Pasture Grazing |
| Practice Code/Name | 315 - Herbaceous Weed Control |
| Scenario ID | 1 |
| Scenario Name | Biological Control with Grazing Animals |
| Scenario Description | Management of herbaceous plant species through the use of livestock such as goats, sheep or other grazing animal that will graze on the undesireable herbaceous species. Payment is based on impacted acres only. Payment is based on the use of goats for problems where a stocking rate equivalent of 50 goats can adequately clear 1 acre of undesireable herbaceous species in one day (or equivalent stocking; for example 5 goats for 1 week to clear an acre), or equivalent number of other livestock. Costs are related to transportation of livestock, setting up temporary fencing and/or watering system.Cost represents typical situations for conventional, organic, and transitioning to organic producers. |
| Before Practice Situation | Area consists of herbaceous weed species such as sericia lespedeza, japanese stilt grass, periwinkle, ironweed, ragweed, etc. that exceed the desirable ecological site condition degrading forage quality, promoting noxious and invasive species, increasing risk of soil erosion and degrading wildlife habitat. |
| After Practice Situation | Livestock grazing is managed to limit the regrowth of herbaceous weed species and achieve a desirable plant community based on species composition, structure, density, and canopy cover or height. Ecological site condition is progressing in an upward trend and plant health and vigor is returning to near normal levels. |
| Scenario Feature Measure | Acres teated |
| Scenario Unit | Acre |
| Scenario Typical Size | 1 |

### Cost Summary:

| Cost Category | Scenario Cost | Scenario Cost/Unit |
|---|---|---|
| Materials | $50.00 | $50.00 |
| Equipment/Installation | $95.42 | $95.42 |
| Labor | $159.36 | $159.36 |
| Mobilization | $39.80 | $39.80 |
| Acquisition of Technical Knowledge | $0.00 | $0.00 |
| Foregone Income | $0.00 | $0.00 |
| Total | $344.58 | $344.58 |

### Cost Details:

| Cost Category | Component ID | Component Name | Component Description | Unit | Price ($/unit) | Quantity | Cost |
|---|---|---|---|---|---|---|---|
| Materials | 1130 | Animals used for biological weed control | Goats, Llamas, Sheep - Includes all support: fence, water, dog, mob, etc. | Head per day | $1.00 | 50 | $50.00 |
| Equipment/Installation | 961 | Trucking, moving livestock to new paddock | "Livestock transportation costs to implement a grazing rotation using a gooseneck trailer 6'8"" x 24'. Equipment and labor costs included." | Mile | $2.22 | 20 | $44.40 |
| Equipment/Installation | 939 | Truck, Pickup | Equipment and power unit costs. Labor not included. | Hour | $25.51 | 2 | $51.02 |
| 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 | $19.92 | 8 | $159.36 |
| Mobilization | 1142 | Mobilization, General labor | Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc. | Hour | $19.90 | 2 | $39.80 |

## Scenario Worksheet

### Practice and Scenario Description:

| Information Type | Data |
|---|---|
| Region | Corn Belt |
| State | Ohio |
| Discipline Group | Range/Pasture Grazing |
| Practice Code/Name | 315 - Herbaceous Weed Control |
| Scenario ID | 5 |
| Scenario Name | Herbaceous Weed Control - Blanket Treatment Multi Pass |
| Scenario Description | Blanket treatment multi pass herbaceous weed control is used on non-cropland acres (including forestland, pasture, and wildlife areas) where a blanket treatment approach is acceptable and mutiple passes or approaches are needed to control the non-desireable weeds. Payment is based on impacted acres only. The practice entails the treatment of weeds using multiple blanket chemical applications or multiple mechanical brush hog operations, or a combination of chemical and mechanical. Cost represents typical situations for conventional, organic, and transitioning to organic producers. For organic land, chemical applications must be OMRI approved chemicals. |
| Before Practice Situation | Area consists of herbaceous weed species such as sericia lespedeza, japanese stilt grass, periwinkle, ironweed, ragweed, etc. that exceed the desirable ecological site condition degrading forage quality, promoting noxious and invasive species, increasing risk of soil erosion and degrading wildlife habitat. |
| After Practice Situation | Herbaceous weeds are removed to achieve the desirable plant community based on species composition, structure, density, and canopy cover or height. Ecological site condition is progressing in an upward trend, hydrology and plant health and vigor is returning to near normal levels, and wildlife habitat is improved. |
| Scenario Feature Measure | Acres Treated |
| Scenario Unit | Acre |
| Scenario Typical Size | 25 |

### Cost Summary:

| Cost Category | Scenario Cost | Scenario Cost/Unit |
|---|---|---|
| Materials | $3,050.50 | $122.02 |
| Equipment/Installation | $907.52 | $36.30 |
| Labor | $226.70 | $9.07 |
| Mobilization | $322.08 | $12.88 |
| Acquisition of Technical Knowledge | $0.00 | $0.00 |
| Foregone Income | $0.00 | $0.00 |
| Total | $4,506.80 | $180.27 |

### Cost Details:

| Cost Category | Component ID | Component Name | Component Description | Unit | Price ($/unit) | Quantity | Cost |
|---|---|---|---|---|---|---|---|
| Materials | 338 | Herbicide, Triclopyor | Triclopyr butoxyethyl ester (BEE) is a selective foliar and root absorbed, translocated herbicide used for control of woody and broadleaf plants. Product is typically used in these practices 595, 314, 645 and 666. Product Name: Remedy, Element 4, Garlon | Acre | $61.01 | 50 | $3,050.50 |
| Equipment/Installation | 948 | Chemical, ground application | Chemical application performed by ground equipment. Equipment and labor costs included. | Acre | $6.50 | 50 | $325.00 |
| Equipment/Installation | 963 | Tractor, agricultural, 60 HP | Agricultural tractor with horsepower range of 50 to 90. Equipment and power unit costs. Labor not included. | Hour | $19.28 | 12 | $231.36 |
| Equipment/Installation | 939 | Truck, Pickup | Equipment and power unit costs. Labor not included. | Hour | $25.51 | 4 | $102.04 |
| Equipment/Installation | 940 | Mower, Bush Hog | Equipment and power unit costs. Labor not included. | Hour | $41.52 | 6 | $249.12 |
| Labor | 232 | Equipment Operators, Light | Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers | Hour | $22.67 | 10 | $226.70 |
| Mobilization | 1138 | Mobilization, small equipment | Equipment <70 HP but can't be transported by a pick-up truck or with typical weights between 3,500 to 14,000 pounds. | Each | $138.58 | 2 | $277.16 |
| Mobilization | 1143 | Mobilization, Light Equipment Operator | Mobilization of light equipment operators: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers | Hour | $22.46 | 2 | $44.92 |

## Scenario Worksheet

### Practice and Scenario Description:

| Information Type | Data |
|---|---|
| Region | Corn Belt |
| State | Ohio |
| Discipline Group | Range/Pasture Grazing |
| Practice Code/Name | 315 - Herbaceous Weed Control |
| Scenario ID | 4 |
| Scenario Name | Herbaceous Weed Control - Blanket Treatment One Pass |
| Scenario Description | Blanket treatment one pass herbaceous weed control is used on non-cropland acres (including forestland, pasture, and wildlife areas) where a blanket treatment approach is acceptable and the non-desireable weeds can be controlled with one treatment. Payment is based on impacted acres only. The practice entails the treatment of weeds using a blanket chemical application or mechanical brush hog operation. Cost represents typical situations for conventional, organic, and transitioning to organic producers. For organic land, chemical applications must be OMRI approved chemicals. |
| Before Practice Situation | Area consists of herbaceous weed species such as sericia lespedeza, japanese stilt grass, periwinkle, ironweed, ragweed, etc. that exceed the desirable ecological site condition degrading forage quality, promoting noxious and invasive species, increasing risk of soil erosion and degrading wildlife habitat. |
| After Practice Situation | Herbaceous weeds are removed to achieve the desirable plant community based on species composition, structure, density, and canopy cover or height. Ecological site condition is progressing in an upward trend, hydrology and plant health and vigor is returning to near normal levels, and wildlife habitat is improved. |
| Scenario Feature Measure | Acres Treated |
| Scenario Unit | Acre |
| Scenario Typical Size | 25 |

### Cost Summary:

| Cost Category | Scenario Cost | Scenario Cost/Unit |
|---|---|---|
| Materials | $1,525.25 | $61.01 |
| Equipment/Installation | $329.20 | $13.17 |
| Labor | $136.02 | $5.44 |
| Mobilization | $322.08 | $12.88 |
| Acquisition of Technical Knowledge | $0.00 | $0.00 |
| Foregone Income | $0.00 | $0.00 |
| Total | $2,312.55 | $92.50 |

### Cost Details:

| Cost Category | Component ID | Component Name | Component Description | Unit | Price ($/unit) | Quantity | Cost |
|---|---|---|---|---|---|---|---|
| Materials | 338 | Herbicide, Triclopyor | Triclopyr butoxyethyl ester (BEE) is a selective foliar and root absorbed, translocated herbicide used for control of woody and broadleaf plants. Product is typically used in these practices 595, 314, 645 and 666. Product Name: Remedy, Element 4, Garlon | Acre | $61.01 | 25 | $1,525.25 |
| Equipment/Installation | 948 | Chemical, ground application | Chemical application performed by ground equipment. Equipment and labor costs included. | Acre | $6.50 | 25 | $162.50 |
| Equipment/Installation | 963 | Tractor, agricultural, 60 HP | Agricultural tractor with horsepower range of 50 to 90. Equipment and power unit costs. Labor not included. | Hour | $19.28 | 6 | $115.68 |
| Equipment/Installation | 939 | Truck, Pickup | Equipment and power unit costs. Labor not included. | Hour | $25.51 | 2 | $51.02 |
| Labor | 232 | Equipment Operators, Light | Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers | Hour | $22.67 | 6 | $136.02 |
| Mobilization | 1138 | Mobilization, small equipment | Equipment <70 HP but can't be transported by a pick-up truck or with typical weights between 3,500 to 14,000 pounds. | Each | $138.58 | 2 | $277.16 |
| Mobilization | 1143 | Mobilization, Light Equipment Operator | Mobilization of light equipment operators: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers | Hour | $22.46 | 2 | $44.92 |

## Scenario Worksheet

### Practice and Scenario Description:

| Information Type | Data |
|---|---|
| Region | Corn Belt |
| State | Ohio |
| Discipline Group | Range/Pasture Grazing |
| Practice Code/Name | 315 - Herbaceous Weed Control |
| Scenario ID | 2 |
| Scenario Name | Herbaceous Weed Control - Light Spot Treatments |
| Scenario Description | Light spot treatment herbaceous weed control is used on non-cropland acres (including forestland, pasture, and wildlife areas) where less than 10% canopy coverage across the treatment area is in undesireable herbaceous cover, or a specific area spot treatment is needed such as creating open ground under a wildlife habitat structure . Payment is based on impacted acres only. The practice entails the treatment of weeds using small equipment (such as an ATV with sprayer) to apply chemicals, or using hand tools (such as axes, shovels, hoes, nippers) to remove or cut off herbaceous plants at or below the root collar. Cost represents typical situations for conventional, organic, and transitioning to organic producers. For organic land, chemical applications must be OMRI approved chemicals. |
| Before Practice Situation | Area consists of herbaceous weed species such as sericia lespedeza, japanese stilt grass, periwinkle, ironweed, ragweed, etc. that exceed the desirable ecological site condition degrading forage quality, promoting noxious and invasive species, increasing risk of soil erosion and degrading wildlife habitat. |
| After Practice Situation | Herbaceous weeds are removed to achieve the desirable plant community based on species composition, structure, density, and canopy cover or height. Ecological site condition is progressing in an upward trend, hydrology and plant health and vigor is returning to near normal levels, and wildlife habitat is improved. |
| Scenario Feature Measure | Acres Treated |
| Scenario Unit | Acre |
| Scenario Typical Size | 25 |

### Cost Summary:

| Cost Category | Scenario Cost | Scenario Cost/Unit |
|---|---|---|
| Materials | $152.53 | $6.10 |
| Equipment/Installation | $483.26 | $19.33 |
| Labor | $39.84 | $1.59 |
| Mobilization | $112.44 | $4.50 |
| Acquisition of Technical Knowledge | $0.00 | $0.00 |
| Foregone Income | $0.00 | $0.00 |
| Total | $788.07 | $31.52 |

### Cost Details:

| Cost Category | Component ID | Component Name | Component Description | Unit | Price ($/unit) | Quantity | Cost |
|---|---|---|---|---|---|---|---|
| Materials | 338 | Herbicide, Triclopyor | Triclopyr butoxyethyl ester (BEE) is a selective foliar and root absorbed, translocated herbicide used for control of woody and broadleaf plants. Product is typically used in these practices 595, 314, 645 and 666. Product Name: Remedy, Element 4, Garlon | Acre | $61.01 | 2.5 | $152.53 |
| Equipment/Installation | 964 | Chemical, spot treatment, single stem application | Ground applied chemical to individual plants or group of plants, e.g., backpack sprayer treatment. Equipment and labor cost included. | Hour | $54.03 | 8 | $432.24 |
| Equipment/Installation | 939 | Truck, Pickup | Equipment and power unit costs. Labor not included. | Hour | $25.51 | 2 | $51.02 |
| 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 | $19.92 | 2 | $39.84 |
| Mobilization | 1137 | Mobilization, very small equipment | Equipment that is small enough to be transported by a pick-up truck with typical weights less than 3,500 pounds. Can be multiple pieces of equipment if all hauled simultaneously. | Each | $56.22 | 2 | $112.44 |

## Scenario Worksheet

### Practice and Scenario Description:

| Information Type | Data |
|---|---|
| Region | Corn Belt |
| State | Ohio |
| Discipline Group | Range/Pasture Grazing |
| Practice Code/Name | 315 - Herbaceous Weed Control |
| Scenario ID | 3 |
| Scenario Name | Herbaceous Weed Control - Medium Spot Treatments |
| Scenario Description | Medium spot treatment herbaceous species management is used on non-cropland acres (including forestland, pasture, and wildlife areas) where greater than 10% canopy coverage across the treatment area is in undesireable herbaceous cover, and spot treatment is preferred over blanket treatment to maintain the persistence of desireable broadleaf and legumes within the treatment area. Payment is based on impacted acres only. The practice entails the treatment of weeds using small equipment (such as an ATV with sprayer) to apply chemicals, or using applicable mechanical methods such as hand tools (such as axes, shovels, hoes, nippers) to remove or cut off herbaceous plants at or below the root collar, and/or spot mowing. Cost represents typical situations for conventional, organic, and transitioning to organic producers. For organic land, chemical applications must be OMRI approved chemicals. |
| Before Practice Situation | Area consists of herbaceous weed species such as sericia lespedeza, japanese stilt grass, periwinkle, ironweed, ragweed, etc. that exceed the desirable ecological site condition degrading forage quality, promoting noxious and invasive species, increasing risk of soil erosion and degrading wildlife habitat. |
| After Practice Situation | Herbaceous weeds are removed to achieve the desirable plant community based on species composition, structure, density, and canopy cover or height. Ecological site condition is progressing in an upward trend, hydrology and plant health and vigor is returning to near normal levels, and wildlife habitat is improved. |
| Scenario Feature Measure | Acres Treated |
| Scenario Unit | Acre |
| Scenario Typical Size | 25 |

### Cost Summary:

| Cost Category | Scenario Cost | Scenario Cost/Unit |
|---|---|---|
| Materials | $793.13 | $31.73 |
| Equipment/Installation | $1,347.74 | $53.91 |
| Labor | $39.84 | $1.59 |
| Mobilization | $112.44 | $4.50 |
| Acquisition of Technical Knowledge | $0.00 | $0.00 |
| Foregone Income | $0.00 | $0.00 |
| Total | $2,293.15 | $91.73 |

### Cost Details:

| Cost Category | Component ID | Component Name | Component Description | Unit | Price ($/unit) | Quantity | Cost |
|---|---|---|---|---|---|---|---|
| Materials | 338 | Herbicide, Triclopyor | Triclopyr butoxyethyl ester (BEE) is a selective foliar and root absorbed, translocated herbicide used for control of woody and broadleaf plants. Product is typically used in these practices 595, 314, 645 and 666. Product Name: Remedy, Element 4, Garlon | Acre | $61.01 | 13 | $793.13 |
| Equipment/Installation | 964 | Chemical, spot treatment, single stem application | Ground applied chemical to individual plants or group of plants, e.g., backpack sprayer treatment. Equipment and labor cost included. | Hour | $54.03 | 24 | $1,296.72 |
| Equipment/Installation | 939 | Truck, Pickup | Equipment and power unit costs. Labor not included. | Hour | $25.51 | 2 | $51.02 |
| 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 | $19.92 | 2 | $39.84 |
| Mobilization | 1137 | Mobilization, very small equipment | Equipment that is small enough to be transported by a pick-up truck with typical weights less than 3,500 pounds. Can be multiple pieces of equipment if all hauled simultaneously. | Each | $56.22 | 2 | $112.44 |

## Scenario Worksheet

### Practice and Scenario Description:

| Information Type | Data |
|---|---|
| Region | Corn Belt |
| State | Ohio |
| Discipline Group | Range/Pasture Grazing |
| Practice Code/Name | 315 - Herbaceous Weed Control |
| Scenario ID | 6 |
| Scenario Name | Tree & Shrub Post-planting Weed Control |
| Scenario Description | Treatment takes place in areas where newly planted trees and/or shrubs are experiencing encroachment by grass and weed competition. Chemcial treatment is needed to ensure the successful establishment of desirable woody species through the application of appropriate herbicides via directional spray to reduce residual effects on planted trees and/or shrubs. Areas to be treated tend to be small and isolated, resulting in high mobilization costs. Due to desirable species mixed with undesirable, caution is needed during treatment. |
| Before Practice Situation | Planted trees or shrubs are experiencing excessive grass and weed competion resulting in poor plant health, reduced growth, and some mortality. |
| After Practice Situation | Desirable vegetation is released from competing vegetation. All undesirable vegetation is removed within 2 feet of desired plants. |
| Scenario Feature Measure | Acres treated |
| Scenario Unit | Acre |
| Scenario Typical Size | 5 |

### Cost Summary:

| Cost Category | Scenario Cost | Scenario Cost/Unit |
|---|---|---|
| Materials | $176.35 | $35.27 |
| Equipment/Installation | $205.36 | $41.07 |
| Labor | $0.00 | $0.00 |
| Mobilization | $389.60 | $77.92 |
| Acquisition of Technical Knowledge | $0.00 | $0.00 |
| Foregone Income | $0.00 | $0.00 |
| Total | $771.31 | $154.26 |

### Cost Details:

| Cost Category | Component ID | Component Name | Component Description | Unit | Price ($/unit) | Quantity | Cost |
|---|---|---|---|---|---|---|---|
| Materials | 340 | Herbicide, Sulfometuron-methyl | Used for the control of annual and perennial grasses and broad leaved weeds in non-crop land. Product is typically used in these practices 645 and 595. Product Name: Oust | Acre | $34.18 | 5 | $170.90 |
| Materials | 1095 | Herbicide, Surfactant | Surfactants reduce the surface tension of water to produce more uniform coverage and penetration of herbicides, and weed killers. Paraffin Based Petroleum Surfactant; Examples: Red River Forestry Oil, Alligare Forestry Oil, Rebound, and Li700. | Acre | $1.09 | 5 | $5.45 |
| Equipment/Installation | 964 | Chemical, spot treatment, single stem application | Ground applied chemical to individual plants or group of plants, e.g., backpack sprayer treatment. Equipment and labor cost included. | Hour | $54.03 | 2 | $108.06 |
| Equipment/Installation | 965 | All terrain vehicles, ATV | Includes equipment and labor costs. | Hour | $27.89 | 2 | $55.78 |
| Equipment/Installation | 940 | Mower, Bush Hog | Equipment and power unit costs. Labor not included. | Hour | $41.52 | 1 | $41.52 |
| Mobilization | 1138 | Mobilization, small equipment | Equipment <70 HP but can't be transported by a pick-up truck or with typical weights between 3,500 to 14,000 pounds. | Each | $138.58 | 2 | $277.16 |
| Mobilization | 1137 | Mobilization, very small equipment | Equipment that is small enough to be transported by a pick-up truck with typical weights less than 3,500 pounds. Can be multiple pieces of equipment if all hauled simultaneously. | Each | $56.22 | 2 | $112.44 |

## Scenario Worksheet

### Practice and Scenario Description:

| Information Type | Data |
|---|---|
| Region | Corn Belt |
| State | Ohio |
| Discipline Group | Environmental Engineering |
| Practice Code/Name | 316 - Animal Mortality Facility |
| Scenario ID | 8 |
| Scenario Name | Static Pile - Concrete Pad with Concrete Bin(s) |
| Scenario Description | This scenario consists of installing concrete bin(s), open on one end, on top of a concrete pad to compost mortality in static piles that have sufficient bulking material to allow natural aeration. Facility sizing parameters include primary and secondary composting area requirements to allow piles to be turned at least once to go into another heat cycle prior to final disposal, typically land application. If a roof is to be included in the installation refer to Practice Standard 367 - Roofs and Covers. Size of facility based on daily mortality and sizing procedures accepted in particular state.<br><br>Potential Associated Practices: Roofs and Cover ( 367 ), Heavy Use Area Protection (561), Critical Area Planting (342), Nutrient Management (590), Access Road (560), Structure for Water Control (587), Roof Runoff Structure (558), Diversion (362), Subsurface Drain (606), Heavy Use Area Protection (561) and Underground Outlet (620). |
| Before Practice Situation | Animal mortality is done in a manner that results in non-point source pollution of excessive nutrients, organics, and pathogens being transported into surface and groundwater resources. Improper operation results in odors and spread of pathogens from incomplete composting, incineration, or interaction with predators. No plan was formulated for both normal and catastrophic mortality events. |
| After Practice Situation | Animal mortality is being done in a manner that prevents non-point source pollution of excessive nutrients, organics, and pathogens being transported into surface and groundwater resources. Proper operation results in little to no odors, complete composting, and protection from predators to minimize pathogen survival or spreading. Selected method for carcass treatment and disposal meet or are permitted by federal, state, and local laws, rules, regulation.<br>This scenario is based upon a 40' x 56' concrete slab with 5' high bin dividers, and 5 bins (configured 2 at 20'x28' and 3 at 20'x18.5'). Preparation includes stripping the top 1' of soil and roll compact same back into sub-floor. The bins are constructed on a 5" concrete slab. Roofed portion is addressed under Roofs and Covers (367). Piles are turned by moving to adjacent bin to go through a second heat cycle prior to final land application. |
| Scenario Feature Measure | Cubic Foot of Storage |
| Scenario Unit | Cubic Foot |
| Scenario Typical Size | 11200 |

### Cost Summary:

| Cost Category | Scenario Cost | Scenario Cost/Unit |
|---|---|---|
| Materials | $747.60 | $0.07 |
| Equipment/Installation | $23,668.87 | $2.11 |
| Labor | $0.00 | $0.00 |
| Mobilization | $406.10 | $0.04 |
| Acquisition of Technical Knowledge | $0.00 | $0.00 |
| Foregone Income | $0.00 | $0.00 |
| Total | $24,822.57 | $2.22 |

### 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 | $26.70 | 28 | $747.60 |
| Equipment/Installation | 49 | Earthfill, Roller Compacted | Earthfill, roller or machine compacted, includes equipment and labor | Cubic yard | $3.92 | 83 | $325.36 |
| Equipment/Installation | 48 | Excavation, Common Earth, side cast, small equipment | Bulk excavation and side casting of common earth with hydraulic excavator with less than 1 CY capacity. Includes equipment and labor. | Cubic yard | $2.12 | 83 | $175.96 |
| 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 | $406.16 | 35 | $14,215.60 |
| Equipment/Installation | 37 | Concrete, CIP, slab on grade, reinforced | Steel reinforced concrete formed and cast-in-placed 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 | $255.77 | 35 | $8,951.95 |
| Mobilization | 1139 | Mobilization, medium equipment | Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds. | Each | $203.05 | 2 | $406.10 |

## Scenario Worksheet

### Practice and Scenario Description:

| Information Type | Data |
|---|---|
| Region | Corn Belt |
| State | Ohio |
| Discipline Group | Environmental Engineering |
| Practice Code/Name | 316 - Animal Mortality Facility |
| Scenario ID | 9 |
| Scenario Name | Static Pile - Concrete Pad with Wood Bin(s) |
| Scenario Description | This scenario consists of installing wooden bin(s), open on one end, on a concrete pad to compost mortality in static piles that have sufficient bulking material to allow natural aeration. Facility sizing parameters include primary and secondary composting area requirements to allow piles to be turned at least once to go into another heat cycle prior to final disposal, typically land application. If a roof is to be included in the installation refer to Practice Standard 367 - Roofs and Covers. Size of facility based on daily mortality and sizing procedures accepted in particular state.<br><br>Potential Associated Practices: Roofs and Cover ( 367 ), Heavy Use Area Protection (561), Critical Area Planting (342), Nutrient Management (590), Access Road (560), Structure for Water Control (587), Roof Runoff Structure (558), Diversion (362), Subsurface Drain (606), Heavy Use Area Protection (561) and Underground Outlet (620). |
| Before Practice Situation | Animal mortality is done in a manner that results in non-point source pollution of excessive nutrients, organics, and pathogens being transported into surface and groundwater resources. Improper operation results in odors and spread of pathogens from incomplete composting, incineration, or interaction with predators. No plan was formulated for both normal and catastrophic mortality events. |
| After Practice Situation | Animal mortality is being done in a manner that prevents non-point source pollution of excessive nutrients, organics, and pathogens being transported into surface and groundwater resources. Proper operation results in little to no odors, complete composting, and protection from predators to minimize pathogen survival or spreading. Selected method for carcass treatment and disposal meet or are permitted by federal, state, and local laws, rules, regulation. This scenario is based upon a 40' x 56' concrete slab with 5' high bin dividers, and 5 bins (configured 2 at 20'x28' and 3 at 20'x18.5'). Preparation includes stripping the top 1' of soil and roll compact same back into sub-floor.<br>Roofed portion is addressed under Roofs and Covers (367). Piles are turned by moving to adjacent bin to go through a second heat cycle prior to final land application. |
| Scenario Feature Measure | Cubic Foot of Storage |
| Scenario Unit | Cubic Foot |
| Scenario Typical Size | 11200 |

### Cost Summary:

| Cost Category | Scenario Cost | Scenario Cost/Unit |
|---|---|---|
| Materials | $3,234.32 | $0.29 |
| Equipment/Installation | $9,453.27 | $0.84 |
| Labor | $1,792.80 | $0.16 |
| Mobilization | $406.10 | $0.04 |
| Acquisition of Technical Knowledge | $0.00 | $0.00 |
| Foregone Income | $0.00 | $0.00 |
| Total | $14,886.49 | $1.33 |

### Cost Details:

| Cost Category | Component ID | Component Name | Component Description | Unit | Price ($/unit) | Quantity | Cost |
|---|---|---|---|---|---|---|---|
| Materials | 1609 | Lumber, planks, posts and timbers, treated | Treated dimension lumber with nominal thickness greater than 2". Includes lumber and fasteners. Does not include labor. | Board Foot | $1.17 | 936 | $1,095.12 |
| Materials | 1044 | Dimension Lumber, Treated | Treated dimension lumber with nominal thickness equal or less than 2". Includes lumber and fasteners | Board Foot | $0.71 | 1960 | $1,391.60 |
| Materials | 46 | Aggregate, Gravel, Graded | Gravel, includes materials, equipment and labor to transport and place. Includes washed and unwashed gravel. | Cubic yard | $26.70 | 28 | $747.60 |
| Equipment/Installation | 49 | Earthfill, Roller Compacted | Earthfill, roller or machine compacted, includes equipment and labor | Cubic yard | $3.92 | 83 | $325.36 |
| Equipment/Installation | 48 | Excavation, Common Earth, side cast, small equipment | Bulk excavation and side casting of common earth with hydraulic excavator with less than 1 CY capacity. Includes equipment and labor. | Cubic yard | $2.12 | 83 | $175.96 |
| Equipment/Installation | 37 | Concrete, CIP, slab on grade, reinforced | Steel reinforced concrete formed and cast-in-placed 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 | $255.77 | 35 | $8,951.95 |
| 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 | $19.92 | 90 | $1,792.80 |
| Mobilization | 1139 | Mobilization, medium equipment | Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds. | Each | $203.05 | 2 | $406.10 |

## Scenario Worksheet

### Practice and Scenario Description:

| Information Type | Data |
|---|---|
| Region | Corn Belt |
| State | Ohio |
| Discipline Group | Environmental Engineering |
| Practice Code/Name | 316 - Animal Mortality Facility |
| Scenario ID | 7 |
| Scenario Name | Static Pile - Concrete Pad |
| Scenario Description | This scenario consists of installing a concrete pad. Area is sized for composting animal mortality as a static pile or windrow and equipment access to the material. Facility sizing parameters include primary and secondary composting area requirements to allow piles to be turned at least once to go into another heat cycle prior to final disposal, typically land application. Site to be located out of drainage areas, off-site water diverted and any runoff to spread out into a grassed area or vegetated treatment area as per regulations. If a roof is to be included in the installation refer to Practice Standard 367 - Roofs and Covers.<br><br>Potential Associated Practices: Pond Sealing or Lining, Bentonite Sealant (521C), Pond Sealing or Lining, Compacted Clay Treatment (521D), Pond Sealing or Lining, Flexible Membrane (521A), Pond Sealing or Lining, Soil Dispersant (521B), Fence (382), Critical Area Planting (342), Nutrient Management (590), Access Road (560), Structure for Water Control (587), Diversion (362), Subsurface Drain (606), Heavy Use Area Protection (561), and Underground Outlet (620). |
| Before Practice Situation | Animal mortality is done in a manner that results in non-point source pollution of excessive nutrients, organics, and pathogens being transported into surface and groundwater resources. Improper operation results in odors and spread of pathogens from incomplete composting, incineration, or interaction with predators. No plan was formulated for both normal and catastrophic mortality events. |
| After Practice Situation | Animal mortality is being done in a manner that prevents non-point source pollution of excessive nutrients, organics, and pathogens being transported into surface and groundwater resources. Proper operation results in little to no odors, complete composting, and protection from predators to minimize pathogen survival or spreading. An overall plan covers normal and catastrophic mortality events.<br>Construct a 75'x226' concrete surface to process mortality. Concrete 5" thick with light reinforcement. Site preparation includes topsoil removal, minimal regrading and compaction, installing gravel or sand subbase and then concrete. |
| Scenario Feature Measure | Pad Area |
| Scenario Unit | Square Foot |
| Scenario Typical Size | 16,950 |

### Cost Summary:

| Cost Category | Scenario Cost | Scenario Cost/Unit |
|---|---|---|
| Materials | $5,500.20 | $0.32 |
| Equipment/Installation | $69,070.60 | $4.07 |
| Labor | $0.00 | $0.00 |
| Mobilization | $406.10 | $0.02 |
| Acquisition of Technical Knowledge | $0.00 | $0.00 |
| Foregone Income | $0.00 | $0.00 |
| Total | $74,976.90 | $4.42 |

### 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 | $26.70 | 206 | $5,500.20 |
| Equipment/Installation | 49 | Earthfill, Roller Compacted | Earthfill, roller or machine compacted, includes equipment and labor | Cubic yard | $3.92 | 315 | $1,234.80 |
| Equipment/Installation | 48 | Excavation, Common Earth, side cast, small equipment | Bulk excavation and side casting of common earth with hydraulic excavator with less than 1 CY capacity. Includes equipment and labor. | Cubic yard | $2.12 | 630 | $1,335.60 |
| Equipment/Installation | 37 | Concrete, CIP, slab on grade, reinforced | Steel reinforced concrete formed and cast-in-placed 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 | $255.77 | 260 | $66,500.20 |
| Mobilization | 1139 | Mobilization, medium equipment | Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds. | Each | $203.05 | 2 | $406.10 |

## Scenario Worksheet

### Practice and Scenario Description:

| Information Type | Data |
|---|---|
| Region | Corn Belt |
| State | Ohio |
| Discipline Group | Environmental Engineering |
| Practice Code/Name | 317 - Composting Facility |
| Scenario ID | 5 |
| Scenario Name | Compacted Gravel Pad - 6" compacted gravel |
| Scenario Description | A composting facility for manure and other agricultural organic by-products designed with a 6" compacted gravel pad. Composter is installed to address water quality concerns and results in a composted product that can be used in multiple ways. Payment includes materials and equipment necessary for pad construction. This scenario is applicable when geological, soil, climate conditions or state and local regulations prohibit the use of an earthen surface. If a roof is to be included in the installation refer to Practice Standard 367 - Roofs and Covers. Not to be used for animal mortality composting. All animal mortality composting shall be done using Practice Standard 316 - Animal Mortality Facility.<br><br>Potential Associated Practices: Pond Sealing or Lining, Bentonite Sealant (521C), Pond Sealing or Lining, Compacted Clay Treatment (521D), Pond Sealing or Lining, |
| Before Practice Situation | Manure and other agricultural by-products are not being utilized or controlled in an environmentally safe manner. The wastes are either accumulating at the source, or other location, or are being transported but not properly utilized or disposed of. This situation poses an environmentally threat of excessive nutrients, organics, and pathogens being transported into surface and groundwaters, in addition to the use of excessive amounts of fertilizers. |
| After Practice Situation | Manure and other agricultural by-products are being controlled, by the collection at the source, and stored properly, at an environmentally suitable location, until such time that they are disposed of or utilized in a proper manner.<br>This scenario consists of installing a gravel pad over impervious soil to act as a working area to compost organic material in a static pile, windrow, that has sufficient carbon based bulking material to allow natural aeration. Piles typically turned at least once to go into another heat cycle prior to final disposal, typically land application. Construct a 75'x226' area on an improved gravel surface. Sub base material sufficiently compacted or improved. Include sufficient area for processing equipment access. Single piles or windrows to minimize runoff. Site to be located out of drainage areas, off-site water diverted and any runoff to spread out into a grassed area or vegetated treatment area as per regulations. Site preparation includes topsoil removal, compaction of subsoil, and installing 6" of compacted gravel. |
| Scenario Feature Measure | Square Foot Floor Area |
| Scenario Unit | Square Foot |
| Scenario Typical Size | 16,950 |

### Cost Summary:

| Cost Category | Scenario Cost | Scenario Cost/Unit |
|---|---|---|
| Materials | $8,410.50 | $0.50 |
| Equipment/Installation | $6,995.45 | $0.41 |
| Labor | $0.00 | $0.00 |
| Mobilization | $406.10 | $0.02 |
| Acquisition of Technical Knowledge | $0.00 | $0.00 |
| Foregone Income | $0.00 | $0.00 |
| Total | $15,812.05 | $0.93 |

### 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 | $26.70 | 315 | $8,410.50 |
| Equipment/Installation | 42 | Geotextile, woven | Woven Geotextile Fabric. Includes materials, equipment and labor | Square Yard | $2.35 | 1883 | $4,425.05 |
| Equipment/Installation | 49 | Earthfill, Roller Compacted | Earthfill, roller or machine compacted, includes equipment and labor | Cubic yard | $3.92 | 315 | $1,234.80 |
| Equipment/Installation | 48 | Excavation, Common Earth, side cast, small equipment | Bulk excavation and side casting of common earth with hydraulic excavator with less than 1 CY capacity. Includes equipment and labor. | Cubic yard | $2.12 | 630 | $1,335.60 |
| Mobilization | 1139 | Mobilization, medium equipment | Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds. | Each | $203.05 | 2 | $406.10 |

## Scenario Worksheet

### Practice and Scenario Description:

| Information Type | Data |
|---|---|
| Region | Corn Belt |
| State | Ohio |
| Discipline Group | Environmental Engineering |
| Practice Code/Name | 317 - Composting Facility |
| Scenario ID | 4 |
| Scenario Name | Concrete Pad |
| Scenario Description | A composting facility for manure and other agricultural organic by-products designed with a concrete pad. Composter is installed to address water quality concerns and results in a composted product that can be used in multiple ways. Payment includes materials and equipment necessary for pad construction. This scenario is applicable when geological, soil, climate conditions or state and local regulations prohibit the use of an earthen surface. If a roof is to be included in the installation refer to Practice Standard 367 - Roofs and Covers. Not to be used for animal mortality composting. All animal mortality composting shall be done using Practice Standard 316 - Animal Mortality Facility.<br><br>Potential Associated Practices: Pond Sealing or Lining, Bentonite Sealant (521C), Pond Sealing or Lining, Compacted Clay Treatment (521D), Pond Sealing or Lining, |
| Before Practice Situation | Manure and other agricultural by-products are not being utilized or controlled in an environmentally safe manner. The wastes are either accumulating at the source, or other location, or are being transported but not properly utilized or disposed of. This situation poses an environmentally threat of excessive nutrients, organics, and pathogens being transported into surface and groundwaters, in addition to the use of excessive amounts of fertilizers. |
| After Practice Situation | Manure and other agricultural by-products are being controlled, by the collection at the source, and stored temporarily, at an environmentally suitable location, until such time that they are disposed of or utilized in a proper manner.<br>This scenario consists of removing and compacting back into place the top 1' of soil to create a compacted, impervious earthen floor to act as a working area to compost organic material in a static pile, windrow, that has sufficient carbon based bulking material to allow natural aeration. Piles typically turned at least once to go into another heat cycle prior to final disposal, typically land application. Construct a 75'x226' concrete surface 5" thick on an improved compacted earthen surface. Include sufficient area for processing equipment access. Single piles or windrows to minimize runoff. Site to be located out of drainage areas, off-site water diverted and any runoff to spread out into a grassed area or vegetated treatment area as per regulations. Site preparation includes topsoil removal, compaction of subsoil, and reinstalling topsoil, compacted. |
| Scenario Feature Measure | Square Foot Floor Area |
| Scenario Unit | Square Foot |
| Scenario Typical Size | 16,950 |

### Cost Summary:

| Cost Category | Scenario Cost | Scenario Cost/Unit |
|---|---|---|
| Materials | $5,500.20 | $0.32 |
| Equipment/Installation | $69,070.60 | $4.07 |
| Labor | $0.00 | $0.00 |
| Mobilization | $406.10 | $0.02 |
| Acquisition of Technical Knowledge | $0.00 | $0.00 |
| Foregone Income | $0.00 | $0.00 |
| Total | $74,976.90 | $4.42 |

### 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 | $26.70 | 206 | $5,500.20 |
| Equipment/Installation | 37 | Concrete, CIP, slab on grade, reinforced | Steel reinforced concrete formed and cast-in-placed 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 | $255.77 | 260 | $66,500.20 |
| Equipment/Installation | 49 | Earthfill, Roller Compacted | Earthfill, roller or machine compacted, includes equipment and labor | Cubic yard | $3.92 | 315 | $1,234.80 |
| Equipment/Installation | 48 | Excavation, Common Earth, side cast, small equipment | Bulk excavation and side casting of common earth with hydraulic excavator with less than 1 CY capacity. Includes equipment and labor. | Cubic yard | $2.12 | 630 | $1,335.60 |
| Mobilization | 1139 | Mobilization, medium equipment | Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds. | Each | $203.05 | 2 | $406.10 |

## Scenario Worksheet

### Practice and Scenario Description:

| Information Type | Data |
|---|---|
| Region | Corn Belt |
| State | Ohio |
| Discipline Group | Environmental Engineering |
| Practice Code/Name | 317 - Composting Facility |
| Scenario ID | 2 |
| Scenario Name | Concrete Slab Under Concrete Bin Dividers |
| Scenario Description | A composting facility for manure and other agricultural organic by-products designed with a concrete slab under concrete bin dividers. Composter is installed to address water quality concerns and results in a composted product that can be used in multiple ways. Payment includes materials and equipment necessary for pad and bin construction. If a roof is to be included in the installation refer to Practice Standard 367 - Roofs and Covers. Not to be used for animal mortality composting. All animal mortality composting shall be done using Practice Standard 316 - Animal Mortality Facility.<br><br>Potential Associated Practices: Pond Sealing or Lining, Bentonite Sealant (521C), Pond Sealing or Lining, Compacted Clay Treatment (521D), Pond Sealing or Lining, Flexible Membrane (521A), Pond Sealing or Lining, Soil Dispersant (521B), Fence (382), Critical Area Planting (342), Nutrient Management (590), Access Road (560), |
| Before Practice Situation | Manure and other agricultural by-products are not being utilized or controlled in an environmentally safe manner. The wastes are either accumulating at the source, or other location, or are being transported but not properly utilized or disposed of. This situation poses an environmentally threat of excessive nutrients, organics, and pathogens being transported into surface and groundwaters, in addition to the use of excessive amounts of fertilizers. |
| After Practice Situation | Manure, litter and other agricultural by-products are being controlled, by the collection at the source, and stored properly, at an environmentally suitable location, until such time that they are disposed of or utilized in a proper manner. This scenario is based upon a 40' x 56' concrete slab with 5' high bin dividers, and 5 bins (configured 2 at 20'x28' and 3 at 20'x18.5'). Preparation includes stripping the top 1' of soil and roll compact same back into sub-floor. The bins are constructed on a 5" concrete slab used to store and stabilize manure, litter and other agricultural by-products. |
| Scenario Feature Measure | Square Foot Floor Area |
| Scenario Unit | Square Foot |
| Scenario Typical Size | 2240 |

### Cost Summary:

| Cost Category | Scenario Cost | Scenario Cost/Unit |
|---|---|---|
| Materials | $747.60 | $0.33 |
| Equipment/Installation | $23,668.87 | $10.57 |
| Labor | $0.00 | $0.00 |
| Mobilization | $406.10 | $0.18 |
| Acquisition of Technical Knowledge | $0.00 | $0.00 |
| Foregone Income | $0.00 | $0.00 |
| Total | $24,822.57 | $11.08 |

### 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 | $26.70 | 28 | $747.60 |
| 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 | $406.16 | 35 | $14,215.60 |
| Equipment/Installation | 37 | Concrete, CIP, slab on grade, reinforced | Steel reinforced concrete formed and cast-in-placed 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 | $255.77 | 35 | $8,951.95 |
| Equipment/Installation | 49 | Earthfill, Roller Compacted | Earthfill, roller or machine compacted, includes equipment and labor | Cubic yard | $3.92 | 83 | $325.36 |
| Equipment/Installation | 48 | Excavation, Common Earth, side cast, small equipment | Bulk excavation and side casting of common earth with hydraulic excavator with less than 1 CY capacity. Includes equipment and labor. | Cubic yard | $2.12 | 83 | $175.96 |
| Mobilization | 1139 | Mobilization, medium equipment | Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds. | Each | $203.05 | 2 | $406.10 |

## Scenario Worksheet

### Practice and Scenario Description:

| Information Type | Data |
|---|---|
| Region | Corn Belt |
| State | Ohio |
| Discipline Group | Environmental Engineering |
| Practice Code/Name | 317 - Composting Facility |
| Scenario ID | 1 |
| Scenario Name | Concrete Slab Under Wood Bin Dividers |
| Scenario Description | A composting facility for manure and other agricultural organic by-products designed with a concrete slab under wooden bin dividers. Composter is installed to address water quality concerns and results in a composted product that can be used in multiple ways. Payment includes materials and equipment necessary for pad and bin construction. If a roof is to be included in the installation refer to Practice Standard 367 - Roofs and Covers. Not to be used for animal mortality composting. All animal mortality composting shall be done using Practice Standard 316 - Animal Mortality Facility.<br><br>Potential Associated Practices: Pond Sealing or Lining, Bentonite Sealant (521C), Pond Sealing or Lining, Compacted Clay Treatment (521D), Pond Sealing or Lining, Flexible Membrane (521A), Pond Sealing or Lining, Soil Dispersant (521B), Fence (382), Critical Area Planting (342), Nutrient Management (590), Access Road (560), |
| Before Practice Situation | Manure and other agricultural by-products are not being utilized or controlled in an environmentally safe manner. The wastes are either accumulating at the source, or other location, or are being transported but not properly utilized or disposed of. This situation poses an environmentally threat of excessive nutrients, organics, and pathogens being transported into surface and groundwaters, in addition to the use of excessive amounts of fertilizers. |
| After Practice Situation | Manure, litter and other agricultural by-products are being controlled, by the collection at the source, and stored properly, at an environmentally suitable location, until such time that they are disposed of or utilized in a proper manner. This scenario is based upon a 40' x 56' concrete slab with 5' high bin dividers, and 5 bins (configured 2 at 20'x28' and 3 at 20'x18.5'). Preparation includes stripping the top 1' of soil and roll compact same back into sub-floor. The bins are constructed on a 5" concrete slab used to store and stabilize manure, litter and other agricultural by-products. |
| Scenario Feature Measure | Square Foot Floor Area |
| Scenario Unit | Square Foot |
| Scenario Typical Size | 2240 |

### Cost Summary:

| Cost Category | Scenario Cost | Scenario Cost/Unit |
|---|---|---|
| Materials | $3,234.32 | $1.44 |
| Equipment/Installation | $9,453.27 | $4.22 |
| Labor | $1,792.80 | $0.80 |
| Mobilization | $406.10 | $0.18 |
| Acquisition of Technical Knowledge | $0.00 | $0.00 |
| Foregone Income | $0.00 | $0.00 |
| Total | $14,886.49 | $6.65 |

### Cost Details:

| Cost Category | Component ID | Component Name | Component Description | Unit | Price ($/unit) | Quantity | Cost |
|---|---|---|---|---|---|---|---|
| Materials | 1609 | Lumber, planks, posts and timbers, treated | Treated dimension lumber with nominal thickness greater than 2". Includes lumber and fasteners. Does not include labor. | Board Foot | $1.17 | 936 | $1,095.12 |
| Materials | 1044 | Dimension Lumber, Treated | Treated dimension lumber with nominal thickness equal or less than 2". Includes lumber and fasteners | Board Foot | $0.71 | 1960 | $1,391.60 |
| Materials | 46 | Aggregate, Gravel, Graded | Gravel, includes materials, equipment and labor to transport and place. Includes washed and unwashed gravel. | Cubic yard | $26.70 | 28 | $747.60 |
| Equipment/Installation | 37 | Concrete, CIP, slab on grade, reinforced | Steel reinforced concrete formed and cast-in-placed 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 | $255.77 | 35 | $8,951.95 |
| Equipment/Installation | 49 | Earthfill, Roller Compacted | Earthfill, roller or machine compacted, includes equipment and labor | Cubic yard | $3.92 | 83 | $325.36 |
| Equipment/Installation | 48 | Excavation, Common Earth, side cast, small equipment | Bulk excavation and side casting of common earth with hydraulic excavator with less than 1 CY capacity. Includes equipment and labor. | Cubic yard | $2.12 | 83 | $175.96 |
| 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 | $19.92 | 90 | $1,792.80 |
| Mobilization | 1139 | Mobilization, medium equipment | Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds. | Each | $203.05 | 2 | $406.10 |

## Scenario Worksheet

### Practice and Scenario Description:

| Information Type | Data |
|---|---|
| Region | Corn Belt |
| State | Ohio |
| Discipline Group | Agronomy |
| Practice Code/Name | 327 - Conservation Cover |
| Scenario ID | 9 |
| Scenario Name | Aquatic Emergent |
| Scenario Description | Aquatic and emergent herbacious vegetation established in a wetland that is seasonally inundated with water to restore the characteristic wetland plant community to the site. Typical practice size is variable depending on site, this scenario uses 1 ac as the typical size. In addition to restoring aquatic emeregent plant community this practice scenario may also improve fish and wildlife habitat, soil quality, improve water quality, and improve air quality. Practice applicable on cropland, riparian areas, lacustrine fringes, depressional areas and other areas where wetland hydrology exist or will be restored. |
| Before Practice Situation | Crops such as corn, soybeans, or cotton are conventionally grown and harvested. Full width tillage is utilized, weeds controlled by cultivation and/or chemical application. Soil surface residue amounts average 10% or less. Soil erosion occurs with visible rills present, sediment may be moving offsite into surface water degrading water quality. Soil quality (soil organic matter) declines over time as a result of tillage practices, low residue, and long periods of bare soil. Air quality may be impacted during field operations by the creation of particulates. The system provides little to no wildlife or pollinator habitat. |
| After Practice Situation | Land restored to natural wetland habitat including a mix of native aquatic and/or emergent wetland plants adapted to living in saturated and inundated soils with seasonal inundation. Wetland fish and wildlife habitat has been benfited. This practice may also have reduced high nutrient levels in water in the wetland may have reduced other water pollutants. This scenario does not apply to critical area plantings. |
| Scenario Feature Measure | Area Planted |
| Scenario Unit | Acre |
| Scenario Typical Size | 1 |

### Cost Summary:

| Cost Category | Scenario Cost | Scenario Cost/Unit |
|---|---|---|
| Materials | $3,711.45 | $3,711.45 |
| Equipment/Installation | $0.00 | $0.00 |
| Labor | $537.84 | $537.84 |
| Mobilization | $0.00 | $0.00 |
| Acquisition of Technical Knowledge | $0.00 | $0.00 |
| Foregone Income | $389.06 | $389.06 |
| Total | $4,638.35 | $4,638.35 |

### Cost Details:

| Cost Category | Component ID | Component Name | Component Description | Unit | Price ($/unit) | Quantity | Cost |
|---|---|---|---|---|---|---|---|
| Materials | 1843 | Native Aquatic Plants, Emergent - Sedges (Carex spp.), Plug | Native aquatic sedge plugs. Plants are emergent. All required materials for establishing vegetation. Includes materials and shipping. | Each | $1.20 | 545 | $654.00 |
| Materials | 1848 | Native Aquatic Plants, Submerged - Pickerelweed (Pontederia cordata) | Pickerelweed. Native aquatic, plugs. Plants are submerged. All required materials for establishing vegetation. Includes material and shipping. | Each | $2.00 | 545 | $1,090.00 |
| Materials | 1850 | Native Aquatic Plants, Emergent - Sweetflag (Acorus americana) | Sweetflag. Native aquatic, plugs. Plants are emergent. All required materials for establishing vegetation. Includes material and shipping. | Each | $1.74 | 545 | $948.30 |
| Materials | 1873 | Softstem Bulrush (Scirpus validus) | Native Rush and shipping | Each | $1.01 | 545 | $550.45 |
| Materials | 1874 | Hardstem Bulrush (Scirpus acutus) | Native Rush and shipping, plug or rhizome | Each | $0.86 | 545 | $468.70 |
| 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 | $19.92 | 27 | $537.84 |
| Foregone Income | 1961 | FI, Soybeans Dryland | Dryland Soybeans is Primary Crop | Acre | $385.53 | 0.5 | $192.77 |
| Foregone Income | 1959 | FI, Corn Dryland | Dryland Corn is Primary Crop | Acre | $392.59 | 0.5 | $196.30 |

## Scenario Worksheet

### Practice and Scenario Description:

| Information Type | Data |
|---|---|
| Region | Corn Belt |
| State | Ohio |
| Discipline Group | Agronomy |
| Practice Code/Name | 327 - Conservation Cover |
| Scenario ID | 1 |
| Scenario Name | Introduced Grass |
| Scenario Description | This practice applies on land to be retired from agricultural production and on other lands needing permanent protective cover. This practice typically involves conversion from a row crop cropping system to permanent non-native vegetation (scenario includes non-native grass/legume species). The typical size of the practice is 10 acres. This practice scenario is typically used to reduce soil erosion, reduce soil quality degradation, improve water quality, develop wildlife habitit, and reduce air quality impacts. |
| Before Practice Situation | Crops such as corn, soybeans, or cotton are conventionally grown and harvested. Full width tillage is utilized, weeds controlled by cultivation and/or chemical application. Soil surface residue amounts average 10% or less. Soil erosion occurs with visible rills present, sediment may be moving offsite into surface water degrading water quality. Soil quality (soil organic matter) declines over time as a result of tillage practices, low residue, and long periods of bare soil. Air quality may be impacted during field operations by the creation of particulates. The system provides little to no wildlife habitat. |
| After Practice Situation | Land covered with permanent non-native grass/legume vegetation has reduced soil erosion, reduced water/sediment runoff, and significant dust emissions are eliminated therefore, air quality is improved. Plants sown for conservation cover may provide cover for beneficial insects and wildlife. This scenario does not apply to plantings for forage production or to critical area plantings. |
| Scenario Feature Measure | Area planted |
| Scenario Unit | Acre |
| Scenario Typical Size | 10 |

### Cost Summary:

| Cost Category | Scenario Cost | Scenario Cost/Unit |
|---|---|---|
| Materials | $1,328.40 | $132.84 |
| Equipment/Installation | $251.70 | $25.17 |
| Labor | $0.00 | $0.00 |
| Mobilization | $0.00 | $0.00 |
| Acquisition of Technical Knowledge | $0.00 | $0.00 |
| Foregone Income | $3,890.60 | $389.06 |
| Total | $5,470.70 | $547.07 |

### Cost Details:

| Cost Category | Component ID | Component Name | Component Description | Unit | Price ($/unit) | Quantity | Cost |
|---|---|---|---|---|---|---|---|
| Materials | 97 | Timothy (Phleum pratense) | Introduced Perennial Grasses and shipping. | Pound | $2.46 | 20 | $49.20 |
| Materials | 95 | Smooth Bromegrass (Bromus inermis) | Introduced Perennial Grasses and shipping. | Pound | $3.15 | 40 | $126.00 |
| Materials | 92 | Orchard Grass (Dactylis glomerata) | Introduced Perennial Grasses and shipping. | Pound | $2.04 | 20 | $40.80 |
| Materials | 74 | Potassium, K2O | K2O supplied by Muriate Of Potash. Price is not per pound of total product applied, no conversion is needed. | Pound | $0.52 | 400 | $208.00 |
| Materials | 73 | Phosphorus, P2O5 | Price per pound of P2O5 supplied by Superphosphate. Price is not per pound of total product applied, no conversion is needed. | Pound | $0.65 | 500 | $325.00 |
| Materials | 69 | Nitrogen (N), Ammonium Nitrate | Price per pound of N supplied by Ammonium Nitrate. Price is not per pound of total product applied, no conversion is needed. | Pound | $0.73 | 500 | $365.00 |
| Materials | 112 | Red Clover (Trifolium pratense) | Introduced Legumes and shipping. | Pound | $2.60 | 40 | $104.00 |
| Materials | 334 | Herbicide, Glyphosate | A broad-spectrum, non-selective systemic herbicide. Product is typically used in these practices 340, 645, 314, 666, and 512. Refer to WIN-PST for product names and active ingredients. Materials only. | Acre | $11.04 | 10 | $110.40 |
| Equipment/Installation | 950 | Fertilizer, ground application, dry bulk | Dry bulk fertilizer application performed by ground equipment. Includes equipment, power unit and labor costs. | Acre | $6.88 | 10 | $68.80 |
| Equipment/Installation | 960 | Seeding Operation, No Till/Grass Drill | No Till drill or grass drill for seeding. Includes equipment, power unit and labor costs. | Acre | $14.02 | 10 | $140.20 |
| Equipment/Installation | 948 | Chemical, ground application | Chemical application performed by ground equipment. Includes equipment, power unit and labor costs. | Acre | $4.27 | 10 | $42.70 |
| Foregone Income | 1959 | FI, Corn Dryland | Dryland Corn is Primary Crop | Acre | $392.59 | 5 | $1,962.95 |
| Foregone Income | 1961 | FI, Soybeans Dryland | Dryland Soybeans is Primary Crop | Acre | $385.53 | 5 | $1,927.65 |

## Scenario Worksheet

### Practice and Scenario Description:

| Information Type | Data |
|---|---|
| Region | Corn Belt |
| State | Ohio |
| Discipline Group | Agronomy |
| Practice Code/Name | 327 - Conservation Cover |
| Scenario ID | 2 |
| Scenario Name | Native Grass |
| Scenario Description | This practice applies on land to be retired from agricultural production and on other lands needing permanent protective cover. This practice typically involves conversion from a row crop cropping system system to permanent native vegetation (scenario includes native grass). The typical size of the practice is 10 acres. This practice scenario is typically used to reduce soil erosion, reduce soil quality degradation, improve water quality, develop wildlife habitit, and reduce air quality impacts. |
| Before Practice Situation | Crops such as corn, soybeans, or cotton are conventionally grown and harvested. Full width tillage is utilized, weeds controlled by cultivation and/or chemical application. Soil surface residue amounts average 10% or less. Soil erosion occurs with visible rills present, sediment may be moving offsite into surface water degrading water quality. Soil quality (soil organic matter) declines over time as a result of tillage practices, low residue, and long periods of bare soil. Air quality may be impacted during field operations by the creation of particulates. The system provides little to no wildlife habitat. |
| After Practice Situation | Land covered with permanent native grass vegetation has reduced soil erosion, reduced water/sediment runoff, and significant dust emissions are eliminated therefore, air quality is improved. Plants sown for conservation cover may provide cover for beneficial insects and wildlife. This scenario does not apply to plantings for forage production or to critical area plantings. |
| Scenario Feature Measure | Area planted |
| Scenario Unit | Acre |
| Scenario Typical Size | 10 |

### Cost Summary:

| Cost Category | Scenario Cost | Scenario Cost/Unit |
|---|---|---|
| Materials | $1,744.15 | $174.42 |
| Equipment/Installation | $225.60 | $22.56 |
| Labor | $0.00 | $0.00 |
| Mobilization | $0.00 | $0.00 |
| Acquisition of Technical Knowledge | $0.00 | $0.00 |
| Foregone Income | $3,890.60 | $389.06 |
| Total | $5,860.35 | $586.04 |

### Cost Details:

| Cost Category | Component ID | Component Name | Component Description | Unit | Price ($/unit) | Quantity | Cost |
|---|---|---|---|---|---|---|---|
| Materials | 84 | Wild Rye, Virginia (Elymus virginicus) | Native Grasses and shipping. | Pound | $9.81 | 20 | $196.20 |
| Materials | 79 | Little Blue Stem (Schizachyrium scoparium) | Native Grasses and shipping. | Pound | $15.43 | 40 | $617.20 |
| Materials | 136 | Purple Coneflower (Echinacea purpurea) | Native Forbs and shipping. | Pound | $32.78 | 2.5 | $81.95 |
| Materials | 334 | Herbicide, Glyphosate | A broad-spectrum, non-selective systemic herbicide. Product is typically used in these practices 340, 645, 314, 666, and 512. Refer to WIN-PST for product names and active ingredients. Materials only. | Acre | $11.04 | 20 | $220.80 |
| Materials | 125 | Partidge Pea (Chamaecrista fasciculata) | Native Legumes and shipping. | Pound | $15.70 | 40 | $628.00 |
| Equipment/Installation | 960 | Seeding Operation, No Till/Grass Drill | No Till drill or grass drill for seeding. Includes equipment, power unit and labor costs. | Acre | $14.02 | 10 | $140.20 |
| Equipment/Installation | 948 | Chemical, ground application | Chemical application performed by ground equipment. Includes equipment, power unit and labor costs. | Acre | $4.27 | 20 | $85.40 |
| Foregone Income | 1959 | FI, Corn Dryland | Dryland Corn is Primary Crop | Acre | $392.59 | 5 | $1,962.95 |
| Foregone Income | 1961 | FI, Soybeans Dryland | Dryland Soybeans is Primary Crop | Acre | $385.53 | 5 | $1,927.65 |

## Scenario Worksheet

### Practice and Scenario Description:

| Information Type | Data |
|---|---|
| Region | Corn Belt |
| State | Ohio |
| Discipline Group | Agronomy |
| Practice Code/Name | 327 - Conservation Cover |
| Scenario ID | 3 |
| Scenario Name | Organic Introduced Mix |
| Scenario Description | This practice applies on organically managed land needing permanent protective cover. This practice applies on land to be retired from agricultural production and on other lands needing permanent protective cover. This practice typically involves conversion from a row crop cropping system to permanent non-native vegetation (scenario includes non-native grass/legume species). The typical size of the practice is 10 acres. This practice scenario is typically used to reduce soil erosion, reduce soil quality degradation, improve water quality, develop wildlife habitit, and reduce air quality impacts. |
| Before Practice Situation | Crops such as vegetables and small fruit crops are organically grown and harvested. Full width tillage is utilized, weeds controlled by cultivation and/or chemical application. Soil surface residue amounts average 10% or less. Soil erosion occurs with visible rills present, sediment may be moving offsite into surface water degrading water quality. Soil quality (soil organic matter) declines over time as a result of tillage practices, low residue, and long periods of bare soil. Air quality may be impacted during field operations by the creation of particulates. The system provides little to no wildlife habitat. |
| After Practice Situation | Land covered with permanent non-native grass/legume vegetation has reduced soil erosion, reduced water/sediment runoff, and significant dust emissions are eliminated therefore, air quality is improved. Plants sown for conservation cover may provide cover for beneficial insects and wildlife. This scenario does not apply to plantings for forage production or to critical area plantings. |
| Scenario Feature Measure | Area planted |
| Scenario Unit | Acre |
| Scenario Typical Size | 10 |

### Cost Summary:

| Cost Category | Scenario Cost | Scenario Cost/Unit |
|---|---|---|
| Materials | $3,896.80 | $389.68 |
| Equipment/Installation | $790.00 | $79.00 |
| Labor | $0.00 | $0.00 |
| Mobilization | $0.00 | $0.00 |
| Acquisition of Technical Knowledge | $0.00 | $0.00 |
| Foregone Income | $3,890.60 | $389.06 |
| Total | $8,577.40 | $857.74 |

### Cost Details:

| Cost Category | Component ID | Component Name | Component Description | Unit | Price ($/unit) | Quantity | Cost |
|---|---|---|---|---|---|---|---|
| Materials | 102 | Certified Organic, Smooth Bromegrass (Bromus inermis) | Introduced Perennial Grasses and shipping. | Pound | $4.41 | 40 | $176.40 |
| Materials | 100 | Certified Organic, Orchard Grass (Dactylis glomerata) | Introduced Perennial Grasses and shipping. | Pound | $5.02 | 20 | $100.40 |
| Materials | 114 | Certified Organic, Alfalfa (Medicago sativa) | Introduced Legumes and shipping. | Pound | $4.38 | 40 | $175.20 |
| Materials | 268 | Potassium, Organic | ORGANIC Potassium | Pound | $1.29 | 400 | $516.00 |
| Materials | 267 | Phosphorus, Organic | ORGANIC Phosphorus | Pound | $2.92 | 500 | $1,460.00 |
| Materials | 266 | Nitrogen, Organic | ORGANIC Nitrogen | Pound | $2.43 | 500 | $1,215.00 |
| Materials | 117 | Certified Organic, Red Clover (Trifolium pratense) | Introduced Legumes and shipping. | Pound | $8.46 | 30 | $253.80 |
| Equipment/Installation | 950 | Fertilizer, ground application, dry bulk | Dry bulk fertilizer application performed by ground equipment. Includes equipment, power unit and labor costs. | Acre | $6.88 | 10 | $68.80 |
| Equipment/Installation | 960 | Seeding Operation, No Till/Grass Drill | No Till drill or grass drill for seeding. Includes equipment, power unit and labor costs. | Acre | $14.02 | 10 | $140.20 |
| Equipment/Installation | 957 | Mechanical weed control, Vegetation termination | Mechanical operations, Includes: Roller/crimper, mower, shredder, etc. Includes equipment, power unit and labor costs. | Acre | $19.43 | 20 | $388.60 |
| Equipment/Installation | 945 | Tillage, Light | Includes light disking (tandem) or field cultivator. Includes equipment, power unit and labor costs. | Acre | $9.62 | 20 | $192.40 |
| Foregone Income | 1959 | FI, Corn Dryland | Dryland Corn is Primary Crop | Acre | $392.59 | 5 | $1,962.95 |
| Foregone Income | 1961 | FI, Soybeans Dryland | Dryland Soybeans is Primary Crop | Acre | $385.53 | 5 | $1,927.65 |

## Scenario Worksheet

### Practice and Scenario Description:

| Information Type | Data |
|---|---|
| Region | Corn Belt |
| State | Ohio |
| Discipline Group | Agronomy |
| Practice Code/Name | 327 - Conservation Cover |
| Scenario ID | 4 |
| Scenario Name | Organic Native Mix |
| Scenario Description | This practice applies on organically managed land needing permanent protective cover. This practice applies on land to be retired from agricultural production and on other lands needing permanent protective cover. This practice typically involves conversion from a row crop cropping system system to permanent native vegetation (scenario includes native grass). The typical size of the practice is 10 acres. This practice scenario is typically used to reduce soil erosion, reduce soil quality degradation, improve water quality, develop wildlife habitit, and reduce air quality impacts. *Certified Organic Native Seed is typically NOT available, therefore non-organic seed components were used. |
| Before Practice Situation | Crops such as vegetables and small fruit crops are organically grown and harvested. Full width tillage is utilized, weeds controlled by cultivation and/or chemical application. Soil surface residue amounts average 10% or less. Soil erosion occurs with visible rills present, sediment may be moving offsite into surface water degrading water quality. Soil quality (soil organic matter) declines over time as a result of tillage practices, low residue, and long periods of bare soil. Air quality may be impacted during field operations by the creation of particulates. The system provides little to no wildlife habitat. |
| After Practice Situation | Land covered with permanent native grass vegetation has reduced soil erosion, reduced water/sediment runoff, and significant dust emissions are eliminated therefore, air quality is improved. Plants sown for conservation cover may provide cover for beneficial insects and wildlife. This scenario does not apply to plantings for forage production or to critical area plantings. |
| Scenario Feature Measure | Area planted |
| Scenario Unit | Acre |
| Scenario Typical Size | 10 |

### Cost Summary:

| Cost Category | Scenario Cost | Scenario Cost/Unit |
|---|---|---|
| Materials | $1,523.35 | $152.34 |
| Equipment/Installation | $817.40 | $81.74 |
| Labor | $0.00 | $0.00 |
| Mobilization | $0.00 | $0.00 |
| Acquisition of Technical Knowledge | $0.00 | $0.00 |
| Foregone Income | $3,890.60 | $389.06 |
| Total | $6,231.35 | $623.14 |

### Cost Details:

| Cost Category | Component ID | Component Name | Component Description | Unit | Price ($/unit) | Quantity | Cost |
|---|---|---|---|---|---|---|---|
| Materials | 84 | Wild Rye, Virginia (Elymus virginicus) | Native Grasses and shipping. | Pound | $9.81 | 20 | $196.20 |
| Materials | 79 | Little Blue Stem (Schizachyrium scoparium) | Native Grasses and shipping. | Pound | $15.43 | 40 | $617.20 |
| Materials | 136 | Purple Coneflower (Echinacea purpurea) | Native Forbs and shipping. | Pound | $32.78 | 2.5 | $81.95 |
| Materials | 125 | Partidge Pea (Chamaecrista fasciculata) | Native Legumes and shipping. | Pound | $15.70 | 40 | $628.00 |
| Equipment/Installation | 960 | Seeding Operation, No Till/Grass Drill | No Till drill or grass drill for seeding. Includes equipment, power unit and labor costs. | Acre | $14.02 | 10 | $140.20 |
| Equipment/Installation | 957 | Mechanical weed control, Vegetation termination | Mechanical operations, Includes: Roller/crimper, mower, shredder, etc. Includes equipment, power unit and labor costs. | Acre | $19.43 | 20 | $388.60 |
| Equipment/Installation | 945 | Tillage, Light | Includes light disking (tandem) or field cultivator. Includes equipment, power unit and labor costs. | Acre | $9.62 | 30 | $288.60 |
| Foregone Income | 1959 | FI, Corn Dryland | Dryland Corn is Primary Crop | Acre | $392.59 | 5 | $1,962.95 |
| Foregone Income | 1961 | FI, Soybeans Dryland | Dryland Soybeans is Primary Crop | Acre | $385.53 | 5 | $1,927.65 |

## Scenario Worksheet

### Practice and Scenario Description:

| Information Type | Data |
|---|---|
| Region | Corn Belt |
| State | Ohio |
| Discipline Group | Agronomy |
| Practice Code/Name | 327 - Conservation Cover |
| Scenario ID | 6 |
| Scenario Name | Organic Pollinator Habitat |
| Scenario Description | Permanent vegetation, including mix of native grasses, legume, forbs (mix may also include non-native species), established on organically managed land needing permanent vegetative cover that provides a mix of early, mid, and late season forbs, as well as habitat for pollinators. Typical practice size is variable depending on site, this scenario uses 5 ac as the typical size. In addition to providing pollinator habitat, this practice scenario may also reduce sheet and rill erosion, improve soil quality, improve water quality, and improve air quality. The practice may also provide wildlife habitat. Practice applicable on cropland, odd areas, corners, etc. *Certified Organic Native Seed is typically NOT available, therefore non-organic seed components were used. |
| Before Practice Situation | Crops such as vegetables and small fruit crops are organically grown and harvested. Full width tillage is utilized, weeds controlled mainly by cultivation. Soil surface residue amounts average 10% or less. Soil erosion occurs with visible rills present, sediment may be moving offsite into surface water degrading water quality. Soil quality (soil organic matter) declines over time as a result of tillage practices, low residue, and long periods of bare soil. Air quality may be impacted during field operations by the creation of particulates. The system provides little to no wildlife or pollinator habitat. |
| After Practice Situation | Organically managed land covered with permanent pollinator habitat including a mix of native grasses, legume, forbs (mix may also include non-native species). This practice may also have reduced soil erosion, reduced water/sediment runoff, and significant dust emissions are eliminated therefore, air quality is improved. Plants sown for pollinator habitat may also provide cover for beneficial insects and wildlife. This scenario does not apply to critical area plantings. |
| Scenario Feature Measure | Area planted |
| Scenario Unit | Acre |
| Scenario Typical Size | 5 |

### Cost Summary:

| Cost Category | Scenario Cost | Scenario Cost/Unit |
|---|---|---|
| Materials | $918.29 | $183.66 |
| Equipment/Installation | $408.70 | $81.74 |
| Labor | $0.00 | $0.00 |
| Mobilization | $0.00 | $0.00 |
| Acquisition of Technical Knowledge | $116.67 | $23.33 |
| Foregone Income | $1,945.30 | $389.06 |
| Total | $3,388.96 | $677.79 |

### Cost Details:

| Cost Category | Component ID | Component Name | Component Description | Unit | Price ($/unit) | Quantity | Cost |
|---|---|---|---|---|---|---|---|
| Materials | 119 | Blue Wild Indigo (Baptisia australis) | Native Legumes and shipping. | Pound | $156.45 | 2.5 | $391.13 |
| Materials | 79 | Little Blue Stem (Schizachyrium scoparium) | Native Grasses and shipping. | Pound | $15.43 | 5 | $77.15 |
| Materials | 84 | Wild Rye, Virginia (Elymus virginicus) | Native Grasses and shipping. | Pound | $9.81 | 5 | $49.05 |
| Materials | 125 | Partidge Pea (Chamaecrista fasciculata) | Native Legumes and shipping. | Pound | $15.70 | 2.5 | $39.25 |
| Materials | 129 | Wild Senna (Cassia hebecarpa) | Native Legumes and shipping. | Pound | $68.25 | 2.5 | $170.63 |
| Materials | 136 | Purple Coneflower (Echinacea purpurea) | Native Forbs and shipping. | Pound | $32.78 | 1 | $32.78 |
| Materials | 133 | Smooth Aster (Aster laevis) | Native Forbs and shipping. | Pound | $217.74 | 0.63 | $137.18 |
| Materials | 148 | Black-Eyed Susan (Rudbeckia hirta) | Native Forbs and shipping. | Pound | $33.55 | 0.63 | $21.14 |
| Equipment/Installation | 957 | Mechanical weed control, Vegetation termination | Mechanical operations, Includes: Roller/crimper, mower, shredder, etc. Includes equipment, power unit and labor costs. | Acre | $19.43 | 10 | $194.30 |
| Equipment/Installation | 960 | Seeding Operation, No Till/Grass Drill | No Till drill or grass drill for seeding. Includes equipment, power unit and labor costs. | Acre | $14.02 | 5 | $70.10 |
| Equipment/Installation | 945 | Tillage, Light | Includes light disking (tandem) or field cultivator. Includes equipment, power unit and labor costs. | Acre | $9.62 | 15 | $144.30 |
| Acquisition of Technical Knowledge | 294 | Training, Workshops | Educational seminar or series of meetings emphasizing interaction and exchange of information among a usually small number of participants. | Each | $116.67 | 1 | $116.67 |
| Foregone Income | 1961 | FI, Soybeans Dryland | Dryland Soybeans is Primary Crop | Acre | $385.53 | 2.5 | $963.83 |
| Foregone Income | 1959 | FI, Corn Dryland | Dryland Corn is Primary Crop | Acre | $392.59 | 2.5 | $981.48 |

## Scenario Worksheet

### Practice and Scenario Description:

| Information Type | Data |
|---|---|
| Region | Corn Belt |
| State | Ohio |
| Discipline Group | Agronomy |
| Practice Code/Name | 327 - Conservation Cover |
| Scenario ID | 5 |
| Scenario Name | Pollinator Habitat |
| Scenario Description | Permanent vegetation, including mix of native grasses, legume, forbs (mix may also include non-native species), established on any land needing permanent vegetative cover that provides a mix of early, mid, and late season forbs, as well as habitat for pollinators. Typical practice size is variable depending on site, this scenario uses 5 ac as the typical size. In addition to providing pollinator habitat, this practice scenario may also reduce sheet and rill erosion, improve soil quality, improve water quality, and improve air quality. The practice may also provide wildlife habitat. Practice applicable on cropland, odd areas, corners, etc. |
| Before Practice Situation | Crops such as corn, soybeans, or cotton are conventionally grown and harvested. Full width tillage is utilized, weeds controlled by cultivation and/or chemical application. Soil surface residue amounts average 10% or less. Soil erosion occurs with visible rills present, sediment may be moving offsite into surface water degrading water quality. Soil quality (soil organic matter) declines over time as a result of tillage practices, low residue, and long periods of bare soil. Air quality may be impacted during field operations by the creation of particulates. The system provides little to no wildlife or pollinator habitat. |
| After Practice Situation | Land covered with permanent pollinator habitat including a mix of native grasses, legume, forbs (mix may also include non-native species). This practice may also have reduced soil erosion, reduced water/sediment runoff, and significant dust emissions are eliminated therefore, air quality is improved. Plants sown for pollinator habitat may also provide cover for beneficial insects and wildlife. This scenario does not apply to critical area plantings. |
| Scenario Feature Measure | Area planted |
| Scenario Unit | Acre |
| Scenario Typical Size | 5 |

### Cost Summary:

| Cost Category | Scenario Cost | Scenario Cost/Unit |
|---|---|---|
| Materials | $1,083.89 | $216.78 |
| Equipment/Installation | $307.10 | $61.42 |
| Labor | $0.00 | $0.00 |
| Mobilization | $0.00 | $0.00 |
| Acquisition of Technical Knowledge | $116.67 | $23.33 |
| Foregone Income | $1,945.30 | $389.06 |
| Total | $3,452.96 | $690.59 |

### Cost Details:

| Cost Category | Component ID | Component Name | Component Description | Unit | Price ($/unit) | Quantity | Cost |
|---|---|---|---|---|---|---|---|
| Materials | 119 | Blue Wild Indigo (Baptisia australis) | Native Legumes and shipping. | Pound | $156.45 | 2.5 | $391.13 |
| Materials | 79 | Little Blue Stem (Schizachyrium scoparium) | Native Grasses and shipping. | Pound | $15.43 | 5 | $77.15 |
| Materials | 84 | Wild Rye, Virginia (Elymus virginicus) | Native Grasses and shipping. | Pound | $9.81 | 5 | $49.05 |
| Materials | 334 | Herbicide, Glyphosate | A broad-spectrum, non-selective systemic herbicide. Product is typically used in these practices 340, 645, 314, 666, and 512. Refer to WIN-PST for product names and active ingredients. Materials only. | Acre | $11.04 | 15 | $165.60 |
| Materials | 125 | Partidge Pea (Chamaecrista fasciculata) | Native Legumes and shipping. | Pound | $15.70 | 2.5 | $39.25 |
| Materials | 129 | Wild Senna (Cassia hebecarpa) | Native Legumes and shipping. | Pound | $68.25 | 2.5 | $170.63 |
| Materials | 136 | Purple Coneflower (Echinacea purpurea) | Native Forbs and shipping. | Pound | $32.78 | 1 | $32.78 |
| Materials | 133 | Smooth Aster (Aster laevis) | Native Forbs and shipping. | Pound | $217.74 | 0.63 | $137.18 |
| Materials | 148 | Black-Eyed Susan (Rudbeckia hirta) | Native Forbs and shipping. | Pound | $33.55 | 0.63 | $21.14 |
| Equipment/Installation | 957 | Mechanical weed control, Vegetation termination | Mechanical operations, Includes: Roller/crimper, mower, shredder, etc. Includes equipment, power unit and labor costs. | Acre | $19.43 | 10 | $194.30 |
| Equipment/Installation | 960 | Seeding Operation, No Till/Grass Drill | No Till drill or grass drill for seeding. Includes equipment, power unit and labor costs. | Acre | $14.02 | 5 | $70.10 |
| Equipment/Installation | 948 | Chemical, ground application | Chemical application performed by ground equipment. Includes equipment, power unit and labor costs. | Acre | $4.27 | 10 | $42.70 |
| Acquisition of Technical Knowledge | 294 | Training, Workshops | Educational seminar or series of meetings emphasizing interaction and exchange of information among a usually small number of participants. | Each | $116.67 | 1 | $116.67 |
| Foregone Income | 1961 | FI, Soybeans Dryland | Dryland Soybeans is Primary Crop | Acre | $385.53 | 2.5 | $963.83 |
| Foregone Income | 1959 | FI, Corn Dryland | Dryland Corn is Primary Crop | Acre | $392.59 | 2.5 | $981.48 |

## Scenario Worksheet

### Practice and Scenario Description:

| Information Type | Data |
|---|---|
| Region | Corn Belt |
| State | Ohio |
| Discipline Group | Agronomy |
| Practice Code/Name | 327 - Conservation Cover |
| Scenario ID | 7 |
| Scenario Name | Prairie Restoration |
| Scenario Description | Permanent vegetation, including mix of native grasses, legume, forbs established on land needing permanent vegetative cover as a restoration to native prairie habitat. Typical practice size is variable depending on site, this scenario uses 10 ac as the typical size. In addition to restoring prairie cover, this practice scenario may also reduce sheet and rill erosion, improve soil quality, improve water quality, and improve air quality. The practice may also provide wildlife habitat. Practice applicable on cropland, odd areas, corners, etc. |
| Before Practice Situation | Crops such as corn, soybeans, or cotton are conventionally grown and harvested. Full width tillage is utilized, weeds controlled by cultivation and/or chemical application. Soil surface residue amounts average 10% or less. Soil erosion occurs with visible rills present, sediment may be moving offsite into surface water degrading water quality. Soil quality (soil organic matter) declines over time as a result of tillage practices, low residue, and long periods of bare soil. Air quality may be impacted during field operations by the creation of particulates. The system provides little to no wildlife or pollinator habitat. |
| After Practice Situation | Land restored to natural habitat including a mix of native grasses, legume, forbs. This practice may also have reduced soil erosion, reduced water/sediment runoff, and significant dust emissions are eliminated therefore, air quality is improved. Plants sown for pollinator habitat may also provide cover for beneficial insects and wildlife. This scenario does not apply to critical area plantings. |
| Scenario Feature Measure | Area planted |
| Scenario Unit | Acre |
| Scenario Typical Size | 10 |

### Cost Summary:

| Cost Category | Scenario Cost | Scenario Cost/Unit |
|---|---|---|
| Materials | $4,700.71 | $470.07 |
| Equipment/Installation | $528.80 | $52.88 |
| Labor | $0.00 | $0.00 |
| Mobilization | $0.00 | $0.00 |
| Acquisition of Technical Knowledge | $116.67 | $11.67 |
| Foregone Income | $3,890.60 | $389.06 |
| Total | $9,236.78 | $923.68 |

### Cost Details:

| Cost Category | Component ID | Component Name | Component Description | Unit | Price ($/unit) | Quantity | Cost |
|---|---|---|---|---|---|---|---|
| Materials | 2017 | Bolander's Sunflower (Helianthus bolanderi) | Native Forbs & shipping | Pound | $95.45 | 1.25 | $119.31 |
| Materials | 133 | Smooth Aster (Aster laevis) | Native Forbs and shipping. | Pound | $217.74 | 1.25 | $272.18 |
| Materials | 82 | Switchgrass, Blackwell (Panicum virgatum) | Native Grasses and shipping. | Pound | $9.62 | 5 | $48.10 |
| Materials | 148 | Black-Eyed Susan (Rudbeckia hirta) | Native Forbs and shipping. | Pound | $33.55 | 1.25 | $41.94 |
| Materials | 84 | Wild Rye, Virginia (Elymus virginicus) | Native Grasses and shipping. | Pound | $9.81 | 10 | $98.10 |
| Materials | 79 | Little Blue Stem (Schizachyrium scoparium) | Native Grasses and shipping. | Pound | $15.43 | 10 | $154.30 |
| Materials | 77 | Eastern Gamagrass (Tripsacum dactyloides) | Native Grasses and shipping. | Pound | $17.45 | 10 | $174.50 |
| Materials | 76 | Big Blue Stem (Andropogon gerardii) | Native Grasses and shipping. | Pound | $11.81 | 10 | $118.10 |
| Materials | 136 | Purple Coneflower (Echinacea purpurea) | Native Forbs and shipping. | Pound | $32.78 | 5 | $163.90 |
| Materials | 334 | Herbicide, Glyphosate | A broad-spectrum, non-selective systemic herbicide. Product is typically used in these practices 340, 645, 314, 666, and 512. Refer to WIN-PST for product names and active ingredients. Materials only. | Acre | $11.04 | 20 | $220.80 |
| Materials | 129 | Wild Senna (Cassia hebecarpa) | Native Legumes and shipping. | Pound | $68.25 | 5 | $341.25 |
| Materials | 127 | Slender Bush Clover (Lespedeza virginica) | Native Legumes and shipping. | Pound | $224.95 | 5 | $1,124.75 |
| Materials | 125 | Partidge Pea (Chamaecrista fasciculata) | Native Legumes and shipping. | Pound | $15.70 | 5 | $78.50 |
| Materials | 121 | Canada Tick Trefoil (Desmodium canadense) | Native Legumes and shipping. | Pound | $171.45 | 5 | $857.25 |
| Materials | 119 | Blue Wild Indigo (Baptisia australis) | Native Legumes and shipping. | Pound | $156.45 | 5 | $782.25 |
| Materials | 159 | Prairie Cinquefoil (Potentilla arguta) | Native Forbs and shipping. | Pound | $168.78 | 0.625 | $105.49 |
| Equipment/Installation | 960 | Seeding Operation, No Till/Grass Drill | No Till drill or grass drill for seeding. Includes equipment, power unit and labor costs. | Acre | $14.02 | 10 | $140.20 |
| Equipment/Installation | 957 | Mechanical weed control, Vegetation termination | Mechanical operations, Includes: Roller/crimper, mower, shredder, etc. Includes equipment, power unit and labor costs. | Acre | $19.43 | 20 | $388.60 |
| Acquisition of Technical Knowledge | 294 | Training, Workshops | Educational seminar or series of meetings emphasizing interaction and exchange of information among a usually small number of participants. | Each | $116.67 | 1 | $116.67 |
| Foregone Income | 1959 | FI, Corn Dryland | Dryland Corn is Primary Crop | Acre | $392.59 | 5 | $1,962.95 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Foregone Income | 1961 | FI, Soybeans Dryland | Dryland Soybeans is Primary Crop | Acre | $385.53 | 5 | $1,927.65 |

## Scenario Worksheet

### Practice and Scenario Description:

| Information Type | Data |
|---|---|
| Region | Corn Belt |
| State | Ohio |
| Discipline Group | Agronomy |
| Practice Code/Name | 327 - Conservation Cover |
| Scenario ID | 8 |
| Scenario Name | Sedge Meadow |
| Scenario Description | Permanent herbacious vegetation, including mix of native grasses, sedges and other wetland forbs, established on land needing permanent vegetative cover as a restoration to wetland habitat typical to the site. Typical practice size is variable depending on site, this scenario uses 1 ac as the typical size. In addition to restoring sedge meadow cover, this practice scenario may also reduce sheet and rill erosion, improve soil quality, improve water quality, and improve air quality. The practice may also provide wildlife habitat. Practice applicable on cropland, riparian areas and other areas where wetland hydrology exist or will be restored. |
| Before Practice Situation | Crops such as corn, soybeans, or cotton are conventionally grown and harvested. Full width tillage is utilized, weeds controlled by cultivation and/or chemical application. Soil surface residue amounts average 10% or less. Soil erosion occurs with visible rills present, sediment may be moving offsite into surface water degrading water quality. Soil quality (soil organic matter) declines over time as a result of tillage practices, low residue, and long periods of bare soil. Air quality may be impacted during field operations by the creation of particulates. The system provides little to no wildlife or pollinator habitat. |
| After Practice Situation | Land restored to natural wetland habitat including a mix of native grasses, sedges and forbs adapted to living in saturated soils with temperary inundation. This practice may also have reduced soil erosion, reduced water/sediment runoff, and significant dust emissions are eliminated therefore, air quality is improved. Plants sown for pollinator habitat may also provide cover for beneficial insects and wildlife. This scenario does not apply to critical area plantings. |
| Scenario Feature Measure | Area planted |
| Scenario Unit | Acre |
| Scenario Typical Size | 1 |

### Cost Summary:

| Cost Category | Scenario Cost | Scenario Cost/Unit |
|---|---|---|
| Materials | $4,399.35 | $4,399.35 |
| Equipment/Installation | $23.64 | $23.64 |
| Labor | $557.76 | $557.76 |
| Mobilization | $0.00 | $0.00 |
| Acquisition of Technical Knowledge | $116.67 | $116.67 |
| Foregone Income | $389.06 | $389.06 |
| Total | $5,486.48 | $5,486.48 |

### Cost Details:

| Cost Category | Component ID | Component Name | Component Description | Unit | Price ($/unit) | Quantity | Cost |
|---|---|---|---|---|---|---|---|
| Materials | 1873 | Softstem Bulrush (Scirpus validus) | Native Rush and shipping | Each | $1.01 | 480 | $484.80 |
| Materials | 1880 | Fox Sedge (Carex vulpinoidea) | Native Sedge and shipping, plug or rhizome | Each | $1.07 | 240 | $256.80 |
| Materials | 2014 | Silky Lupine (Lupinus sericeus) | Native Forbs & shipping | Pound | $150.45 | 0.25 | $37.61 |
| Materials | 2013 | Narrow-leaved Milkweed (Asclepias fascicularis) | Native Forbs & shipping | Pound | $355.30 | 0.25 | $88.83 |
| Materials | 1889 | Bluejoint (Calamagrostis canadensis) | Native Grasses and shipping | Each | $0.78 | 480 | $374.40 |
| Materials | 1881 | Redroot Flatsedge (Carex erythrorhizos) | Native Rush, Includes materials and shipping. | Pound | $80.45 | 0.25 | $20.11 |
| Materials | 1879 | Sawbeak Sedge (Carex stipata) | Native Sedge and shipping, plug or rhizome | Each | $1.05 | 240 | $252.00 |
| Materials | 1878 | Bull Sedge (Carex lanuginosa) | Native Sedge and shipping, plug or rhizome | Each | $4.36 | 240 | $1,046.40 |
| Materials | 1877 | Needle Spikerush (Eleocharis acicularis) | Native Rush and shipping, plug or rhizome | Each | $4.36 | 240 | $1,046.40 |
| Materials | 1876 | Creeping Spikerush | Native Rush and shipping, plug or rhizome | Each | $0.89 | 480 | $427.20 |
| Materials | 1882 | Chufa Flatsedge (Cyperus esculentus) | Native Sedge and shipping, plug or rhizome | Each | $0.76 | 480 | $364.80 |
| Equipment/Installation | 960 | Seeding Operation, No Till/Grass Drill | No Till drill or grass drill for seeding. Includes equipment, power unit and labor costs. | Acre | $14.02 | 1 | $14.02 |
| Equipment/Installation | 945 | Tillage, Light | Includes light disking (tandem) or field cultivator. Includes equipment, power unit and labor costs. | Acre | $9.62 | 1 | $9.62 |
| 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 | $19.92 | 28 | $557.76 |
| Acquisition of Technical Knowledge | 294 | Training, Workshops | Educational seminar or series of meetings emphasizing interaction and exchange of information among a usually small number of participants. | Each | $116.67 | 1 | $116.67 |
| Foregone Income | 1961 | FI, Soybeans Dryland | Dryland Soybeans is Primary Crop | Acre | $385.53 | 0.5 | $192.77 |
| Foregone Income | 1959 | FI, Corn Dryland | Dryland Corn is Primary Crop | Acre | $392.59 | 0.5 | $196.30 |

## Scenario Worksheet

### Practice and Scenario Description:

| Information Type | Data |
|---|---|
| Region | Corn Belt |
| State | Ohio |
| Discipline Group | Agronomy |
| Practice Code/Name | 328 - Conservation Crop Rotation |
| Scenario ID | 2 |
| Scenario Name | Add 2 Years of Perennials to Rotation |
| Scenario Description | Scenario is for incorporating two years of a high residue perennial crop into an existing rotation that does not include perennials. This practice payment is provided to acquire the technical knowledge and skills necessary to effectively implement a conservation crop rotation utilizing perennials on a cropland farm, and foregone income that may be associated with the change from the current rotation. It requires new acres established in the rotation. Cost represents typical situations for conventional and organic producers. |
| Before Practice Situation | The rotation consists primarily of low residue producing row crops. Fields range from nearly flat to C and D slopes. Erosion, soil quality, and pest management are the primary concerns. |
| After Practice Situation | A rotation is establish that provides additional 2 yrs of high residue perennial crops that reduce erosion, improve soil quality, and break pest cycles. |
| Scenario Feature Measure | Area planted |
| Scenario Unit | Acre |
| Scenario Typical Size | 100 |

### Cost Summary:

| Cost Category | Scenario Cost | Scenario Cost/Unit |
|---|---|---|
| Materials | $0.00 | $0.00 |
| Equipment/Installation | $0.00 | $0.00 |
| Labor | $365.20 | $3.65 |
| Mobilization | $0.00 | $0.00 |
| Acquisition of Technical Knowledge | $150.27 | $1.50 |
| Foregone Income | $34,806.00 | $348.06 |
| Total | $35,321.47 | $353.21 |

### Cost Details:

| Cost Category | Component ID | Component Name | Component Description | Unit | Price ($/unit) | Quantity | Cost |
|---|---|---|---|---|---|---|---|
| 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 | $36.52 | 10 | $365.20 |
| Acquisition of Technical Knowledge | 297 | Transportation | Mileage to attend a training conference, workshop, or TSP travel associated with developing Conservation Activity Plan. | Mile | $0.56 | 60 | $33.60 |
| Acquisition of Technical Knowledge | 294 | Training, Workshops | Educational seminar or series of meetings emphasizing interaction and exchange of information among a usually small number of participants. | Each | $116.67 | 1 | $116.67 |
| Foregone Income | 2122 | FI, Hay, General Grass | General Grass Hay is Primary Land Use | Acre | $41.00 | -100 | ($4,100.00) |
| Foregone Income | 1959 | FI, Corn Dryland | Dryland Corn is Primary Crop | Acre | $392.59 | 50 | $19,629.50 |
| Foregone Income | 1961 | FI, Soybeans Dryland | Dryland Soybeans is Primary Crop | Acre | $385.53 | 50 | $19,276.50 |

## Scenario Worksheet

### Practice and Scenario Description:

| Information Type | Data |
|---|---|
| Region | Corn Belt |
| State | Ohio |
| Discipline Group | Agronomy |
| Practice Code/Name | 328 - Conservation Crop Rotation |
| Scenario ID | 3 |
| Scenario Name | Add 2 Years of Perennials to Rotation, Specialty Crop |
| Scenario Description | Scenario is for incorporating two years of a high residue perennial crop into an existing rotation that does not include perennials. This practice payment is provided to acquire the technical knowledge and skills necessary to effectively implement a conservation crop rotation utilizing perennials on an organic specialty crop farm, and foregone income that may be associated with the change from the current rotation. It requires new acres established in the rotation. This practice includes foregone income by including perennials into the rotation. Cost represents typical situations for conventional and organic specialty crop producers. |
| Before Practice Situation | The rotation consists primarily of low residue producing row crops. Fields range from nearly flat to C and D slopes. Erosion, soil quality, and pest management are the primary concerns. |
| After Practice Situation | A rotation is establish that provides additional 2 yrs of high residue perennial crops that reduce erosion, improve soil quality, and break pest cycles. |
| Scenario Feature Measure | Area Planted |
| Scenario Unit | Acre |
| Scenario Typical Size | 10 |

### Cost Summary:

| Cost Category | Scenario Cost | Scenario Cost/Unit |
|---|---|---|
| Materials | $0.00 | $0.00 |
| Equipment/Installation | $0.00 | $0.00 |
| Labor | $36.52 | $3.65 |
| Mobilization | $0.00 | $0.00 |
| Acquisition of Technical Knowledge | $150.27 | $15.03 |
| Foregone Income | $9,205.00 | $920.50 |
| Total | $9,391.79 | $939.18 |

### Cost Details:

| Cost Category | Component ID | Component Name | Component Description | Unit | Price ($/unit) | Quantity | Cost |
|---|---|---|---|---|---|---|---|
| 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 | $36.52 | 1 | $36.52 |
| Acquisition of Technical Knowledge | 297 | Transportation | Mileage to attend a training conference, workshop, or TSP travel associated with developing Conservation Activity Plan. | Mile | $0.56 | 60 | $33.60 |
| Acquisition of Technical Knowledge | 294 | Training, Workshops | Educational seminar or series of meetings emphasizing interaction and exchange of information among a usually small number of participants. | Each | $116.67 | 1 | $116.67 |
| Foregone Income | 2033 | FI, Vegetables | Vegetables is Primary Crop | Acre | $961.50 | 10 | $9,615.00 |
| Foregone Income | 2122 | FI, Hay, General Grass | General Grass Hay is Primary Land Use | Acre | $41.00 | -10 | ($410.00) |

## Scenario Worksheet

### Practice and Scenario Description:

| Information Type | Data |
|---|---|
| Region | Corn Belt |
| State | Ohio |
| Discipline Group | Agronomy |
| Practice Code/Name | 328 - Conservation Crop Rotation |
| Scenario ID | 1 |
| Scenario Name | Add Small Grain to Rotation |
| Scenario Description | Scenario is for incorporating a small grain crop into an existing cropping system that does not include small grains. This practice payment is provided to acquire the technical knowledge and skills necessary to effectively implement a conservation crop rotation utilizing small grain on a cropland farm, and foregone income that may be associated with the change from the current rotation. It requires new acres established in a rotation. Cost represents typical situations for conventional and organic producers. |
| Before Practice Situation | The rotation consists primarily of low residue producing row crops. Fields range from nearly flat to C and D slopes. Erosion, soil quality, and pest management are the primary concerns. |
| After Practice Situation | A rotation is establish that provides additional high residue and smallgrain that reduce erosion, improve soil quality, and break pest cycles. |
| Scenario Feature Measure | Area planted |
| Scenario Unit | Acre |
| Scenario Typical Size | 100 |

### Cost Summary:

| Cost Category | Scenario Cost | Scenario Cost/Unit |
|---|---|---|
| Materials | $0.00 | $0.00 |
| Equipment/Installation | $0.00 | $0.00 |
| Labor | $365.20 | $3.65 |
| Mobilization | $0.00 | $0.00 |
| Acquisition of Technical Knowledge | $150.27 | $1.50 |
| Foregone Income | $7,268.24 | $72.68 |
| Total | $7,783.71 | $77.84 |

### Cost Details:

| Cost Category | Component ID | Component Name | Component Description | Unit | Price ($/unit) | Quantity | Cost |
|---|---|---|---|---|---|---|---|
| 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 | $36.52 | 10 | $365.20 |
| Acquisition of Technical Knowledge | 294 | Training, Workshops | Educational seminar or series of meetings emphasizing interaction and exchange of information among a usually small number of participants. | Each | $116.67 | 1 | $116.67 |
| Acquisition of Technical Knowledge | 297 | Transportation | Mileage to attend a training conference, workshop, or TSP travel associated with developing Conservation Activity Plan. | Mile | $0.56 | 60 | $33.60 |
| Foregone Income | 1959 | FI, Corn Dryland | Dryland Corn is Primary Crop | Acre | $392.59 | 50 | $19,629.50 |
| Foregone Income | 1961 | FI, Soybeans Dryland | Dryland Soybeans is Primary Crop | Acre | $385.53 | 50 | $19,276.50 |
| Foregone Income | 1963 | FI, Wheat Dryland | Dryland Wheat is Primary Crop | Acre | $180.60 | -33 | ($5,959.80) |
| Foregone Income | 1959 | FI, Corn Dryland | Dryland Corn is Primary Crop | Acre | $392.59 | -33 | ($12,955.47) |
| Foregone Income | 1961 | FI, Soybeans Dryland | Dryland Soybeans is Primary Crop | Acre | $385.53 | -33 | ($12,722.49) |

## Scenario Worksheet

### Practice and Scenario Description:

| Information Type | Data |
|---|---|
| Region | Corn Belt |
| State | Ohio |
| Discipline Group | Agronomy |
| Practice Code/Name | 329 - Residue and Tillage Management - No-Till/ Strip Till/ Direct Seed |
| Scenario ID | 1 |
| Scenario Name | No-Till/Strip-Till |
| Scenario Description | This practice typically involves conversion from a clean-tilled (conventional tilled) system to no-till or strip-till (conservation tilled) system on cropland. This involves managing the amount, orientation and distribution of crop and other plant residue on the soil surface year round while limiting soil-disturbing activities used to grow and harvest crops in systems. The practice is used to reduce sheet and rill erosion, reduce wind erosion, improve soil quality, reduce CO2 losses from the soil, reduce energy use, increase plant available moisture and provide food and escape cover for wildlife. The no-till/strip-till system includes chemical weed control (rather than cultivation). System is applicable in both irrigated and non-irrigated fields. |
| Before Practice Situation | Row crops or small grains are grown and harvested. Full width tillage is performed prior to planting and weed control during crop production is typically cultivation and chemical application. Fields are disked immediately following harvest, with additional operations in some fields to facilitate drainage or additional weed control. Residue amounts after tillage operations average 10% or less, resulting in bare soil being exposed to wind erosion and/or intense rainfall during the fall, winter, and early spring. Any crop residue that is present degrades and sediment/nutrient runoff from fields increases during rainfall events. Sheet and rill erosion occurs with visible rills by spring. Soil health (soil organic matter) declines over time as a result of tillage practices, low residue, and long periods of bare soil. This system will typically have a negative Soil Conditioning Index (SCI) and a high Soil Tillage Intensity Rating (STIR). |
| After Practice Situation | Managing crop residue on the surface of a field (typical 100 acre) year around according to the 329 practice plan while limiting soil disturbing activities to those which place nutrients, and plant crops that meet the minimum criteria in the 329 practice standard. All crops are seeded/planted with a no-till drill or no-till/strip-till planter, which minimizes soil disturbance while establishing good seed-soil contact. All residues are to be maintained on the soil surface in a uniform distribution over the entire field and not burned or removed. Crop residues provide soil surface cover throughout the year. Runoff and erosion are reduced and no rills are visible on the soil surface. Wind erosion is reduced by standing residues and surface cover. Over time, soil health is improved due to the additional biomass (crop residues), ground cover, and soil infiltration. Crop residues and/or cover crop residues left on the soil surface may maximize weed control by increasing allelopathic and mulching effect, and provides cover for wildlife. The practice would require reducing soil disturbance and erosion and increasing biomass returned to the soil in sufficient amounts to achieve increased SCI and decreased STIR. |
| Scenario Feature Measure | Area planted |
| Scenario Unit | Acre |
| Scenario Typical Size | 100 |

### Cost Summary:

| Cost Category | Scenario Cost | Scenario Cost/Unit |
|---|---|---|
| Materials | $1,104.00 | $11.04 |
| Equipment/Installation | $2,349.50 | $23.50 |
| Labor | $0.00 | $0.00 |
| Mobilization | $0.00 | $0.00 |
| Acquisition of Technical Knowledge | $150.27 | $1.50 |
| Foregone Income | $0.00 | $0.00 |
| Total | $3,603.77 | $36.04 |

### Cost Details:

| Cost Category | Component ID | Component Name | Component Description | Unit | Price ($/unit) | Quantity | Cost |
|---|---|---|---|---|---|---|---|
| Materials | 334 | Herbicide, Glyphosate | A broad-spectrum, non-selective systemic herbicide. Product is typically used in these practices 340, 645, 314, 666, and 512. Product Name: Roundup, Accord XRT, and Accord SP. | Acre | $11.04 | 100 | $1,104.00 |
| Equipment/Installation | 948 | Chemical, ground application | Chemical application performed by ground equipment. Equipment and labor costs included. | Acre | $6.50 | 100 | $650.00 |
| Equipment/Installation | 960 | Seeding Operation, No Till/Grass Drill | No Till drill or grass drill for seeding. Includes all costs for equipment, power unit, and labor. | Acre | $19.08 | 50 | $954.00 |
| Equipment/Installation | 1230 | Seeding Operation, No Till/Strip Till Planter | No Till/Strip Till row planters for seeding. Includes all costs for equipment, power unit, and labor. | Acre | $14.91 | 50 | $745.50 |
| Acquisition of Technical Knowledge | 294 | Training, Workshops | Educational seminar or series of meetings emphasizing interaction and exchange of information among a usually small number of participants. | Each | $116.67 | 1 | $116.67 |
| Acquisition of Technical Knowledge | 297 | Transportation | Mileage to attend a training conference, workshop, or TSP travel associated with developing Conservation Activity Plan. | Mile | $0.56 | 60 | $33.60 |

## Scenario Worksheet

### Practice and Scenario Description:

| Information Type | Data |
|---|---|
| Region | Corn Belt |
| State | Ohio |
| Discipline Group | Agronomy |
| Practice Code/Name | 329 - Residue and Tillage Management - No-Till/ Strip Till/ Direct Seed |
| Scenario ID | 2 |
| Scenario Name | Organic No-Till/Strip-Till |
| Scenario Description | This practice typically involves conversion from a clean or mulch tilled (conventional tilled) system to no-till or strip-till (conservation tilled) system on organic cropland. This involves managing the amount, orientation and distribution of crop and other plant residue on the soil surface year round while limiting soil-disturbing activities used to grow and harvest crops in systems. The practice is used to reduce sheet and rill erosion, reduce wind erosion, improve soil quality, reduce CO2 losses from the soil, reduce energy use, increase plant available moisture and provide food and escape cover for wildlife. The organic no-till/strip-till system relies on mulching/residue management, organic-approved chemical weed control, or alternative methods of weed control such as hand weeding, flaming, roller crimping, etc. (rather than traditional cultivation). System is applicable in both irrigated and non-irrigated fields. |
| Before Practice Situation | Organically grown crops such as various vegetable and fruit crops (along with organically produced row crops) are grown and harvested throughout the year. Full width tillage is performed prior to planting and weed control during crop production is typically cultivation and mulching. Fields are disked immediately following harvest, with additional operations in some fields to facilitate drainage or additional weed control. Residue amounts after tillage operations average 10% or less, resulting in bare soil being exposed to wind erosion and/or intense rainfall during the fall, winter, and early spring. Any crop residue that is present degrades and sediment/nutrient runoff from fields increases during rainfall events. Wind and/or water erosion occurs with visible rills by spring. Soil health (soil organic matter) declines over time as a result of tillage practices, low residue, and long periods of bare soil. This system will typically have a negative Soil Conditioning Index (SCI) and a high Soil Tillage Intensity Rating (STIR). |
| After Practice Situation | 329 is applied per the practice plan and all the appropriate criteria are followed for the planned purpose(s). Crop residue is managed on the surface of an organic crop field (typical 20 acre) year around while limiting soil disturbing activities to those which condition residue, place nutrients, and plant crops. All crops are seeded/planted with a no-till drill, no-till/strip-till transplanter, or no-till/strip-till planter, which minimize soil disturbance while establishing good seed-soil contact. All residues are to be maintained on the soil surface in a uniform distribution over the entire field and not burned or removed. Crop residues provide soil surface cover throughout the year. Runoff and erosion are reduced and no rills are visible on the soil surface. Wind erosion is reduced by standing residues and surface cover. Over time, soil health is improved due to the additional biomass (crop residues), ground cover, and soil infiltration. Crop residues and/or cover crop residues left on the soil surface may maximize weed control by increasing allelopathic and mulching effect and provide wildlife food and cover. The practice would require reducing soil disturbance and erosion and increasing biomass returned to the soil in sufficient amounts to achieve increased SCI and decreased STIR. |
| Scenario Feature Measure | Area planted |
| Scenario Unit | Acre |
| Scenario Typical Size | 20 |

### Cost Summary:

| Cost Category | Scenario Cost | Scenario Cost/Unit |
|---|---|---|
| Materials | $0.00 | $0.00 |
| Equipment/Installation | $688.50 | $34.43 |
| Labor | $0.00 | $0.00 |
| Mobilization | $0.00 | $0.00 |
| Acquisition of Technical Knowledge | $150.27 | $7.51 |
| Foregone Income | $0.00 | $0.00 |
| Total | $838.77 | $41.94 |

### Cost Details:

| Cost Category | Component ID | Component Name | Component Description | Unit | Price ($/unit) | Quantity | Cost |
|---|---|---|---|---|---|---|---|
| Equipment/Installation | 957 | Mechanical weed control, Vegetation termination | Mechanical operations, Includes: Roller/crimper, mower, shredder, etc. Includes equipment, power unit and labor costs. | Acre | $17.43 | 20 | $348.60 |
| Equipment/Installation | 960 | Seeding Operation, No Till/Grass Drill | No Till drill or grass drill for seeding. Includes all costs for equipment, power unit, and labor. | Acre | $19.08 | 10 | $190.80 |
| Equipment/Installation | 1230 | Seeding Operation, No Till/Strip Till Planter | No Till/Strip Till row planters for seeding. Includes all costs for equipment, power unit, and labor. | Acre | $14.91 | 10 | $149.10 |
| Acquisition of Technical Knowledge | 294 | Training, Workshops | Educational seminar or series of meetings emphasizing interaction and exchange of information among a usually small number of participants. | Each | $116.67 | 1 | $116.67 |
| Acquisition of Technical Knowledge | 297 | Transportation | Mileage to attend a training conference, workshop, or TSP travel associated with developing Conservation Activity Plan. | Mile | $0.56 | 60 | $33.60 |

## Scenario Worksheet

### Practice and Scenario Description:

| Information Type | Data |
|---|---|
| Region | Corn Belt |
| State | Ohio |
| Discipline Group | Agronomy |
| Practice Code/Name | 330 - Contour Farming |
| Scenario ID | 1 |
| Scenario Name | Contour Farming |
| Scenario Description | This scenario meets the specifications of the NRCS Contour Farming Standard. Payment reflects the extra labor and initial supervision costs in implementing and following contour farming compared to other methods. More time is usually needed when following contour operations due to more equipment time in shorter rows and more equipment turning. Annual erosion rates for the rotation exceeds tolerance levels. Excessive runoff leads to sedimentation of waterways. |
| Before Practice Situation | The typical field size in this geographical region for this scenario.is 30 acres. The Field slope averages 6% while the slope length averages 160 feet. All farming operations on this cropland field including disking, bedding, planting, and cultivation are performed parallel to the slope. This row arrangement usually results in longer rows with less time used for turning. Annual erosion rates for the rotation exceeds tolerance levels. Excessive runoff leads to sedimentation of waterways. |
| After Practice Situation | This practice is installed on the entire field. A survey is completed by trained and certified Federal, State, local personnel or consultant to determine and "stake" contour row arrangement. Permanent row markers are established to ensure that this practice is maintained for the life of this practice All field operations including: disking, bedding, planting, and cultivation are performed on the contour which is near perpendicular to the field slope. The farm manager is initially on site to ensure that equipment operator is properly following contour methods. Soil erosion rates are reduced by nearly half and may be below tolerance depending on the rotation. Likewise, sedimentation has be significantly reduced. |
| Scenario Feature Measure | acre |
| Scenario Unit | Acre |
| Scenario Typical Size | 30 |

### Cost Summary:

| Cost Category | Scenario Cost | Scenario Cost/Unit |
|---|---|---|
| Materials | $0.00 | $0.00 |
| Equipment/Installation | $25.51 | $0.85 |
| Labor | $222.91 | $7.43 |
| Mobilization | $0.00 | $0.00 |
| Acquisition of Technical Knowledge | $0.00 | $0.00 |
| Foregone Income | $0.00 | $0.00 |
| Total | $248.42 | $8.28 |

### Cost Details:

| Cost Category | Component ID | Component Name | Component Description | Unit | Price ($/unit) | Quantity | Cost |
|---|---|---|---|---|---|---|---|
| Equipment/Installation | 939 | Truck, Pickup | Equipment and power unit costs. Labor not included. | Hour | $25.51 | 1 | $25.51 |
| Labor | 232 | Equipment Operators, Light | Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers | Hour | $22.67 | 5 | $113.35 |
| 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 | $36.52 | 3 | $109.56 |

## Scenario Worksheet

### Practice and Scenario Description:

| Information Type | Data |
|---|---|
| Region | Corn Belt |
| State | Ohio |
| Discipline Group | Agronomy |
| Practice Code/Name | 332 - Contour Buffer Strips |
| Scenario ID | 1 |
| Scenario Name | Introduced Grass |
| Scenario Description | Narrow strips of permanent, herbaceous vegetative cover established around the hill slope and alternated down the slope with wider cropped strips in between that are farmed on the contour. This practice applies to all conventional cropland. Practice includes seedbed prep and planting of introduced species (scenario includes non-native grass/legume species) and foregone income for the area of the buffer strip that is taken out of production. |
| Before Practice Situation | Water Erosion Calculator (e.g. RUSLE2) indicates that there is a significant amount of sheet and rill erosion and/or a significant amount of sediment potenially delivered to the downslope edge of the field. A secondary concern is that there may not be enough wildlife/pollinator habitat, food source or refugia in the field or farm. |
| After Practice Situation | introduced grasses, legumes and forbs will be established in strips in the field to meet the resource needs and producer objectives. Minimum widths shall be based on NRCS local design criteria specific to the purpose for installing the practice. Introduced species shall be selected that do not function as a host for diseases of a field crop and have physical charactaristics necessary to control water erosion to tolerable levels in the cropped area of the field. |
| Scenario Feature Measure | number of acres |
| Scenario Unit | Acre |
| Scenario Typical Size | 1 |

### Cost Summary:

| Cost Category | Scenario Cost | Scenario Cost/Unit |
|---|---|---|
| Materials | $174.30 | $174.30 |
| Equipment/Installation | $31.47 | $31.47 |
| Labor | $0.00 | $0.00 |
| Mobilization | $0.00 | $0.00 |
| Acquisition of Technical Knowledge | $0.00 | $0.00 |
| Foregone Income | $389.06 | $389.06 |
| Total | $594.83 | $594.83 |

### Cost Details:

| Cost Category | Component ID | Component Name | Component Description | Unit | Price ($/unit) | Quantity | Cost |
|---|---|---|---|---|---|---|---|
| Materials | 97 | Timothy (Phleum pratense) | Introduced Perennial Grasses and shipping. | Pound | $2.46 | 2 | $4.92 |
| Materials | 95 | Smooth Bromegrass (Bromus inermis) | Introduced Perennial Grasses and shipping. | Pound | $3.15 | 4 | $12.60 |
| Materials | 334 | Herbicide, Glyphosate | A broad-spectrum, non-selective systemic herbicide. Product is typically used in these practices 340, 645, 314, 666, and 512. Refer to WIN-PST for product names and active ingredients. Materials only. | Acre | $11.04 | 1 | $11.04 |
| Materials | 75 | Lime, ENM | Fertilizer: Limestone Spread on field. | Ton | $23.98 | 2 | $47.96 |
| Materials | 74 | Potassium, K2O | K2O supplied by Muriate Of Potash. Price is not per pound of total product applied, no conversion is needed. | Pound | $0.52 | 40 | $20.80 |
| Materials | 73 | Phosphorus, P2O5 | Price per pound of P2O5 supplied by Superphosphate. Price is not per pound of total product applied, no conversion is needed. | Pound | $0.65 | 50 | $32.50 |
| Materials | 71 | Nitrogen (N), Urea | Price per pound of N supplied by Urea. Price is not per pound of total product applied, no conversion is needed. | Pound | $0.60 | 50 | $30.00 |
| Materials | 112 | Red Clover (Trifolium pratense) | Introduced Legumes and shipping. | Pound | $2.60 | 4 | $10.40 |
| Equipment/Installation | 960 | Seeding Operation, No Till/Grass Drill | No Till drill or grass drill for seeding. Includes all costs for equipment, power unit, and labor. | Acre | $19.08 | 1 | $19.08 |
| Equipment/Installation | 950 | Fertilizer, ground application, dry bulk | Dry bulk fertilizer application performed by ground equipment. Includes equipment, power unit and labor costs. | Acre | $5.89 | 1 | $5.89 |
| Equipment/Installation | 948 | Chemical, ground application | Chemical application performed by ground equipment. Equipment and labor costs included. | Acre | $6.50 | 1 | $6.50 |
| Foregone Income | 1961 | FI, Soybeans Dryland | Dryland Soybeans is Primary Crop | Acre | $385.53 | 0.5 | $192.77 |
| Foregone Income | 1959 | FI, Corn Dryland | Dryland Corn is Primary Crop | Acre | $392.59 | 0.5 | $196.30 |
| Materials | 92 | Orchard Grass (Dactylis glomerata) | Introduced Perennial Grasses and shipping. | Pound | $2.04 | 2 | $4.08 |

## Scenario Worksheet

### Practice and Scenario Description:

| Information Type | Data |
|---|---|
| Region | Corn Belt |
| State | Ohio |
| Discipline Group | Agronomy |
| Practice Code/Name | 332 - Contour Buffer Strips |
| Scenario ID | 3 |
| Scenario Name | Introduced Grass, Organic |
| Scenario Description | Narrow strips of permanent, herbaceous vegetative cover established around the hill slope and alternated down the slope with wider cropped strips in between that are farmed on the contour. This practice applies to all organic cropland. Practice includes seedbed prep and planting of introduced species (scenario includes non-native grass/legume species) and foregone income for the area of the buffer strip that is taken out of production. |
| Before Practice Situation | Water Erosion Calculator (e.g. RUSLE2) indicates that there is a significant amount of sheet and rill erosion and/or a significant amount of sediment potenially delivered to the downslope edge of the field. A secondary concern is that there may not be enough wildlife/pollinator habitat, food source or refugia in the field or farm. |
| After Practice Situation | introduced grasses, legumes and forbs will be established in strips in the field to meet the resource needs and producer objectives. Minimum widths shall be based on NRCS local design criteria specific to the purpose for installing the practice. Introduced species shall be selected that do not function as a host for diseases of a field crop and have physical charactaristics necessary to control water erosion to tolerable levels in the cropped area of the field. |
| Scenario Feature Measure | Number of acres |
| Scenario Unit | Acre |
| Scenario Typical Size | 1 |

### Cost Summary:

| Cost Category | Scenario Cost | Scenario Cost/Unit |
|---|---|---|
| Materials | $437.64 | $437.64 |
| Equipment/Installation | $44.23 | $44.23 |
| Labor | $0.00 | $0.00 |
| Mobilization | $0.00 | $0.00 |
| Acquisition of Technical Knowledge | $0.00 | $0.00 |
| Foregone Income | $389.06 | $389.06 |
| Total | $870.93 | $870.93 |

### Cost Details:

| Cost Category | Component ID | Component Name | Component Description | Unit | Price ($/unit) | Quantity | Cost |
|---|---|---|---|---|---|---|---|
| Materials | 267 | Phosphorus, Organic | ORGANIC Phosphorus | Pound | $2.92 | 50 | $146.00 |
| Materials | 100 | Certified Organic, Orchard Grass (Dactylis glomerata) | Introduced Perennial Grasses and shipping. | Pound | $5.02 | 2 | $10.04 |
| Materials | 268 | Potassium, Organic | ORGANIC Potassium | Pound | $1.29 | 40 | $51.60 |
| Materials | 266 | Nitrogen, Organic | ORGANIC Nitrogen | Pound | $2.43 | 50 | $121.50 |
| Materials | 75 | Lime, ENM | Fertilizer: Limestone Spread on field. | Ton | $23.98 | 2 | $47.96 |
| Materials | 114 | Certified Organic, Alfalfa (Medicago sativa) | Introduced Legumes and shipping. | Pound | $4.38 | 4 | $17.52 |
| Materials | 102 | Certified Organic, Smooth Bromegrass (Bromus inermis) | Introduced Perennial Grasses and shipping. | Pound | $4.41 | 4 | $17.64 |
| Materials | 117 | Certified Organic, Red Clover (Trifolium pratense) | Introduced Legumes and shipping. | Pound | $8.46 | 3 | $25.38 |
| Equipment/Installation | 960 | Seeding Operation, No Till/Grass Drill | No Till drill or grass drill for seeding. Includes all costs for equipment, power unit, and labor. | Acre | $19.08 | 1 | $19.08 |
| Equipment/Installation | 950 | Fertilizer, ground application, dry bulk | Dry bulk fertilizer application performed by ground equipment. Includes equipment, power unit and labor costs. | Acre | $5.89 | 1 | $5.89 |
| Equipment/Installation | 945 | Tillage, Light | Includes light disking (tandem) or field cultivator. Equipment and power unit costs. Labor is included. | Acre | $9.63 | 2 | $19.26 |
| Foregone Income | 1961 | FI, Soybeans Dryland | Dryland Soybeans is Primary Crop | Acre | $385.53 | 0.5 | $192.77 |
| Foregone Income | 1959 | FI, Corn Dryland | Dryland Corn is Primary Crop | Acre | $392.59 | 0.5 | $196.30 |

## Scenario Worksheet

### Practice and Scenario Description:

| Information Type | Data |
|---|---|
| Region | Corn Belt |
| State | Ohio |
| Discipline Group | Agronomy |
| Practice Code/Name | 332 - Contour Buffer Strips |
| Scenario ID | 2 |
| Scenario Name | Native Grass |
| Scenario Description | Narrow strips of permanent, herbaceous vegetative cover established around the hill slope and alternated down the slope with wider cropped strips in between that are farmed on the contour. This practice applies to all conventional cropland. Practice includes seedbed prep and planting of native species (scenario includes native grass/legume/forbs species) and foregone income for the area of the buffer strip that is taken out of production. |
| Before Practice Situation | Water Erosion Calculator (e.g. RUSLE2) indicates that there is a significant amount of sheet and rill erosion and/or a significant amount of sediment potenially delivered to the downslope edge of the field. A secondary concern is that there may not be enough wildlife/pollinator habitat, food source or refugia in the field or farm. |
| After Practice Situation | Native grasses and legumes/forbs will be established in strips in the field to meet the resource needs and producer objectives. Minimum widths shall be based on NRCS local design criteria specific to the purpose for installing the practice. Native species shall be selected that do not function as a host for diseases of a field crop and have physical charactaristics necessary to control water erosion to tolerable levels in the cropped area of the field. |
| Scenario Feature Measure | Number of acres |
| Scenario Unit | Acre |
| Scenario Typical Size | 1 |

### Cost Summary:

| Cost Category | Scenario Cost | Scenario Cost/Unit |
|---|---|---|
| Materials | $222.07 | $222.07 |
| Equipment/Installation | $32.08 | $32.08 |
| Labor | $0.00 | $0.00 |
| Mobilization | $0.00 | $0.00 |
| Acquisition of Technical Knowledge | $0.00 | $0.00 |
| Foregone Income | $389.06 | $389.06 |
| Total | $643.21 | $643.21 |

### Cost Details:

| Cost Category | Component ID | Component Name | Component Description | Unit | Price ($/unit) | Quantity | Cost |
|---|---|---|---|---|---|---|---|
| Materials | 136 | Purple Coneflower (Echinacea purpurea) | Native Forbs and shipping. | Pound | $32.78 | 0.25 | $8.20 |
| Materials | 341 | Herbicide, Imazapic-NH4, salt | Product is typically used in these practices 512 and 645. Refer to WIN-PST for product names and active ingredients. Materials only. | Acre | $10.73 | 1 | $10.73 |
| Materials | 334 | Herbicide, Glyphosate | A broad-spectrum, non-selective systemic herbicide. Product is typically used in these practices 340, 645, 314, 666, and 512. Refer to WIN-PST for product names and active ingredients. Materials only. | Acre | $11.04 | 1 | $11.04 |
| Materials | 84 | Wild Rye, Virginia (Elymus virginicus) | Native Grasses and shipping. | Pound | $9.81 | 2 | $19.62 |
| Materials | 79 | Little Blue Stem (Schizachyrium scoparium) | Native Grasses and shipping. | Pound | $15.43 | 4 | $61.72 |
| Materials | 75 | Lime, ENM | Fertilizer: Limestone Spread on field. | Ton | $23.98 | 2 | $47.96 |
| Materials | 125 | Partidge Pea (Chamaecrista fasciculata) | Native Legumes and shipping. | Pound | $15.70 | 4 | $62.80 |
| Equipment/Installation | 960 | Seeding Operation, No Till/Grass Drill | No Till drill or grass drill for seeding. Includes all costs for equipment, power unit, and labor. | Acre | $19.08 | 1 | $19.08 |
| Equipment/Installation | 948 | Chemical, ground application | Chemical application performed by ground equipment. Equipment and labor costs included. | Acre | $6.50 | 2 | $13.00 |
| Foregone Income | 1961 | FI, Soybeans Dryland | Dryland Soybeans is Primary Crop | Acre | $385.53 | 0.5 | $192.77 |
| Foregone Income | 1959 | FI, Corn Dryland | Dryland Corn is Primary Crop | Acre | $392.59 | 0.5 | $196.30 |

## Scenario Worksheet

### Practice and Scenario Description:

| Information Type | Data |
|---|---|
| Region | Corn Belt |
| State | Ohio |
| Discipline Group | Agronomy |
| Practice Code/Name | 332 - Contour Buffer Strips |
| Scenario ID | 4 |
| Scenario Name | Native Grass, Organic |
| Scenario Description | Narrow strips of permanent, herbaceous vegetative cover established around the hill slope and alternated down the slope with wider cropped strips in between that are farmed on the contour. This practice applies to all organic cropland. Practice includes seedbed prep and planting of native species (scenario includes native grass/legume/forbs species) and foregone income for the area of the buffer strip that is taken out of production. |
| Before Practice Situation | Water Erosion Calculator (e.g. RUSLE2) indicates that there is a significant amount of sheet and rill erosion and/or a significant amount of sediment potenially delivered to the downslope edge of the field. A secondary concern is that there may not be enough wildlife/pollinator habitat, food source or refugia in the field or farm. |
| After Practice Situation | Native grasses and legumes/forbs will be established in strips in the field to meet the resource needs and producer objectives. Minimum widths shall be based on NRCS local design criteria specific to the purpose for installing the practice. Native species shall be selected that do not function as a host for diseases of a field crop and have physical charactaristics necessary to control water erosion to tolerable levels in the cropped area of the field. |
| Scenario Feature Measure | Number of Acres |
| Scenario Unit | Acre |
| Scenario Typical Size | 1 |

### Cost Summary:

| Cost Category | Scenario Cost | Scenario Cost/Unit |
|---|---|---|
| Materials | $200.30 | $200.30 |
| Equipment/Installation | $47.97 | $47.97 |
| Labor | $0.00 | $0.00 |
| Mobilization | $0.00 | $0.00 |
| Acquisition of Technical Knowledge | $0.00 | $0.00 |
| Foregone Income | $389.06 | $389.06 |
| Total | $637.33 | $637.33 |

### Cost Details:

| Cost Category | Component ID | Component Name | Component Description | Unit | Price ($/unit) | Quantity | Cost |
|---|---|---|---|---|---|---|---|
| Materials | 136 | Purple Coneflower (Echinacea purpurea) | Native Forbs and shipping. | Pound | $32.78 | 0.25 | $8.20 |
| Materials | 84 | Wild Rye, Virginia (Elymus virginicus) | Native Grasses and shipping. | Pound | $9.81 | 2 | $19.62 |
| Materials | 79 | Little Blue Stem (Schizachyrium scoparium) | Native Grasses and shipping. | Pound | $15.43 | 4 | $61.72 |
| Materials | 75 | Lime, ENM | Fertilizer: Limestone Spread on field. | Ton | $23.98 | 2 | $47.96 |
| Materials | 125 | Partidge Pea (Chamaecrista fasciculata) | Native Legumes and shipping. | Pound | $15.70 | 4 | $62.80 |
| Equipment/Installation | 960 | Seeding Operation, No Till/Grass Drill | No Till drill or grass drill for seeding. Includes all costs for equipment, power unit, and labor. | Acre | $19.08 | 1 | $19.08 |
| Equipment/Installation | 945 | Tillage, Light | Includes light disking (tandem) or field cultivator. Equipment and power unit costs. Labor is included. | Acre | $9.63 | 3 | $28.89 |
| Foregone Income | 1961 | FI, Soybeans Dryland | Dryland Soybeans is Primary Crop | Acre | $385.53 | 0.5 | $192.77 |
| Foregone Income | 1959 | FI, Corn Dryland | Dryland Corn is Primary Crop | Acre | $392.59 | 0.5 | $196.30 |

## Scenario Worksheet

### Practice and Scenario Description:

| Information Type | Data |
|---|---|
| Region | Corn Belt |
| State | Ohio |
| Discipline Group | Agronomy |
| Practice Code/Name | 332 - Contour Buffer Strips |
| Scenario ID | 5 |
| Scenario Name | Pollinator Habitat |
| Scenario Description | Narrow strips of permanent, herbaceous vegetative cover including mix of grasses, legumes and/or forbs that provides a mix of early, mid, and late season blooming forbs for pollinator habitat. Established around the hill slope and alternated down the slope with wider cropped strips in between that are farmed on the contour. This practice applies to all conventional cropland. Practice includes seedbed prep and planting of pollinator species. The area of the buffer strip is taken out of production. |
| Before Practice Situation | Water Erosion Calculator (e.g. RUSLE2) indicates that there is a significant amount of sheet and rill erosion and/or a significant amount of sediment potenially delivered to the downslope edge of the field. A secondary concern is that there may not be enough wildlife/pollinator habitat, food source or refugia in the field or farm. |
| After Practice Situation | Native grasses, legumes and forbs providing pollinator habitat will be established in strips in the field to meet the resource needs and producer objectives. Minimum widths shall be based on NRCS local design criteria specific to the purpose for installing the practice. Native species shall be selected that do not function as a host for diseases of a field crop and have physical charactaristics necessary to control water erosion to tolerable levels in the cropped area of the field. |
| Scenario Feature Measure | number of acres |
| Scenario Unit | Acre |
| Scenario Typical Size | 1 |

### Cost Summary:

| Cost Category | Scenario Cost | Scenario Cost/Unit |
|---|---|---|
| Materials | $264.43 | $264.43 |
| Equipment/Installation | $32.08 | $32.08 |
| Labor | $0.00 | $0.00 |
| Mobilization | $0.00 | $0.00 |
| Acquisition of Technical Knowledge | $0.00 | $0.00 |
| Foregone Income | $389.06 | $389.06 |
| Total | $685.57 | $685.57 |

### Cost Details:

| Cost Category | Component ID | Component Name | Component Description | Unit | Price ($/unit) | Quantity | Cost |
|---|---|---|---|---|---|---|---|
| Materials | 119 | Blue Wild Indigo (Baptisia australis) | Native Legumes and shipping. | Pound | $156.45 | 0.5 | $78.23 |
| Materials | 79 | Little Blue Stem (Schizachyrium scoparium) | Native Grasses and shipping. | Pound | $15.43 | 1 | $15.43 |
| Materials | 84 | Wild Rye, Virginia (Elymus virginicus) | Native Grasses and shipping. | Pound | $9.81 | 1 | $9.81 |
| Materials | 341 | Herbicide, Imazapic-NH4, salt | Product is typically used in these practices 512 and 645. Refer to WIN-PST for product names and active ingredients. Materials only. | Acre | $10.73 | 1 | $10.73 |
| Materials | 334 | Herbicide, Glyphosate | A broad-spectrum, non-selective systemic herbicide. Product is typically used in these practices 340, 645, 314, 666, and 512. Refer to WIN-PST for product names and active ingredients. Materials only. | Acre | $11.04 | 2 | $22.08 |
| Materials | 125 | Partidge Pea (Chamaecrista fasciculata) | Native Legumes and shipping. | Pound | $15.70 | 0.5 | $7.85 |
| Materials | 129 | Wild Senna (Cassia hebecarpa) | Native Legumes and shipping. | Pound | $68.25 | 0.5 | $34.13 |
| Materials | 136 | Purple Coneflower (Echinacea purpurea) | Native Forbs and shipping. | Pound | $32.78 | 0.2 | $6.56 |
| Materials | 75 | Lime, ENM | Fertilizer: Limestone Spread on field. | Ton | $23.98 | 2 | $47.96 |
| Materials | 133 | Smooth Aster (Aster laevis) | Native Forbs and shipping. | Pound | $217.74 | 0.126 | $27.44 |
| Materials | 148 | Black-Eyed Susan (Rudbeckia hirta) | Native Forbs and shipping. | Pound | $33.55 | 0.126 | $4.23 |

## Scenario Worksheet

### Practice and Scenario Description:

| Information Type | Data |
|---|---|
| Region | Corn Belt |
| State | Ohio |
| Discipline Group | Agronomy |
| Practice Code/Name | 332 - Contour Buffer Strips |
| Scenario ID | 6 |
| Scenario Name | Pollinator Habitat, Organic |
| Scenario Description | Narrow strips of permanent, herbaceous vegetative cover including mix of grasses, legumes and/or forbs that provides a mix of early, mid, and late season blooming forbs for pollinator habitat. Established around the hill slope and alternated down the slope with wider cropped strips in between that are farmed on the contour. This practice applies to all organic cropland. Practice includes seedbed prep and planting of pollinator species. The area of the buffer strip is taken out of production. |
| Before Practice Situation | Water Erosion Calculator (e.g. RUSLE2) indicates that there is a significant amount of sheet and rill erosion and/or a significant amount of sediment potenially delivered to the downslope edge of the field. A secondary concern is that there may not be enough wildlife/pollinator habitat, food source or refugia in the field or farm. |
| After Practice Situation | Native grasses, legumes and forbs providing pollinator habitat will be established in strips in the field to meet the resource needs and producer objectives. Minimum widths shall be based on NRCS local design criteria specific to the purpose for installing the practice. Native species shall be selected that do not function as a host for diseases of a field crop and have physical charactaristics necessary to control water erosion to tolerable levels in the cropped area of the field. |
| Scenario Feature Measure | number of acres |
| Scenario Unit | Acre |
| Scenario Typical Size | 1 |

### Cost Summary:

| Cost Category | Scenario Cost | Scenario Cost/Unit |
|---|---|---|
| Materials | $183.66 | $183.66 |
| Equipment/Installation | $47.97 | $47.97 |
| Labor | $0.00 | $0.00 |
| Mobilization | $0.00 | $0.00 |
| Acquisition of Technical Knowledge | $0.00 | $0.00 |
| Foregone Income | $389.06 | $389.06 |
| Total | $620.69 | $620.69 |

### Cost Details:

| Cost Category | Component ID | Component Name | Component Description | Unit | Price ($/unit) | Quantity | Cost |
|---|---|---|---|---|---|---|---|
| Materials | 119 | Blue Wild Indigo (Baptisia australis) | Native Legumes and shipping. | Pound | $156.45 | 0.5 | $78.23 |
| Materials | 79 | Little Blue Stem (Schizachyrium scoparium) | Native Grasses and shipping. | Pound | $15.43 | 1 | $15.43 |
| Materials | 84 | Wild Rye, Virginia (Elymus virginicus) | Native Grasses and shipping. | Pound | $9.81 | 1 | $9.81 |
| Materials | 125 | Partidge Pea (Chamaecrista fasciculata) | Native Legumes and shipping. | Pound | $15.70 | 0.5 | $7.85 |
| Materials | 129 | Wild Senna (Cassia hebecarpa) | Native Legumes and shipping. | Pound | $68.25 | 0.5 | $34.13 |
| Materials | 136 | Purple Coneflower (Echinacea purpurea) | Native Forbs and shipping. | Pound | $32.78 | 0.2 | $6.56 |
| Materials | 133 | Smooth Aster (Aster laevis) | Native Forbs and shipping. | Pound | $217.74 | 0.126 | $27.44 |
| Materials | 148 | Black-Eyed Susan (Rudbeckia hirta) | Native Forbs and shipping. | Pound | $33.55 | 0.126 | $4.23 |

## Scenario Worksheet

### Practice and Scenario Description:

| Information Type | Data |
|---|---|
| Region | Corn Belt |
| State | Ohio |
| Discipline Group | Range/Pasture Grazing |
| Practice Code/Name | 338 - Prescribed Burning |
| Scenario ID | 1 |
| Scenario Name | Prescribed Burn - Grassland > 10 acres |
| Scenario Description | Applying a prescribed burn according to designed burn plan and NRCS Prescribed Burning (338) standard and specifications in order to control undesirable species, improve wildlife habitat, improve plant productivity and/or quality, facilitate grazing distribution and maintain ecological processes. This scenario is based on a burn area consisting of herbaceous and/or low volatile woody fuel with no high volatile fuels. Burned firebreaks used to achieve total firebreak width are part of these burns. (Constructed firebreak cost is not included in cost of burn. Refer to Firebreak (394) standard and cost scenarios) |
| Before Practice Situation | Desirable plant composition is lacking due to reduced plant vigor, invasive species or improper livestock distribution. |
| After Practice Situation | Desirable plant composition is restored, plant vigor improved and invasive species reduced. Forage production and quality for livestock and /or wildlife is improved. |
| Scenario Feature Measure | Acres planned |
| Scenario Unit | Acre |
| Scenario Typical Size | 40 |

### Cost Summary:

| Cost Category | Scenario Cost | Scenario Cost/Unit |
|---|---|---|
| Materials | $19.95 | $0.50 |
| Equipment/Installation | $223.12 | $5.58 |
| Labor | $793.12 | $19.83 |
| Mobilization | $379.08 | $9.48 |
| Acquisition of Technical Knowledge | $116.67 | $2.92 |
| Foregone Income | $0.00 | $0.00 |
| Total | $1,531.94 | $38.30 |

### Cost Details:

| Cost Category | Component ID | Component Name | Component Description | Unit | Price ($/unit) | Quantity | Cost |
|---|---|---|---|---|---|---|---|
| Materials | 1596 | Fuel, ignition fuel mixture | Mixture of gasoline and diesel for ignition of prescribed burns. Materials only. | Gallon | $3.99 | 5 | $19.95 |
| Equipment/Installation | 965 | All terrain vehicles, ATV | Includes equipment, power unit and labor costs. | Hour | $27.89 | 4 | $111.56 |
| Equipment/Installation | 939 | Truck, Pickup | Equipment and power unit costs. Labor not included. | Hour | $25.51 | 4 | $102.04 |
| Equipment/Installation | 1602 | Water tank, portable | Portable water tank transported in a pick up truck. Typically with 200 gallon capacity includes tank with pump, hose and sprayer. Does not include the pickup truck. Equipment only. | Hour | $2.38 | 4 | $9.52 |
| Labor | 230 | Skilled Labor | Labor requiring a high level skill set: Includes carpenters, welders, electricians, conservation professionals involved with data collection, monitoring, and or record keeping, etc. | Hour | $31.31 | 16 | $500.96 |
| 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 | $36.52 | 8 | $292.16 |
| Mobilization | 1145 | Mobilization, Supervisor or Manager | Mobilization of supervisors or management. Includes crew supervisors, foremen and farm/ranch managers, etc. | Hour | $36.18 | 4 | $144.72 |
| Mobilization | 1141 | Mobilization, Skilled labor | Mobilization of skilled labor: Includes carpenters, welders, electricians, conservation professionals involved with data collection, monitoring, and or record keeping, etc. | Hour | $30.48 | 4 | $121.92 |
| Mobilization | 1137 | Mobilization, very small equipment | Equipment that is small enough to be transported by a pick-up truck with typical weights less than 3,500 pounds. Can be multiple pieces of equipment if all hauled simultaneously. | Each | $56.22 | 2 | $112.44 |
| Acquisition of Technical Knowledge | 294 | Training, Workshops | Educational seminar or series of meetings emphasizing interaction and exchange of information among a usually small number of participants. | Each | $116.67 | 1 | $116.67 |

## Scenario Worksheet

### Practice and Scenario Description:

| Information Type | Data |
|---|---|
| Region | Corn Belt |
| State | Ohio |
| Discipline Group | Range/Pasture Grazing |
| Practice Code/Name | 338 - Prescribed Burning |
| Scenario ID | 2 |
| Scenario Name | Prescribed Burn - Grassland, Small acreage (≤10 acres) |
| Scenario Description | Applying a prescribed burn according to designed burn plan and NRCS Prescribed Burning (338) standard and specifications in order to control undesirable species, improve wildlife habitat, improve plant productivity and/or quality, facilitate grazing distribution and maintain ecological processes. This scenario is based on a burn area consisting of herbaceous and/or low volatile woody fuel with no high volatile fuels. Burned firebreaks used to achieve total firebreak width are part of these burns. (Constructed firebreak cost is not included in cost of burn. Refer to Firebreak (394) standard and cost scenarios) |
| Before Practice Situation | Desirable plant composition is lacking due to reduced plant vigor, invasive species or improper livestock distribution. |
| After Practice Situation | Desirable plant composition is restored, plant vigor improved and invasive species reduced. Forage production and quality for livestock and /or wildlife is improved. |
| Scenario Feature Measure | Acres planned |
| Scenario Unit | Acre |
| Scenario Typical Size | 10 |

### Cost Summary:

| Cost Category | Scenario Cost | Scenario Cost/Unit |
|---|---|---|
| Materials | $19.95 | $2.00 |
| Equipment/Installation | $55.78 | $5.58 |
| Labor | $161.76 | $16.18 |
| Mobilization | $379.08 | $37.91 |
| Acquisition of Technical Knowledge | $116.67 | $11.67 |
| Foregone Income | $0.00 | $0.00 |
| Total | $733.24 | $73.32 |

### Cost Details:

| Cost Category | Component ID | Component Name | Component Description | Unit | Price ($/unit) | Quantity | Cost |
|---|---|---|---|---|---|---|---|
| Materials | 1596 | Fuel, ignition fuel mixture | Mixture of gasoline and diesel for ignition of prescribed burns. Materials only. | Gallon | $3.99 | 5 | $19.95 |
| Equipment/Installation | 965 | All terrain vehicles, ATV | Includes equipment, power unit and labor costs. | Hour | $27.89 | 1 | $27.89 |
| Equipment/Installation | 939 | Truck, Pickup | Equipment and power unit costs. Labor not included. | Hour | $25.51 | 1 | $25.51 |
| Equipment/Installation | 1602 | Water tank, portable | Portable water tank transported in a pick up truck. Typically with 200 gallon capacity includes tank with pump, hose and sprayer. Does not include the pickup truck. Equipment only. | Hour | $2.38 | 1 | $2.38 |
| Labor | 230 | Skilled Labor | Labor requiring a high level skill set: Includes carpenters, welders, electricians, conservation professionals involved with data collection, monitoring, and or record keeping, etc. | Hour | $31.31 | 4 | $125.24 |
| 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 | $36.52 | 1 | $36.52 |
| Mobilization | 1145 | Mobilization, Supervisor or Manager | Mobilization of supervisors or management. Includes crew supervisors, foremen and farm/ranch managers, etc. | Hour | $36.18 | 4 | $144.72 |
| Mobilization | 1141 | Mobilization, Skilled labor | Mobilization of skilled labor: Includes carpenters, welders, electricians, conservation professionals involved with data collection, monitoring, and or record keeping, etc. | Hour | $30.48 | 4 | $121.92 |
| Mobilization | 1137 | Mobilization, very small equipment | Equipment that is small enough to be transported by a pick-up truck with typical weights less than 3,500 pounds. Can be multiple pieces of equipment if all hauled simultaneously. | Each | $56.22 | 2 | $112.44 |
| Acquisition of Technical Knowledge | 294 | Training, Workshops | Educational seminar or series of meetings emphasizing interaction and exchange of information among a usually small number of participants. | Each | $116.67 | 1 | $116.67 |

## Scenario Worksheet

### Practice and Scenario Description:

| Information Type | Data |
|---|---|
| Region | Corn Belt |
| State | Ohio |
| Discipline Group | Agronomy |
| Practice Code/Name | 340 - Cover Crop |
| Scenario ID | 5 |
| Scenario Name | Organic Cover Crop |
| Scenario Description | Typically a small grain or small grain-legume mix (may also use forage sorghum, radishes, turnips, buckwheat, etc) will be planted as a cover crop immediately after harvest of an organically grown crop, and will be followed by an organically grown crop that will utilize the residue as a mulch. This scenario assumes that seed will be planted with a no-till drill. The cover crop should be allowed to generate as much biomass as possible, without delaying planting of the following crop. The cover crop will be terminated using a mechnical kill method (mowing, rolling, undercutting, etc.), a minimum of 3 weeks prior to planting the subsequent crop. This scenario REQUIRES use of Certified Organic Seed. |
| Before Practice Situation | Organically grown crops such as various vegetable and fruit crops (along with organically produced row crops) are grown and harvested in mid-late fall. Fields are disked immediately following harvest. Residue amounts after harvest average 30% or less, resulting in bare soil being exposed to wind erosion and/or intense rainfall during the fall, winter, and early spring. Over the winter residue degrades and sediment/nutrient runoff from fields increases. Sheet and rill erosion occurs with visible rills by spring. Runoff from the fields flows into streams, water courses or other water bodies causing degradation to the receiving waters. Soil health (soil organic matter) declines over time as a result of tillage practices, low residue crops, and long periods of bare soil. |
| After Practice Situation | Within 30 days after harvest of organic crop, fields are planted with a small grain-legume mix cover crop, typically rye and clover. The cover crop is seeded with a no-till drill. No additional fertilizer is applied with the cover crop. The cover crop provides soil cover by late fall, throughout the winter, and into the early spring. Runoff and erosion are reduced and no rills are visible on the soil surface in the spring. The cover crop is terminated with using a mechnical kill method (mowing, rolling, undercutting, etc.), prior to spring planting as late as feasible to maximize plant biomass production. Over time, soil health is improved due to the additional biomass, ground cover, and plant diversity introduced to the cropping system. Wind erosion is reduced by standing resides. Cover crop residues left on the surface may maximize weed control by increasing allelopathic and mulching effect. |
| Scenario Feature Measure | Area planted |
| Scenario Unit | Acre |
| Scenario Typical Size | 25 |

### Cost Summary:

| Cost Category | Scenario Cost | Scenario Cost/Unit |
|---|---|---|
| Materials | $1,349.00 | $53.96 |
| Equipment/Installation | $1,076.75 | $43.07 |
| Labor | $0.00 | $0.00 |
| Mobilization | $0.00 | $0.00 |
| Acquisition of Technical Knowledge | $0.00 | $0.00 |
| Foregone Income | $0.00 | $0.00 |
| Total | $2,425.75 | $97.03 |

### Cost Details:

| Cost Category | Component ID | Component Name | Component Description | Unit | Price ($/unit) | Quantity | Cost |
|---|---|---|---|---|---|---|---|
| Materials | 192 | Certified Organic, Crimson Clover (Trifolium incarnatum) | Legumes, Cover Crops and shipping. | Pound | $5.35 | 200 | $1,070.00 |
| Materials | 202 | Certified Organic, Oats (Avena sativa) | Small Grains, Cover Crops. Shipping not included. | Pound | $0.62 | 450 | $279.00 |
| Equipment/Installation | 945 | Tillage, Light | Includes light disking (tandem) or field cultivator. Includes equipment, power unit and labor costs. | Acre | $9.62 | 25 | $240.50 |
| Equipment/Installation | 957 | Mechanical weed control, Vegetation termination | Mechanical operations, Includes: Roller/crimper, mower, shredder, etc. Includes equipment, power unit and labor costs. | Acre | $19.43 | 25 | $485.75 |
| Equipment/Installation | 960 | Seeding Operation, No Till/Grass Drill | No Till drill or grass drill for seeding. Includes equipment, power unit and labor costs. | Acre | $14.02 | 25 | $350.50 |

## Scenario Worksheet

### Practice and Scenario Description:

| Information Type | Data |
|---|---|
| Region | Corn Belt |
| State | Ohio |
| Discipline Group | Agronomy |
| Practice Code/Name | 340 - Cover Crop |
| Scenario ID | 4 |
| Scenario Name | Species Mix |
| Scenario Description | This scenario reflects the establishment of a diverse mix of cover crops consistng of two or more species which can include a combination of grasses, legumes, forbs, or other herbaceous plants. Cover crop will be planted immediately after harvest of a row crop, and will be followed by a row crop that will utilize the residue as a mulch. This scenario assumes that seed will be planted with a no-till drill. The cover crop should be allowed to generate as much biomass as possible, without delaying planting of the following crop. The cover crop will be terminated using approved chemical and/or mechanical methods. |
| Before Practice Situation | Row crops such as corn, soybeans, or cotton are grown and harvested in mid-late fall. Fields are disked immediately following harvest. Residue amounts after harvest average 30% or less, resulting in bare soil being exposed to wind erosion and/or intense rainfall during the fall, winter, and early spring. Over the winter residue degrades and sediment/nutrient runoff from fields increases. Sheet and rill erosion occurs with visible rills by spring. Runoff from the fields flows into streams, water courses or other water bodies causing degradation to the receiving waters. Soil health (soil organic matter) declines over time as a result of tillage practices, low residue crops, and long periods of bare soil. |
| After Practice Situation | Within 30 days after harvest of row crop, fields are planted with a diverse mix of cover crop species. The cover crop is seeded with a no-till drill. No additional fertilizer is applied with the cover crop. The cover crop provides soil cover by late fall, throughout the winter, and into the early spring. Runoff and erosion are reduced and no rills are visible on the soil surface in the spring. Wind erosion is reduced by standing residues. The cover crop is terminated with approved chemical and/or mechanical methods prior to spring planting as late as feasible to maximize plant biomass production. Over time, soil health is improved at an accelerated pace due to the diversity in additional biomass and ground cover which provides increased soil infiltration, and plant diversity introduced to the cropping system. Cover crop residues left on the surface may maximize weed control by increasing allelopathic and mulching effect. |
| Scenario Feature Measure | Area planted |
| Scenario Unit | Acre |
| Scenario Typical Size | 100 |

### Cost Summary:

| Cost Category | Scenario Cost | Scenario Cost/Unit |
|---|---|---|
| Materials | $3,044.00 | $30.44 |
| Equipment/Installation | $1,829.00 | $18.29 |
| Labor | $0.00 | $0.00 |
| Mobilization | $0.00 | $0.00 |
| Acquisition of Technical Knowledge | $0.00 | $0.00 |
| Foregone Income | $0.00 | $0.00 |
| Total | $4,873.00 | $48.73 |

### Cost Details:

| Cost Category | Component ID | Component Name | Component Description | Unit | Price ($/unit) | Quantity | Cost |
|---|---|---|---|---|---|---|---|
| Materials | 112 | Red Clover (Trifolium pratense) | Introduced Legumes and shipping. | Pound | $2.60 | 400 | $1,040.00 |
| Materials | 198 | Rye, Cereal (Secale cereale L.) | Small Grains, Cover Crops. Shipping not included. | Pound | $0.30 | 3000 | $900.00 |
| Materials | 334 | Herbicide, Glyphosate | A broad-spectrum, non-selective systemic herbicide. Product is typically used in these practices 340, 645, 314, 666, and 512. Refer to WIN-PST for product names and active ingredients. Materials only. | Acre | $11.04 | 100 | $1,104.00 |
| Equipment/Installation | 948 | Chemical, ground application | Chemical application performed by ground equipment. Includes equipment, power unit and labor costs. | Acre | $4.27 | 100 | $427.00 |
| Equipment/Installation | 960 | Seeding Operation, No Till/Grass Drill | No Till drill or grass drill for seeding. Includes equipment, power unit and labor costs. | Acre | $14.02 | 100 | $1,402.00 |

## Scenario Worksheet

### Practice and Scenario Description:

| Information Type | Data |
|---|---|
| Region | Corn Belt |
| State | Ohio |
| Discipline Group | Agronomy |
| Practice Code/Name | 340 - Cover Crop |
| Scenario ID | 3 |
| Scenario Name | Winter Kill Species |
| Scenario Description | Typically a small grain or small grain-brassica mix (may also use forage sorghum,legumes, buckwheat, etc) will be planted as a cover crop immediately after harvest of a row crop, and will be followed by a row crop that will utilize the residue as a mulch. This scenario assumes that seed will be planted with a no-till drill. The cover crop species established under this scenario will winter kill, meaning no species termination is required. |
| Before Practice Situation | Row crops such as corn, soybeans, or cotton are grown and harvested in mid-late fall. Fields are disked immediately following harvest. Residue amounts after harvest average 30% or less, resulting in bare soil being exposed to wind erosion and/or intense rainfall during the fall, winter, and early spring. Over the winter residue degrades and sediment/nutrient runoff from fields increases. Sheet and rill erosion occurs with visible rills by spring. Runoff from the fields flows into streams, water courses or other water bodies causing degradation to the receiving waters. Soil health (soil organic matter) declines over time as a result of tillage practices, low residue crops, and long periods of bare soil. |
| After Practice Situation | Within 30 days after harvest of row crop, fields are planted with a small grain-brassica mix cover crop, typically oats and oilseed radish. The cover crop is seeded with a no-till drill. No additional fertilizer is applied with the cover crop. The cover crop provides soil cover by late fall, throughout the winter, and into the early spring. Runoff and erosion are reduced and no rills are visible on the soil surface in the spring. The cover crop is established using winter kill species which should not require termination in the spring. Over time, soil health is improved due to the additional biomass, ground cover, and plant diversity introduced to the cropping system. Wind erosion is reduced by standing resides. Cover crop residues left on the surface may maximize weed control by increasing allelopathic and mulching effect. |
| Scenario Feature Measure | Area planted |
| Scenario Unit | Acre |
| Scenario Typical Size | 100 |

### Cost Summary:

| Cost Category | Scenario Cost | Scenario Cost/Unit |
|---|---|---|
| Materials | $1,862.00 | $18.62 |
| Equipment/Installation | $1,402.00 | $14.02 |
| Labor | $0.00 | $0.00 |
| Mobilization | $0.00 | $0.00 |
| Acquisition of Technical Knowledge | $0.00 | $0.00 |
| Foregone Income | $0.00 | $0.00 |
| Total | $3,264.00 | $32.64 |

### Cost Details:

| Cost Category | Component ID | Component Name | Component Description | Unit | Price ($/unit) | Quantity | Cost |
|---|---|---|---|---|---|---|---|
| Materials | 197 | Oats (Avena sativa) | Small Grains, Cover Crops. Shipping not included. | Pound | $0.46 | 2500 | $1,150.00 |
| Materials | 168 | Oilseed Radish (Raphanus sativus var. oleiformis) | Brassicas / Non-Legume Broadleaf, Cover Crops and shipping. | Pound | $3.56 | 200 | $712.00 |
| Equipment/Installation | 960 | Seeding Operation, No Till/Grass Drill | No Till drill or grass drill for seeding. Includes equipment, power unit and labor costs. | Acre | $14.02 | 100 | $1,402.00 |

## Scenario Worksheet

### Practice and Scenario Description:

| Information Type | Data |
|---|---|
| Region | Corn Belt |
| State | Ohio |
| Discipline Group | Agronomy |
| Practice Code/Name | 342 - Critical Area Planting |
| Scenario ID | 2 |
| Scenario Name | Grass/legume mix-moderate grading |
| Scenario Description | Establishment of permanent vegetation on a site that is void or nearly void of vegetation due to a natural or human disturbance. Costs include a dozer for grading and shaping of small gullies, seedbed preparation with typical tillage implements, grass/legume seed, companion crop, and fertilizer and lime with application. |
| Before Practice Situation | Areas that are void or nearly void of vegetation, resulting in bare soil being exposed to erosive processes. The exposed areas may be caused from natural occurrences (fire, flood, etc) or human disturbance. The exposed areas have visible rills and small gullies averaging 1 foot in depth and 1 foot in width. Runoff from the area flows into streams, water courses or other water bodies causing degradation to the receiving waters. The soil typically has a pH imbalance and low fertility. |
| After Practice Situation | This typical 1.0 acre critical area is stabilized by grading and shaping the small gullies with a dozer (6 hours) and then applying fertilizer, lime and seed. Soil amendments will be incorporated at an depth of six inches to improve fertility and ensure establishment of permanent vegetative cover. Apply 90 lbs of nitrogen, 90 lbs of phosphorus, and 90 lbs of potassium, along with an application of 2 tons of lime. Prepare a firm, weed free seedbed so that proper germination and stand establishment are ensured. Once the seedbed has been prepared, drill the following mixture for a vegetative cover: Smooth Bromegrass (20 lbs/ac), Perennial Ryegrass (10 lbs/ac), and Red Clover (8 lbs/ac) with a nurse crop of oats at a seeding rate of 32 lbs per acre. |
| Scenario Feature Measure | area seeded |
| Scenario Unit | Acre |
| Scenario Typical Size | 1 |

### Cost Summary:

| Cost Category | Scenario Cost | Scenario Cost/Unit |
|---|---|---|
| Materials | $325.18 | $325.18 |
| Equipment/Installation | $368.69 | $368.69 |
| Labor | $160.74 | $160.74 |
| Mobilization | $229.59 | $229.59 |
| Acquisition of Technical Knowledge | $0.00 | $0.00 |
| Foregone Income | $0.00 | $0.00 |
| Total | $1,084.20 | $1,084.20 |

### Cost Details:

| Cost Category | Component ID | Component Name | Component Description | Unit | Price ($/unit) | Quantity | Cost |
|---|---|---|---|---|---|---|---|
| Materials | 112 | Red Clover (Trifolium pratense) | Introduced Legumes and shipping. | Pound | $2.60 | 8 | $20.80 |
| Materials | 197 | Oats (Avena sativa) | Small Grains, Cover Crops. Shipping not included. | Pound | $0.46 | 32 | $14.72 |
| Materials | 75 | Lime, ENM | Fertilizer: Limestone Spread on field. | Ton | $23.98 | 2 | $47.96 |
| Materials | 71 | Nitrogen (N), Urea | Price per pound of N supplied by Urea. Price is not per pound of total product applied, no conversion is needed. | Pound | $0.60 | 90 | $54.00 |
| Materials | 73 | Phosphorus, P2O5 | Price per pound of P2O5 supplied by Superphosphate. Price is not per pound of total product applied, no conversion is needed. | Pound | $0.65 | 90 | $58.50 |
| Materials | 74 | Potassium, K2O | K2O supplied by Muriate Of Potash. Price is not per pound of total product applied, no conversion is needed. | Pound | $0.52 | 90 | $46.80 |
| Materials | 95 | Smooth Bromegrass (Bromus inermis) | Introduced Perennial Grasses and shipping. | Pound | $3.15 | 20 | $63.00 |
| Materials | 93 | Perennial Ryegrass (Lolium perenne) | Introduced Perennial Grasses and shipping. | Pound | $1.94 | 10 | $19.40 |
| Equipment/Installation | 1100 | Cultipacking | Includes equipment, power unit and labor costs. | Acre | $7.67 | 1 | $7.67 |
| Equipment/Installation | 960 | Seeding Operation, No Till/Grass Drill | No Till drill or grass drill for seeding. Includes equipment, power unit and labor costs. | Acre | $14.02 | 1 | $14.02 |
| Equipment/Installation | 950 | Fertilizer, ground application, dry bulk | Dry bulk fertilizer application performed by ground equipment. Includes equipment, power unit and labor costs. | Acre | $6.88 | 1 | $6.88 |
| Equipment/Installation | 945 | Tillage, Light | Includes light disking (tandem) or field cultivator. Includes equipment, power unit and labor costs. | Acre | $9.62 | 2 | $19.24 |
| Equipment/Installation | 929 | Dozer, 80 HP | Track mounted Dozer with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included. | Hour | $53.48 | 6 | $320.88 |
| Labor | 233 | Equipment Operators, Heavy | Includes: Cranes, Hydraulic Excavators >=50 HP, Dozers, Paving Machines, Rock Trenchers, Trenchers >=12", Dump Trucks, Ag Equipment >=150 HP, Scrapers, Water Wagons. | Hour | $26.79 | 6 | $160.74 |
| Mobilization | 1139 | Mobilization, medium equipment | Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds. | Each | $203.05 | 1 | $203.05 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Mobilization | 1144 | Mobilization, Heavy Equipment Operator | Mobilization of heavy equipment operators: Hydraulic Excavators >=50 HP, Dozers, Paving Machines, Rock Trenchers, Trenchers >=12", Dump Trucks, Ag Equipment >=150 HP, Scrapers, Water Wagons. | Hour | $26.54 | 1 | $26.54 |

## Scenario Worksheet

### Practice and Scenario Description:

| Information Type | Data |
|---|---|
| Region | Corn Belt |
| State | Ohio |
| Discipline Group | Agronomy |
| Practice Code/Name | 342 - Critical Area Planting |
| Scenario ID | 5 |
| Scenario Name | Heavy Seeding |
| Scenario Description | Establishment of permanent vegetation on a site that is void or nearly void of vegetation due to a natural occurrence or a newly constructed conservation practice. Costs include seedbed preparation with typical tillage implements, grass seed, fertilizer and lime with application. |
| Before Practice Situation | Areas that are void or nearly void of vegetation, resulting in bare soil being exposed to erosive processes. The exposed areas may be caused from recent natural occurrences (fire, flood, wind, etc.) or due to newly constructed conservation practices such as waterways, terraces, water and sediment basins or dams. The exposed areas will be subject to wind erosion, sheet and rill erosion, or visible rills may have already occurred. Runoff from the area flows into streams, water courses or other water bodies causing degradation to the receiving waters. The soil typically has a pH imbalance and low fertility. |
| After Practice Situation | This typical 1.0 acre critical area is stabilized by applying fertilizer, lime and seed. Soil amendments will be incorporated at an depth of six inches to improve fertility and ensure establishment of permanent vegetative cover. Apply 90 lbs of nitrogen, 90 lbs of phosphorus, and 90 lbs of potassium, along with an application of 2 tons of lime. Prepare a firm, weed free seedbed so that proper germination and stand establishment are ensured. Once the seedbed has been prepared, broadcast the following mixture for a vegetative cover: Tall Fescue (40 lbs/ac), Perennial Ryegrass (25 lbs/ac), and Kentucky Blue (20 lbs/ac). |
| Scenario Feature Measure | Acres Seeded |
| Scenario Unit | Acre |
| Scenario Typical Size | 1 |

### Cost Summary:

| Cost Category | Scenario Cost | Scenario Cost/Unit |
|---|---|---|
| Materials | $388.16 | $388.16 |
| Equipment/Installation | $63.47 | $63.47 |
| Labor | $0.00 | $0.00 |
| Mobilization | $138.58 | $138.58 |
| Acquisition of Technical Knowledge | $0.00 | $0.00 |
| Foregone Income | $0.00 | $0.00 |
| Total | $590.21 | $590.21 |

### Cost Details:

| Cost Category | Component ID | Component Name | Component Description | Unit | Price ($/unit) | Quantity | Cost |
|---|---|---|---|---|---|---|---|
| Equipment/Installation | 946 | Tillage, Primary | Includes heavy disking (offset) or chisel plow. Includes equipment, power unit and labor costs. | Acre | $14.59 | 2 | $29.18 |
| Materials | 74 | Potassium, K2O | K2O supplied by Muriate Of Potash. Price is not per pound of total product applied, no conversion is needed. | Pound | $0.52 | 90 | $46.80 |
| Materials | 71 | Nitrogen (N), Urea | Price per pound of N supplied by Urea. Price is not per pound of total product applied, no conversion is needed. | Pound | $0.60 | 90 | $54.00 |
| Materials | 73 | Phosphorus, P2O5 | Price per pound of P2O5 supplied by Superphosphate. Price is not per pound of total product applied, no conversion is needed. | Pound | $0.65 | 90 | $58.50 |
| Materials | 75 | Lime, ENM | Fertilizer: Limestone Spread on field. | Ton | $23.98 | 2 | $47.96 |
| Materials | 87 | Fescue, Tall (Festuca arundinacea) | Introduced Perennial Grasses and shipping. | Pound | $1.80 | 40 | $72.00 |
| Materials | 91 | Kentucky Bluegrass (Poa pratensis) | Introduced Perennial Grasses and shipping. | Pound | $3.02 | 20 | $60.40 |
| Materials | 93 | Perennial Ryegrass (Lolium perenne) | Introduced Perennial Grasses and shipping. | Pound | $1.94 | 25 | $48.50 |
| Equipment/Installation | 959 | Seeding Operation, Broadcast, Ground | Broadcast seed via ground operation. May require post tillage operation to incorporate seed. Includes equipment, power unit and labor costs. | Acre | $19.74 | 1 | $19.74 |
| Equipment/Installation | 1100 | Cultipacking | Includes equipment, power unit and labor costs. | Acre | $7.67 | 1 | $7.67 |
| Equipment/Installation | 950 | Fertilizer, ground application, dry bulk | Dry bulk fertilizer application performed by ground equipment. Includes equipment, power unit and labor costs. | Acre | $6.88 | 1 | $6.88 |
| Mobilization | 1138 | Mobilization, small equipment | Equipment <70 HP but can't be transported by a pick-up truck or with typical weights between 3,500 to 14,000 pounds. | Each | $138.58 | 1 | $138.58 |

## Scenario Worksheet

### Practice and Scenario Description:

| Information Type | Data |
|---|---|
| Region | Corn Belt |
| State | Ohio |
| Discipline Group | Agronomy |
| Practice Code/Name | 342 - Critical Area Planting |
| Scenario ID | 4 |
| Scenario Name | Organic Grass/legume mix-moderate grading |
| Scenario Description | Establishment of permanent vegetation on a site that is void or nearly void of vegetation due to a natural or human disturbance. Costs include a dozer for grading and shaping of small gullies, seedbed preparation with typical tillage implements, grass/legume seed, companion crop, and fertilizer and lime with application. Certified organic seed and fertilizer based upon NOP approved fertilizer inputs will be used where available. |
| Before Practice Situation | Areas that are void or nearly void of vegetation, resulting in bare soil being exposed to erosive processes. The exposed areas may be caused from natural occurrences (fire, flood, etc) or human disturbance. The exposed areas have visible rills and small gullies averaging 1 foot in depth and 1 foot in width. Runoff from the area flows into streams, water courses or other water bodies causing degradation to the receiving waters. The soil typically has a pH imbalance and low fertility. |
| After Practice Situation | This typical 1.0 acre critical area is stabilized by grading and shaping the small gullies with a dozer (6 hours) and then applying fertilizer, lime and seed. Soil amendments will be incorporated at an depth of six inches to improve fertility and ensure establishment of permanent vegetative cover. The plant nutrients will supplied by a blend of organic soil amendments. Apply 90 lbs of nitrogen, 90 lbs of phosphorus, and 90 lbs of potassium, along with an application of 2 tons of lime. Prepare a firm, weed free seedbed so that proper germination and stand establishment are ensured. Once the seedbed has been prepared, drill the following mixture for a vegetative cover: Smooth Bromegrass (20 lbs/ac), Perennial Ryegrass (10 lbs/ac), and Red Clover (8 lbs/ac) with a nurse crop of oats at a seeding rate of 32 lbs per acre. Organic seed will be used where available. |
| Scenario Feature Measure | |
| Scenario Unit | Acre |
| Scenario Typical Size | 1 |

### Cost Summary:

| Cost Category | Scenario Cost | Scenario Cost/Unit |
|---|---|---|
| Materials | $866.58 | $866.58 |
| Equipment/Installation | $368.69 | $368.69 |
| Labor | $160.74 | $160.74 |
| Mobilization | $229.59 | $229.59 |
| Acquisition of Technical Knowledge | $0.00 | $0.00 |
| Foregone Income | $0.00 | $0.00 |
| Total | $1,625.60 | $1,625.60 |

### Cost Details:

| Cost Category | Component ID | Component Name | Component Description | Unit | Price ($/unit) | Quantity | Cost |
|---|---|---|---|---|---|---|---|
| Materials | 117 | Certified Organic, Red Clover (Trifolium pratense) | Introduced Legumes and shipping. | Pound | $8.46 | 8 | $67.68 |
| Materials | 266 | Nitrogen, Organic | ORGANIC Nitrogen | Pound | $2.43 | 90 | $218.70 |
| Materials | 267 | Phosphorus, Organic | ORGANIC Phosphorus | Pound | $2.92 | 90 | $262.80 |
| Materials | 202 | Certified Organic, Oats (Avena sativa) | Small Grains, Cover Crops. Shipping not included. | Pound | $0.62 | 32 | $19.84 |
| Materials | 268 | Potassium, Organic | ORGANIC Potassium | Pound | $1.29 | 90 | $116.10 |
| Materials | 75 | Lime, ENM | Fertilizer: Limestone Spread on field. | Ton | $23.98 | 2 | $47.96 |
| Materials | 102 | Certified Organic, Smooth Bromegrass (Bromus inermis) | Introduced Perennial Grasses and shipping. | Pound | $4.41 | 20 | $88.20 |
| Materials | 101 | Certified Organic, Perennial Ryegrass (Lolium perenne) | Introduced Perennial Grasses and shipping. | Pound | $4.53 | 10 | $45.30 |
| Equipment/Installation | 1100 | Cultipacking | Includes equipment, power unit and labor costs. | Acre | $7.67 | 1 | $7.67 |
| Equipment/Installation | 960 | Seeding Operation, No Till/Grass Drill | No Till drill or grass drill for seeding. Includes equipment, power unit and labor costs. | Acre | $14.02 | 1 | $14.02 |
| Equipment/Installation | 950 | Fertilizer, ground application, dry bulk | Dry bulk fertilizer application performed by ground equipment. Includes equipment, power unit and labor costs. | Acre | $6.88 | 1 | $6.88 |
| Equipment/Installation | 945 | Tillage, Light | Includes light disking (tandem) or field cultivator. Includes equipment, power unit and labor costs. | Acre | $9.62 | 2 | $19.24 |
| Equipment/Installation | 929 | Dozer, 80 HP | Track mounted Dozer with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included. | Hour | $53.48 | 6 | $320.88 |
| Labor | 233 | Equipment Operators, Heavy | Includes: Cranes, Hydraulic Excavators >=50 HP, Dozers, Paving Machines, Rock Trenchers, Trenchers >=12", Dump Trucks, Ag Equipment >=150 HP, Scrapers, Water Wagons. | Hour | $26.79 | 6 | $160.74 |
| Mobilization | 1139 | Mobilization, medium equipment | Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds. | Each | $203.05 | 1 | $203.05 |
| Mobilization | 1144 | Mobilization, Heavy Equipment Operator | Mobilization of heavy equipment operators: Hydraulic Excavators >=50 HP, Dozers, Paving Machines, Rock Trenchers, Trenchers >=12", Dump Trucks, Ag Equipment >=150 HP, Scrapers, Water Wagons. | Hour | $26.54 | 1 | $26.54 |

## Scenario Worksheet

### Practice and Scenario Description:

| Information Type | Data |
|---|---|
| Region | Corn Belt |
| State | Ohio |
| Discipline Group | Agronomy |
| Practice Code/Name | 344 - Residue Management, Seasonal |
| Scenario ID | 1 |
| Scenario Name | Residue Management, Seasonal |
| Scenario Description | Historically, producers have focused tillage activities in the spring and fall, both immediately before and after the cash crop. Tillage activities have been intensive, and have served to both suppress weeds, reduce insect populations, and prepare fields for both immediate (spring) and subsequent (fall) planting events. These periods of intensive tillage have led to excessive soil loss, often above the Soil Loss Tolerance (T), due to the loss of critical crop or weed residue and have also resulted in a loss of seasonal wildlife cover. The RUSLE2 and/or WEPS models will be used to review the farming operation and determine if enough residue is being retained between planted crops to keep soil loss below T and the appropriate wildlife habitat tools will be used to assess wildlife habitat - where wildlife is an identified concern. The producer will then remove operations, or select alternate operations, to manage residue between planted crops. |
| Before Practice Situation | Row crops or small grains are grown and harvested. Fields are tilled immediately following harvest, with rows in some fields being hipped for drainage. Residue amounts after harvest average 30% or less, resulting in bare soil being exposed to wind erosion and/or intense rainfall during the fall, winter, and early spring and a poor cover situation for wildlife. Over the winter residue degrades and sediment/nutrient runoff from fields increases. wind and/or water erosion occurs. Spring tillage and seedbed preparation activities occur as early as possible in the late winter and early spring. Weed control is accomplished primarily through tillage, requiring multiple operations. Sediment and nutrient runoff from the fields flows into streams, water courses or other water bodies causing degradation to the receiving waters. Soil health (soil organic matter) declines over time as a result of tillage practices, low residue monocultures, and long periods of bare soil. |
| After Practice Situation | 344 is applied per the practice plan following all the appropriate criteria for the planned purpose(s). No tillage occurs after crop harvest until just prior to planting the next crop. In warmer areas, winter weeds or cover crops grow throughout the winter months. The residue that remains on the soil surface provides soil cover during late fall, throughout the winter, and into the early spring. Runoff and erosion are reduced and and wildlife cover is improved . Wind erosion is reduced by standing residues. Winter weeds or the cover crop is terminated with tillage, a roller-crimper, shredding, with an approved herbicide, or a combination of these methods prior to spring planting as late as feasible. Over time, soil health is improved due to the additional biomass, ground cover, soil infiltration, and plant diversity in the cropping system. |
| Scenario Feature Measure | Area planted |
| Scenario Unit | Acre |
| Scenario Typical Size | 40 |

### Cost Summary:

| Cost Category | Scenario Cost | Scenario Cost/Unit |
|---|---|---|
| Materials | $0.00 | $0.00 |
| Equipment/Installation | $0.00 | $0.00 |
| Labor | $0.00 | $0.00 |
| Mobilization | $0.00 | $0.00 |
| Acquisition of Technical Knowledge | $172.67 | $4.32 |
| Foregone Income | $0.00 | $0.00 |
| Total | $172.67 | $4.32 |

### Cost Details:

| Cost Category | Component ID | Component Name | Component Description | Unit | Price ($/unit) | Quantity | Cost |
|---|---|---|---|---|---|---|---|
| Acquisition of Technical Knowledge | 294 | Training, Workshops | Educational seminar or series of meetings emphasizing interaction and exchange of information among a usually small number of participants. | Each | $116.67 | 1 | $116.67 |
| Acquisition of Technical Knowledge | 297 | Transportation | Mileage to attend a training conference, workshop, or TSP travel associated with developing Conservation Activity Plan. | Mile | $0.56 | 100 | $56.00 |

## Scenario Worksheet

### Practice and Scenario Description:

| Information Type | Data |
|---|---|
| Region | Corn Belt |
| State | Ohio |
| Discipline Group | Agronomy |
| Practice Code/Name | 345 - Res. & Tillage Mgt, Mulch-till |
| Scenario ID | 1 |
| Scenario Name | Mulch Till Basic |
| Scenario Description | Mulch-till is managing the amount, orientation and distribution of crop and other plant residue on the soil surface year round while limiting the soil-disturbing activities used to grow crops in systems where the entire field surface is tilled prior to planting. This practice includes tillage methods commonly referred to as mulch tillage or chiseling and disking. It applies to stubble mulching on summer-fallowed land, to tillage for annually planted crops and to tillage for planted crops and to tillage for planting perennial crops. All residue shall be uniformly surface throughout critical wind erosion period. All residue shall be uniformly distributed over the entire field and not burned or removed. These periods of intensive tillage have led to excessive soil loss, often above the Soil Loss Tolerance (T), due to the loss of critical crop or weed residue. The RUSLE2 model will be used to review the farming operation and determine if enough residue is being retained, throughout the rotation, to keep soil loss below T. The producer will then remove operations, or select alternate operations, to reduce erosion below T. |
| Before Practice Situation | Row crops such as corn or soybeans are grown and harvested in mid-late fall. Fields are disked immediately following harvest, with rows in some fields being hipped for drainage. Residue amounts after harvest average 30% or less, resulting in bare soil being exposed to wind erosion and/or intense rainfall during the fall, winter, and early spring. Over the winter residue degrades and sediment/nutrient runoff from fields increases. Sheet and rill erosion occurs with visible rills by spring. Spring tillage and seedbed preparation activities occur as early as possible in the late winter and early spring. Weed control is accomplished primarily through tillage, requiring multiple operations. Runoff from the fields flows into streams, water courses or other water bodies causing degradation to the receiving waters. Soil health (soil organic matter) declines over time as a result of tillage practices, low residue monocultures, and long periods of bare soil. |
| After Practice Situation | Mulch tillage applies to all cropland and other lands where crops are planed. It applies to stubble mulching on summer fallowed land to tillage for annually planted crops and to tillage for plating perennial crops. It also includes some planting operation such as hoe drill, air seeder and no-till drill that disturb a large percentage of soil surface using the planting operation. tillage occurs after crop harvest. In warmer areas, winter weeds or cover crops grow throughout the winter months. The residue that remains on the soil surface provides soil cover during late fall, throughout the winter, and into the early spring. Runoff and erosion are reduced and no rills are visible on the soil surface in the spring. Wind erosion is reduced by standing residues. Winter weeds or the cover crop is terminated with tillage, a roller-crimper, shredding, or a combination of these methods prior to spring planting as late as feasible. Over time, soil health is improved due to the additional biomass, ground cover, soil infiltration, and plant diversity in the cropping system. |
| Scenario Feature Measure | Acre Planted |
| Scenario Unit | Acre |
| Scenario Typical Size | 100 |

### Cost Summary:

| Cost Category | Scenario Cost | Scenario Cost/Unit |
|---|---|---|
| Materials | $0.00 | $0.00 |
| Equipment/Installation | $2,409.00 | $24.09 |
| Labor | $0.00 | $0.00 |
| Mobilization | $0.00 | $0.00 |
| Acquisition of Technical Knowledge | $150.27 | $1.50 |
| Foregone Income | $0.00 | $0.00 |
| Total | $2,559.27 | $25.59 |

### Cost Details:

| Cost Category | Component ID | Component Name | Component Description | Unit | Price ($/unit) | Quantity | Cost |
|---|---|---|---|---|---|---|---|
| Equipment/Installation | 945 | Tillage, Light | Includes light disking (tandem) or field cultivator. Equipment and power unit costs. Labor is included. | Acre | $9.63 | 100 | $963.00 |
| Equipment/Installation | 946 | Tillage, Primary | Includes heavy disking (offset) or chisel plow, Equipment and power unit costs. Labor is included. | Acre | $14.46 | 100 | $1,446.00 |
| Acquisition of Technical Knowledge | 294 | Training, Workshops | Educational seminar or series of meetings emphasizing interaction and exchange of information among a usually small number of participants. | Each | $116.67 | 1 | $116.67 |
| Acquisition of Technical Knowledge | 297 | Transportation | Mileage to attend a training conference, workshop, or TSP travel associated with developing Conservation Activity Plan. | Mile | $0.56 | 60 | $33.60 |

## Scenario Worksheet

### Practice and Scenario Description:

| Information Type | Data |
|---|---|
| Region | Corn Belt |
| State | Ohio |
| Discipline Group | Agronomy |
| Practice Code/Name | 345 - Res. & Tillage Mgt, Mulch-till |
| Scenario ID | 2 |
| Scenario Name | Mulch till-with Planting Operations |
| Scenario Description | Mulch-till is managing the amount, orientation and distribution of crop and other plant residue on the soil surface year round while limiting the soil-disturbing activities used to grow crops in systems where the entire field surface is tilled prior to planting. This practice includes tillage methods commonly referred to as mulch tillage or chiseling and disking, as well as planting operations. It applies to stubble mulching on summer-fallowed land, to tillage for annually planted crops and to tillage for planted crops and to tillage for planting perennial crops. All residue shall be uniformly surface throughout critical wind erosion period. All residue shall be uniformly distributed over the entire field and not burned or removed. These periods of intensive tillage have led to excessive soil loss, often above the Soil Loss Tolerance (T), due to the loss of critical crop or weed residue. The RUSLE2 model will be used to review the farming operation and determine if enough residue is being retained, throughout the rotation, to keep soil loss below T. The producer will then remove operations, or select alternate operations, to reduce erosion below T. |
| Before Practice Situation | Row crops such as corn or soybeans are grown and harvested in mid-late fall. Fields are disked immediately following harvest, with rows in some fields being hipped for drainage. Residue amounts after harvest average 30% or less, resulting in bare soil being exposed to wind erosion and/or intense rainfall during the fall, winter, and early spring. Over the winter residue degrades and sediment/nutrient runoff from fields increases. Sheet and rill erosion occurs with visible rills by spring. Spring tillage and seedbed preparation activities occur as early as possible in the late winter and early spring. Weed control is accomplished primarily through tillage, requiring multiple operations. Runoff from the fields flows into streams, water courses or other water bodies causing degradation to the receiving waters. Soil health (soil organic matter) declines over time as a result of tillage practices, low residue monocultures, and long periods of bare soil. |
| After Practice Situation | Mulch tillage applies to all cropland and other lands where crops are planed. It applies to stubble mulching on summer fallowed land to tillage for annually planted crops and to tillage for plating perennial crops. It also includes some planting operation such as hoe drill, air seeder and no-till drill that disturb a large percentage of soil surface using the planting operation. tillage occurs after crop harvest. In warmer areas, winter weeds or cover crops grow throughout the winter months. The residue that remains on the soil surface provides soil cover during late fall, throughout the winter, and into the early spring. Runoff and erosion are reduced and no rills are visible on the soil surface in the spring. Wind erosion is reduced by standing residues. Winter weeds or the cover crop is terminated with tillage, a roller-crimper, shredding, or a combination of these methods prior to spring planting as late as feasible. Over time, soil health is improved due to the additional biomass, ground cover, soil infiltration, and plant diversity in the cropping system. |
| Scenario Feature Measure | Area planted |
| Scenario Unit | Acre |
| Scenario Typical Size | 100 |

### Cost Summary:

| Cost Category | Scenario Cost | Scenario Cost/Unit |
|---|---|---|
| Materials | $0.00 | $0.00 |
| Equipment/Installation | $2,904.00 | $29.04 |
| Labor | $0.00 | $0.00 |
| Mobilization | $0.00 | $0.00 |
| Acquisition of Technical Knowledge | $150.27 | $1.50 |
| Foregone Income | $0.00 | $0.00 |
| Total | $3,054.27 | $30.54 |

### Cost Details:

| Cost Category | Component ID | Component Name | Component Description | Unit | Price ($/unit) | Quantity | Cost |
|---|---|---|---|---|---|---|---|
| Equipment/Installation | 960 | Seeding Operation, No Till/Grass Drill | No Till drill or grass drill for seeding. Includes all costs for equipment, power unit, and labor. | Acre | $19.08 | 50 | $954.00 |
| Equipment/Installation | 1230 | Seeding Operation, No Till/Strip Till Planter | No Till/Strip Till row planters for seeding. Includes all costs for equipment, power unit, and labor. | Acre | $14.91 | 50 | $745.50 |
| Equipment/Installation | 945 | Tillage, Light | Includes light disking (tandem) or field cultivator. Equipment and power unit costs. Labor is included. | Acre | $9.63 | 50 | $481.50 |
| Equipment/Installation | 946 | Tillage, Primary | Includes heavy disking (offset) or chisel plow, Equipment and power unit costs. Labor is included. | Acre | $14.46 | 50 | $723.00 |
| Acquisition of Technical Knowledge | 294 | Training, Workshops | Educational seminar or series of meetings emphasizing interaction and exchange of information among a usually small number of participants. | Each | $116.67 | 1 | $116.67 |
| Acquisition of Technical Knowledge | 297 | Transportation | Mileage to attend a training conference, workshop, or TSP travel associated with developing Conservation Activity Plan. | Mile | $0.56 | 60 | $33.60 |

## Scenario Worksheet

### Practice and Scenario Description:

| Information Type | Data |
|---|---|
| Region | Corn Belt |
| State | Ohio |
| Discipline Group | Agronomy |
| Practice Code/Name | 346 - Residue and Tillage Management - Ridge Till |
| Scenario ID | 1 |
| Scenario Name | Ridge Till |
| Scenario Description | This practice typically involves conversion from a conventional tillage system to a ridge tillage (conservation tillage) system on cropland. This involves managing the amount, orientation and distribution of crop and other plant residue on the soil surface year round while limiting soil-disturbing activities used to grow and harvest crops in systems. The practice is used to reduce wind erosion, reduce sheet and rill erosion, improve soil quality, reduce energy use, increase plant available moisture. The ridge till system includes using a ridge till planter and chemical weed control, and may also include a period of chemical fallow. This residue management system is applicable to both irrigated and non-irrigated fields. This system will manage soil erosion to T and maintain a positive SCI. |
| Before Practice Situation | Row crops such as corn and soybeans or grain sorghum are grown and harvested in mid-late fall. Full width tillage is performed prior to planting and weed control during crop production is typically cultivation and chemical application. Fields are plowed immediately following harvest, with several additional tillage operations applied to field prior to planting for land preparation and weed control. Residue amounts after tillage operations average less than 10%, resulting in bare soil being exposed to wind erosion and intense rainfall during the fall, winter, and early spring. Any crop residue that is present degrades and sediment/nutrient runoff from fields increases during rainfall events. Sheet and rill erosion and wind occurs with visible signs of soil erosion by spring. Soil health (soil organic matter) declines over time as a result of tillage practices, low residue, and long periods of bare soil. This system will typically have a negative Soil Conditioning Index (SCI) and a high Soil Tillage Intensity Rating (STIR). |
| After Practice Situation | Practice applied per the conservation practice standard 346 to meet the planned purposes. Managing crop residue on the surface year around while limiting soil disturbing activities to those which reshape ridges, place nutrients, and plant crops. All crops are seeded/planted with a ridge till planter, which minimizes soil disturbance while establishing good seed-soil contact. All residues are to be maintained on the soil surface in a uniform distribution over the entire field and not burned or removed. Crop residues provide soil surface cover throughout the year. Runoff and erosion are reduced and no rills are visible on the soil surface. Wind erosion is reduced by standing residues and surface cover. Over time, soil health is improved due to the additional crop residues, ground cover, and soil infiltration. This practice will require reducing soil erosion to T and maintain a positive SCI. |
| Scenario Feature Measure | Area planted |
| Scenario Unit | Acre |
| Scenario Typical Size | 160 |

### Cost Summary:

| Cost Category | Scenario Cost | Scenario Cost/Unit |
|---|---|---|
| Materials | $0.00 | $0.00 |
| Equipment/Installation | $5,504.00 | $34.40 |
| Labor | $0.00 | $0.00 |
| Mobilization | $0.00 | $0.00 |
| Acquisition of Technical Knowledge | $150.27 | $0.94 |
| Foregone Income | $0.00 | $0.00 |
| Total | $5,654.27 | $35.34 |

### Cost Details:

| Cost Category | Component ID | Component Name | Component Description | Unit | Price ($/unit) | Quantity | Cost |
|---|---|---|---|---|---|---|---|
| Equipment/Installation | 1231 | Ridge Till Row Cultivator | Equipment and power unit cost. Labor is included | Acre | $14.00 | 160 | $2,240.00 |
| Equipment/Installation | 1232 | Seeding Operation, Ridge Till Planter | Mechanical seeding using ridge-till equipment. Includes all costs for equipment, power unit, and labor. | Acre | $20.40 | 160 | $3,264.00 |
| Acquisition of Technical Knowledge | 294 | Training, Workshops | Educational seminar or series of meetings emphasizing interaction and exchange of information among a usually small number of participants. | Each | $116.67 | 1 | $116.67 |
| Acquisition of Technical Knowledge | 297 | Transportation | Mileage to attend a training conference, workshop, or TSP travel associated with developing Conservation Activity Plan. | Mile | $0.56 | 60 | $33.60 |

## Scenario Worksheet

### Practice and Scenario Description:

| Information Type | Data |
|---|---|
| Region | Corn Belt |
| State | Ohio |
| Discipline Group | Engineering General |
| Practice Code/Name | 350 - Sediment Basin |
| Scenario ID | 5 |
| Scenario Name | Embankment earthen basin with pipe |
| Scenario Description | An low hazard class earthen embankment sediment basin in an existing drainage way on a farm for purpose of trapping sediment and preserving the capacity of reservoirs, ditches, canals, diversions, waterways and streams and to prevent undesirable deposition on bottom lands and other developed lands. An earthen embankment will be constructed with a principal spillway conduit and earthen auxiliary spillway, as designed. Resource concerns addressed include excessive suspended sediment and turbidity in surface water, damage from sediment deposition, and reduced capacity of conveyances by sediment deposition. Surface water causes the sediment (and potentially pesticides and nutrients) to be transported into the riparian areas and water bodies downstream. |
| Before Practice Situation | Disturbed areas on all land uses that have excessive erosion leading to deterioration of receiving waters due to excessive sedimentation. |
| After Practice Situation | The typical sediment basin is constructed by excavating the pool area and using the excavated material to construct the earthen embankment. The embankment will have a constructed auxiliary spillway and a core trench (10' wide, 3' deep, 1:1 slopes) using 1,500 cubic yards of material to create the embankment and core trench. The embankment will be designed and constructed according the Pond standard (378). The product of the storage times the effective height of the dam is less than 3,000. The effective height of the dam is 35 feet or less. The sediment storage capacity should be a minimum of 900 cubic feet per acre of disturbed area. The detention storage should be a minimum of 3600 cubic feet per acre of drainage area. The principal spillway is created using an approved conduit material and filter diaphragm. The earthen auxiliary spillway will be constructed as designed based on Pond standard (378). Associated practice(s): Other practices that may need to be implemented along with sediment basin to address all of the site specific resource concerns include: Critical Area Planting (342) and Mulching (484) where necessary to prevent erosion following construction activities, Structure for Water Control (587) if using a dewatering device, Pond Sealing or Lining (521A,521B,521C,521D). |
| Scenario Feature Measure | Embankment volume |
| Scenario Unit | Cubic Yard |
| Scenario Typical Size | 1500 |

### Cost Summary:

| Cost Category | Scenario Cost | Scenario Cost/Unit |
|---|---|---|
| Materials | $1,405.29 | $0.94 |
| Equipment/Installation | $5,152.50 | $3.44 |
| Labor | $1,655.79 | $1.10 |
| Mobilization | $406.10 | $0.27 |
| Acquisition of Technical Knowledge | $0.00 | $0.00 |
| Foregone Income | $0.00 | $0.00 |
| Total | $8,619.68 | $5.75 |

### Cost Details:

| Cost Category | Component ID | Component Name | Component Description | Unit | Price ($/unit) | Quantity | Cost |
|---|---|---|---|---|---|---|---|
| Materials | 1323 | Pipe, PVC, dia. < 18", weight priced | Polyvinyl Chloride (PVC) pressure rated pipe priced by the weight of the pipe materials for pipes with diameters less than 18". Materials only. | Pound | $1.39 | 443 | $615.77 |
| Materials | 1254 | Pipe, PVC, 24", PS 46 | Pipe, PVC, PS 46, 24" Diameter - ASTM F679. Material cost only. | Each | $32.44 | 6 | $194.64 |
| Materials | 1608 | Trash Guard, metal | Trash Guard, fabricated-steel, includes materials, equipment, and labor to transport and place Conical shaped trash guard for drop inlet spillway. Typically fabricated of CMP and steel. Includes materials, equipment, and labor to fabricate and transport. | Pound | $2.21 | 118 | $260.78 |
| Materials | 45 | Aggregate, Sand, Graded, Washed | Sand, typical ASTM C33 gradation, includes materials, equipment and labor to transport and place | Cubic yard | $25.70 | 13 | $334.10 |
| Equipment/Installation | 1208 | Scraper, self propelled, 21 CY | Self propelled earthmoving scraper with 21 CY capacity. Does not include labor. | Hour | $262.47 | 18 | $4,724.46 |
| Equipment/Installation | 1328 | Roller, static, towed, tamping foot | Towed static tamping foot (sheepsfoot) roller compactor typically 60" diameter drum. Equipment cost only. Does not include pulling equipment. Add Tractor or Dozer. | Hour | $13.42 | 4 | $53.68 |
| Equipment/Installation | 929 | Dozer, 80 HP | Track mounted Dozer with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included. | Hour | $53.48 | 7 | $374.36 |
| 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 | $19.92 | 22 | $438.24 |
| Labor | 233 | Equipment Operators, Heavy | Includes: Cranes, Hydraulic Excavators >=50 HP, Dozers, Paving Machines, Rock Trenchers, Trenchers >=12", Dump Trucks, Ag Equipment >=150 HP, Scrapers, Water Wagons. | Hour | $26.79 | 25 | $669.75 |
| 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 | $36.52 | 15 | $547.80 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Mobilization | 1139 | Mobilization, medium equipment | Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds. | Each | $203.05 | 2 | $406.10 |

## Scenario Worksheet

### Practice and Scenario Description:

| Information Type | Data |
|---|---|
| Region | Corn Belt |
| State | Ohio |
| Discipline Group | Engineering General |
| Practice Code/Name | 350 - Sediment Basin |
| Scenario ID | 3 |
| Scenario Name | Embankment earthen basin with no pipe |
| Scenario Description | An low hazard class earthen embankment sediment basin in an existing drainage way on a farm for purpose of trapping sediment and preserving the capacity of reservoirs, ditches, canals, diversions, waterways and streams and to prevent undesirable deposition on bottom lands and other developed lands. An earthen embankment will be constructed with a principal spillway conduit and earthen auxiliary spillway, as designed. Resource concerns addressed include excessive suspended sediment and turbidity in surface water, damage from sediment deposition, and reduced capacity of conveyances by sediment deposition. Surface water causes the sediment (and potentially pesticides and nutrients) to be transported into the riparian areas and water bodies downstream. |
| Before Practice Situation | Disturbed areas on all land uses that have excessive erosion leading to deterioration of receiving waters due to excessive sedimentation. |
| After Practice Situation | The typical sediment basin is constructed by excavating the pool area and using the excavated material to construct the earthen embankment. The embankment will have a constructed auxiliary spillway and a core trench (10' wide, 3' deep, 1:1 slopes) using 1,500 cubic yards of material to create the embankment and core trench. The embankment will be designed and constructed according the Pond standard (378). The product of the storage times the effective height of the dam is less than 3,000. The effective height of the dam is 35 feet or less. The sediment storage capacity should be a minimum of 900 cubic feet per acre of disturbed area. The detention storage should be a minimum of 3600 cubic feet per acre of drainage area. The earthen auxiliary spillway will be constructed as designed based on Pond standard (378). No principal spillway will be used. Associated practice(s): Other practices that may need to be implemented along with sediment basin to address all of the site specific resource concerns include: Critical Area Planting (342) and Mulching (484) where necessary to prevent erosion following construction activities, Structure for Water Control (587) if using a dewatering device, Pond Sealing or Lining (521A,521B,521C,521D). |
| Scenario Feature Measure | Embankment volume |
| Scenario Unit | Cubic Yard |
| Scenario Typical Size | 1500 |

### Cost Summary:

| Cost Category | Scenario Cost | Scenario Cost/Unit |
|---|---|---|
| Materials | $0.00 | $0.00 |
| Equipment/Installation | $5,152.50 | $3.44 |
| Labor | $669.75 | $0.45 |
| Mobilization | $406.10 | $0.27 |
| Acquisition of Technical Knowledge | $0.00 | $0.00 |
| Foregone Income | $0.00 | $0.00 |
| Total | $6,228.35 | $4.15 |

### Cost Details:

| Cost Category | Component ID | Component Name | Component Description | Unit | Price ($/unit) | Quantity | Cost |
|---|---|---|---|---|---|---|---|
| Equipment/Installation | 1208 | Scraper, self propelled, 21 CY | Self propelled earthmoving scraper with 21 CY capacity. Does not include labor. | Hour | $262.47 | 18 | $4,724.46 |
| Equipment/Installation | 1328 | Roller, static, towed, tamping foot | Towed static tamping foot (sheepsfoot) roller compactor typically 60" diameter drum. Equipment cost only. Does not include pulling equipment. Add Tractor or Dozer. | Hour | $13.42 | 4 | $53.68 |
| Equipment/Installation | 929 | Dozer, 80 HP | Track mounted Dozer with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included. | Hour | $53.48 | 7 | $374.36 |
| Labor | 233 | Equipment Operators, Heavy | Includes: Cranes, Hydraulic Excavators >=50 HP, Dozers, Paving Machines, Rock Trenchers, Trenchers >=12", Dump Trucks, Ag Equipment >=150 HP, Scrapers, Water Wagons. | Hour | $26.79 | 25 | $669.75 |
| Mobilization | 1139 | Mobilization, medium equipment | Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds. | Each | $203.05 | 2 | $406.10 |

## Scenario Worksheet

### Practice and Scenario Description:

| Information Type | Data |
|---|---|
| Region | Corn Belt |
| State | Ohio |
| Discipline Group | Engineering General |
| Practice Code/Name | 350 - Sediment Basin |
| Scenario ID | 1 |
| Scenario Name | Excavated Basin |
| Scenario Description | An excavated sediment basin in an existing drainage way on a farm for purpose of trapping sediment and preserving the capacity of reservoirs, ditches, canals, diversions, waterways and streams and to prevent undesirable deposition on bottom lands and other developed lands. The sediment basin is created solely by excavation and impounds less than 3 feet against the embankment or spoil. Excavated material is spoiled, not placed in a designed embankment. Earthen spillway is constructed as needed. Resource concerns addressed include excessive suspended sediment and turbidity in surface water, damage from sediment deposition, and reduced capacity of conveyances by sediment deposition. Surface water causes the sediment (and potentially pesticides and nutrients) to be transported into the riparian areas and water bodies downstream. |
| Before Practice Situation | Disturbed areas on all land uses that have excessive erosion lead to deterioration of receiving waters due to excessive sedimentation. |
| After Practice Situation | 'The typical sediment basin is constructed by excavating 1500 cubic yards and spreading the spoil outside the pool area using a dozer or similar excavation equipment. The sediment storage capacity should be a minimum of 900 cubic feet per acre of disturbed area. The detention storage should be a minimum of 3600 cubic feet per acre of drainage area. Associated practice(s): Other practices that may need to be implemented along with sediment basin to address all of the site specific resource concerns include: Critical Area Planting (342) and Mulching (484) where necessary to prevent erosion following construction activities, Structure for Water Control (587) if using a dewatering device, Pond Sealing or Lining (521A,521B,521C,521D). |
| Scenario Feature Measure | Excavated volume |
| Scenario Unit | Cubic Yard |
| Scenario Typical Size | 1500 |

### Cost Summary:

| Cost Category | Scenario Cost | Scenario Cost/Unit |
|---|---|---|
| Materials | $0.00 | $0.00 |
| Equipment/Installation | $2,272.86 | $1.52 |
| Labor | $616.17 | $0.41 |
| Mobilization | $229.59 | $0.15 |
| Acquisition of Technical Knowledge | $0.00 | $0.00 |
| Foregone Income | $0.00 | $0.00 |
| Total | $3,118.62 | $2.08 |

### Cost Details:

| Cost Category | Component ID | Component Name | Component Description | Unit | Price ($/unit) | Quantity | Cost |
|---|---|---|---|---|---|---|---|
| Equipment/Installation | 927 | Dozer, 140 HP | Track mounted Dozer with horsepower range of 125 to 160. Equipment and power unit costs. Labor not included. | Hour | $98.82 | 23 | $2,272.86 |
| Labor | 233 | Equipment Operators, Heavy | Includes: Cranes, Hydraulic Excavators >=50 HP, Dozers, Paving Machines, Rock Trenchers, Trenchers >=12", Dump Trucks, Ag Equipment >=150 HP, Scrapers, Water Wagons. | Hour | $26.79 | 23 | $616.17 |
| Mobilization | 1139 | Mobilization, medium equipment | Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds. | Each | $203.05 | 1 | $203.05 |
| Mobilization | 1144 | Mobilization, Heavy Equipment Operator | Mobilization of heavy equipment operators: Hydraulic Excavators >=50 HP, Dozers, Paving Machines, Rock Trenchers, Trenchers >=12", Dump Trucks, Ag Equipment >=150 HP, Scrapers, Water Wagons. | Hour | $26.54 | 1 | $26.54 |

## Scenario Worksheet

### Practice and Scenario Description:

| Information Type | Data |
|---|---|
| Region | Corn Belt |
| State | Ohio |
| Discipline Group | Engineering General |
| Practice Code/Name | 355 - Well Water Testing |
| Scenario ID | 1 |
| Scenario Name | Basic Water Test |
| Scenario Description | Typical scenario includes the professional testing for nitrates, nitrites, and coliform to confirm well water meets basic water quality standards for consumption by livestock or use in irrigation. Water samples are sent to an EPA or state certified laboratory for testing. This scenario is recommended when water quality is suspected to be acceptable. |
| Before Practice Situation | There are no known contaminants of the well, however, neighboring wells have known issues with nitrates, or coliform, and confirmation of acceptable water quality is desired. Manure is spread near to the well, following a nutrient management plan; well contamination is unlikely but possible. |
| After Practice Situation | Water quality results are known. |
| Scenario Feature Measure | No. |
| Scenario Unit | Each |
| Scenario Typical Size | 1 |

### Cost Summary:

| Cost Category | Scenario Cost | Scenario Cost/Unit |
|---|---|---|
| Materials | $52.20 | $52.20 |
| Equipment/Installation | $0.00 | $0.00 |
| Labor | $9.96 | $9.96 |
| Mobilization | $0.00 | $0.00 |
| Acquisition of Technical Knowledge | $0.00 | $0.00 |
| Foregone Income | $0.00 | $0.00 |
| Total | $62.16 | $62.16 |

### Cost Details:

| Cost Category | Component ID | Component Name | Component Description | Unit | Price ($/unit) | Quantity | Cost |
|---|---|---|---|---|---|---|---|
| Materials | 309 | Test, Standard Water Test, Well Water | Domestic Well Water Suitability | Each | $52.20 | 1 | $52.20 |
| 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 | $19.92 | 0.5 | $9.96 |

## Scenario Worksheet

### Practice and Scenario Description:

| Information Type | Data |
|---|---|
| Region | Corn Belt |
| State | Ohio |
| Discipline Group | Engineering General |
| Practice Code/Name | 355 - Well Water Testing |
| Scenario ID | 3 |
| Scenario Name | Full Spectrum Test |
| Scenario Description | Typical scenario includes the professional comprehensive testing for all less common substances, to include: pesticides, heavy metals, VOC's or other less common substances, in addition to the basic water test items. Tests are intended to confirm well water meets water quality standards for consumption by livestock or use in irrigation. Water samples are sent to an EPA or state certified laboratory for testing. This scenario is recommended when water quality is known to be degraded due to a specialized substance but thorough analysis is warranted. |
| Before Practice Situation | There are no known contaminants of the well, however, neighboring wells have known issues with water quality, and confirmation of acceptable water quality is desired. Manure, pesticides, sewage sludge, or other potential contaminants have been spread near to the well, in an unmanaged manner; well contamination is likely. |
| After Practice Situation | Water quality results are known. |
| Scenario Feature Measure | No. |
| Scenario Unit | Each |
| Scenario Typical Size | 1 |

### Cost Summary:

| Cost Category | Scenario Cost | Scenario Cost/Unit |
|---|---|---|
| Materials | $422.88 | $422.88 |
| Equipment/Installation | $0.00 | $0.00 |
| Labor | $9.96 | $9.96 |
| Mobilization | $0.00 | $0.00 |
| Acquisition of Technical Knowledge | $0.00 | $0.00 |
| Foregone Income | $0.00 | $0.00 |
| Total | $432.84 | $432.84 |

### Cost Details:

| Cost Category | Component ID | Component Name | Component Description | Unit | Price ($/unit) | Quantity | Cost |
|---|---|---|---|---|---|---|---|
| Materials | 310 | Test, Standard Water Test, Irrigation Suitability | Irrigation water suitability lab analysis. Includes pH, alkalinity, carbonates/bicarbonates, EC, dissolved solids, B, Cl, Ca, Mg, Na, SAR, and hardness. | Each | $41.98 | 1 | $41.98 |
| 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 | $19.92 | 0.5 | $9.96 |
| Materials | 2002 | Test, comprehensive specialized water test, well water | Comprehensive testing for a broad spectrum of pesticides, inorganic chemicals or volatile organics not included in a basic well suitability test. | Each | $380.90 | 1 | $380.90 |

## Scenario Worksheet

### Practice and Scenario Description:

| Information Type | Data |
|---|---|
| Region | Corn Belt |
| State | Ohio |
| Discipline Group | Engineering General |
| Practice Code/Name | 355 - Well Water Testing |
| Scenario ID | 2 |
| Scenario Name | Specialty Water Test |
| Scenario Description | Typical scenario includes the professional testing for pesticides, heavy metals, VOC's or other less common substances, in addition to the basic water test items. Tests are intended to confirm well water meets water quality standards for consumption by livestock or use in irrigation. Water samples are sent to an EPA or state certified laboratory for testing. This scenario is recommended when water quality is suspected to be degraded due to a specialized substance. |
| Before Practice Situation | There are no known contaminants of the well, however, neighboring wells have known issues with water quality, and confirmation of acceptable water quality is desired. Manure, pesticides, or other potential contaminants have been spread near to the well, in an unmanaged manner; well contamination is possible. |
| After Practice Situation | Water quality results are known. |
| Scenario Feature Measure | No. |
| Scenario Unit | Each |
| Scenario Typical Size | 1 |

### Cost Summary:

| Cost Category | Scenario Cost | Scenario Cost/Unit |
|---|---|---|
| Materials | $192.10 | $192.10 |
| Equipment/Installation | $0.00 | $0.00 |
| Labor | $9.96 | $9.96 |
| Mobilization | $0.00 | $0.00 |
| Acquisition of Technical Knowledge | $0.00 | $0.00 |
| Foregone Income | $0.00 | $0.00 |
| Total | $202.06 | $202.06 |

### Cost Details:

| Cost Category | Component ID | Component Name | Component Description | Unit | Price ($/unit) | Quantity | Cost |
|---|---|---|---|---|---|---|---|
| Materials | 309 | Test, Standard Water Test, Well Water | Domestic Well Water Suitability | Each | $52.20 | 1 | $52.20 |
| Materials | 2003 | Test, singular specialized water test, well water | Testing for specific pesticide, inorganic chemical or volatile organic not included in a basic well suitability test. | Each | $139.90 | 1 | $139.90 |
| 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 | $19.92 | 0.5 | $9.96 |

## Scenario Worksheet

### Practice and Scenario Description:

| Information Type | Data |
|---|---|
| Region | Corn Belt |
| State | Ohio |
| Discipline Group | Engineering General |
| Practice Code/Name | 356 - Dike |
| Scenario ID | 1 |
| Scenario Name | Dike |
| Scenario Description | Construction a barrier of either earth or manufatcured materials for the purpose of the protetion of people or property from floods or to control water levels in connection with crop production; fish and wildlife management; or wetland maintenance, improvement, restoration, or construction. Embankment structure to provide adequate freeboard, allowance for settlement, and foundation and embankment stability. |
| Before Practice Situation | Site is subject to flooding or indundation which poses a potential hazard to public safety, damage to land or property. Site may also require control of water level for purposes connected with crop production; fish and wildlife managment; or wetland maintenance, improvement, restoration, or construction. An adequate quantity of soil suitable for constructing an earthen dike is available at an economical haul distance. |
| After Practice Situation | Water level is controlled by a stable earthen structure installed with compacted fill material. Material haul < 1 mile. Typical earthen dike assumed 1000 lineal feet, Class II (6 ft. in height, 8 ft. top width, 2H:1V side slopes). Potential hazard to public safety, land or property mitigated; environmental benefit provided. Scenario includes component for stripping and stockpiling base of dike. Associated practices include, but are not limited to: PS327 Conservation Cover, PS656 Constructed Wetland, PS342 Critical Area Planting, PS378 Ponds, PS382 Fence, PS464 Irrigation Land Levelling, PS500 Obstruction Removal, PS528 Prescribed Grazing, PS587 Structure for Water Control, PS620 Underground Outlet, PS645 Upland Wildlife Management, PS658 Wetland Creation, PS659 Wetland Enhancement, PS657 Wetland Restoration, PS644 Wetland Wildlife Habitat Management. |
| Scenario Feature Measure | Cubic Yards of Earthmoving |
| Scenario Unit | Cubic Yard |
| Scenario Typical Size | 4444 |

### Cost Summary:

| Cost Category | Scenario Cost | Scenario Cost/Unit |
|---|---|---|
| Materials | $0.00 | $0.00 |
| Equipment/Installation | $20,196.96 | $4.54 |
| Labor | $0.00 | $0.00 |
| Mobilization | $406.10 | $0.09 |
| Acquisition of Technical Knowledge | $0.00 | $0.00 |
| Foregone Income | $0.00 | $0.00 |
| Total | $20,603.06 | $4.64 |

### Cost Details:

| Cost Category | Component ID | Component Name | Component Description | Unit | Price ($/unit) | Quantity | Cost |
|---|---|---|---|---|---|---|---|
| Equipment/Installation | 1199 | Stripping and stockpiling, topsoil | Stripping and stockpiling of topsoil adjacent to stripping area. Includes equipment and labor. | Cubic Yard | $0.77 | 592 | $455.84 |
| Equipment/Installation | 49 | Earthfill, Roller Compacted | Earthfill, roller or machine compacted, includes equipment and labor | Cubic yard | $3.92 | 5036 | $19,741.12 |
| Mobilization | 1139 | Mobilization, medium equipment | Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds. | Each | $203.05 | 2 | $406.10 |

## Scenario Worksheet

### Practice and Scenario Description:

| Information Type | Data |
|---|---|
| Region | Corn Belt |
| State | Ohio |
| Discipline Group | Engineering General |
| Practice Code/Name | 356 - Dike |
| Scenario ID | 4 |
| Scenario Name | Dike with 1&2 Stone |
| Scenario Description | Construction a barrier of either earth or manufatcured materials for the purpose of the protetion of people or property from floods or to control water levels in connection with crop production; fish and wildlife management; or wetland maintenance, improvement, restoration, or construction. Embankment structure to provide adequate freeboard, allowance for settlement, and foundation and embankment stability. inside bank of dike is armored with #1 and 2 stone. |
| Before Practice Situation | Site is subject to flooding or indundation which poses a potential hazard to public safety, damage to land or property. Site may also require control of water level for purposes connected with crop production; fish and wildlife managment; or wetland maintenance, improvement, restoration, or construction. An adequate quantity of soil suitable for constructing an earthen dike is available at an economical haul distance. |
| After Practice Situation | Water level is controlled by a stable earthen structure installed with compacted fill material. Material haul < 1 mile. Typical earthen dike assumed 1000 lineal feet, Class II (6 ft. in height, 8 ft. top width, 2H:1V side slopes). Potential hazard to public safety, land or property mitigated; environmental benefit provided. Inside bank of dike armored with #1 and 2 stone to protect from rodent damage. Scenario includes component for stripping and stockpiling base of dike. Associated practices include, but are not limited to: PS327 Conservation Cover, PS656 Constructed Wetland, PS342 Critical Area Planting, PS378 Ponds, PS382 Fence, PS464 Irrigation Land Levelling, PS500 Obstruction Removal, PS528 Prescribed Grazing, PS587 Structure for Water Control, PS620 Underground Outlet, PS645 Upland Wildlife Management, PS658 Wetland Creation, PS659 Wetland Enhancement, PS657 Wetland Restoration, PS644 Wetland Wildlife Habitat Management. |
| Scenario Feature Measure | Cubic Yards of Earthmoving |
| Scenario Unit | Cubic Yard |
| Scenario Typical Size | 4444 |

### Cost Summary:

| Cost Category | Scenario Cost | Scenario Cost/Unit |
|---|---|---|
| Materials | $9,959.10 | $2.24 |
| Equipment/Installation | $20,196.96 | $4.54 |
| Labor | $0.00 | $0.00 |
| Mobilization | $406.10 | $0.09 |
| Acquisition of Technical Knowledge | $0.00 | $0.00 |
| Foregone Income | $0.00 | $0.00 |
| Total | $30,562.16 | $6.88 |

### 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 | $26.70 | 373 | $9,959.10 |
| Equipment/Installation | 1199 | Stripping and stockpiling, topsoil | Stripping and stockpiling of topsoil adjacent to stripping area. Includes equipment and labor. | Cubic Yard | $0.77 | 592 | $455.84 |
| Equipment/Installation | 49 | Earthfill, Roller Compacted | Earthfill, roller or machine compacted, includes equipment and labor | Cubic yard | $3.92 | 5036 | $19,741.12 |
| Mobilization | 1139 | Mobilization, medium equipment | Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds. | Each | $203.05 | 2 | $406.10 |

## Scenario Worksheet

### Practice and Scenario Description:

| Information Type | Data |
|---|---|
| Region | Corn Belt |
| State | Ohio |
| Discipline Group | Engineering General |
| Practice Code/Name | 356 - Dike |
| Scenario ID | 2 |
| Scenario Name | Dike with Core Trench |
| Scenario Description | Construction a barrier of either earth or manufatcured materials for the purpose of the protetion of people or property from floods or to control water levels in connection with crop production; fish and wildlife management; or wetland maintenance, improvement, restoration, or construction. Embankment structure to provide adequate freeboard, allowance for settlement, and foundation and embankment stability. |
| Before Practice Situation | Site is subject to flooding or indundation which poses a potential hazard to public safety, damage to land or property. Site may also require control of water level for purposes connected with crop production; fish and wildlife managment; or wetland maintenance, improvement, restoration, or construction. An adequate quantity of soil suitable for constructing an earthen dike is available at an economical haul distance. |
| After Practice Situation | Water level is controlled by a stable earthen structure installed with compacted fill material. Material haul < 1 mile. Typical earthen dike assumed 1000 lineal feet, Class II (6 ft. in height, 8 ft. top width, 2H:1V side slopes). Potential hazard to public safety, land or property mitigated; environmental benefit provided. This scenario includes the excavation and placement of a core trench. Scenario includes component for stripping and stockpiling base of dikeAssociated practices include, but are not limited to: PS327 Conservation Cover, PS656 Constructed Wetland, PS342 Critical Area Planting, PS378 Ponds, PS382 Fence, PS464 Irrigation Land Levelling, PS500 Obstruction Removal, PS528 Prescribed Grazing, PS587 Structure for Water Control, PS620 Underground Outlet, PS645 Upland Wildlife Management, PS658 Wetland Creation, PS659 Wetland Enhancement, PS657 Wetland Restoration, PS644 Wetland Wildlife Habitat Management. |
| Scenario Feature Measure | Cubic Yards of Earthmoving |
| Scenario Unit | Cubic Yard |
| Scenario Typical Size | 4444 |

### Cost Summary:

| Cost Category | Scenario Cost | Scenario Cost/Unit |
|---|---|---|
| Materials | $0.00 | $0.00 |
| Equipment/Installation | $26,661.34 | $6.00 |
| Labor | $0.00 | $0.00 |
| Mobilization | $406.10 | $0.09 |
| Acquisition of Technical Knowledge | $0.00 | $0.00 |
| Foregone Income | $0.00 | $0.00 |
| Total | $27,067.44 | $6.09 |

### Cost Details:

| Cost Category | Component ID | Component Name | Component Description | Unit | Price ($/unit) | Quantity | Cost |
|---|---|---|---|---|---|---|---|
| Equipment/Installation | 1199 | Stripping and stockpiling, topsoil | Stripping and stockpiling of topsoil adjacent to stripping area. Includes equipment and labor. | Cubic Yard | $0.77 | 592 | $455.84 |
| Equipment/Installation | 1222 | Excavation, common earth, large equipment, 50 ft | Bulk excavation of common earth including sand and gravel with dozer >100 HP with average push distance of 50 feet. Includes equipment and labor. | Cubic Yard | $1.37 | 1222 | $1,674.14 |
| Equipment/Installation | 49 | Earthfill, Roller Compacted | Earthfill, roller or machine compacted, includes equipment and labor | Cubic yard | $3.92 | 6258 | $24,531.36 |
| Mobilization | 1139 | Mobilization, medium equipment | Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds. | Each | $203.05 | 2 | $406.10 |

## Scenario Worksheet

### Practice and Scenario Description:

| Information Type | Data |
|---|---|
| Region | Corn Belt |
| State | Ohio |
| Discipline Group | Engineering General |
| Practice Code/Name | 356 - Dike |
| Scenario ID | 3 |
| Scenario Name | Dike with Rip Rap |
| Scenario Description | Construction a barrier of either earth or manufatcured materials for the purpose of the protetion of people or property from floods or to control water levels in connection with crop production; fish and wildlife management; or wetland maintenance, improvement, restoration, or construction. Embankment structure to provide adequate freeboard, allowance for settlement, and foundation and embankment stability. inside bank of dike is armored with riprap. |
| Before Practice Situation | Site is subject to flooding or indundation which poses a potential hazard to public safety, damage to land or property. Site may also require control of water level for purposes connected with crop production; fish and wildlife managment; or wetland maintenance, improvement, restoration, or construction. An adequate quantity of soil suitable for constructing an earthen dike is available at an economical haul distance. |
| After Practice Situation | Water level is controlled by a stable earthen structure installed with compacted fill material. Material haul < 1 mile. Typical earthen dike assumed 1000 lineal feet, Class II (6 ft. in height, 8 ft. top width, 2H:1V side slopes). Potential hazard to public safety, land or property mitigated; environmental benefit provided. Inside bank of dike armored with riprap to protect from rodent damage. Scenario includes component for stripping and stockpiling base of dike. Associated practices include, but are not limited to: PS327 Conservation Cover, PS656 Constructed Wetland, PS342 Critical Area Planting, PS378 Ponds, PS382 Fence, PS464 Irrigation Land Levelling, PS500 Obstruction Removal, PS528 Prescribed Grazing, PS587 Structure for Water Control, PS620 Underground Outlet, PS645 Upland Wildlife Management, PS658 Wetland Creation, PS659 Wetland Enhancement, PS657 Wetland Restoration, PS644 Wetland Wildlife Habitat Management. |
| Scenario Feature Measure | Cubic Yards of Earthmoving |
| Scenario Unit | Cubic Yard |
| Scenario Typical Size | 4444 |

### Cost Summary:

| Cost Category | Scenario Cost | Scenario Cost/Unit |
|---|---|---|
| Materials | $17,259.27 | $3.88 |
| Equipment/Installation | $20,196.96 | $4.54 |
| Labor | $0.00 | $0.00 |
| Mobilization | $406.10 | $0.09 |
| Acquisition of Technical Knowledge | $0.00 | $0.00 |
| Foregone Income | $0.00 | $0.00 |
| Total | $37,862.33 | $8.52 |

### Cost Details:

| Cost Category | Component ID | Component Name | Component Description | Unit | Price ($/unit) | Quantity | Cost |
|---|---|---|---|---|---|---|---|
| Materials | 1200 | Rock Riprap, graded, angular, material and shipping | Graded Rock Riprap for all gradation ranges. Includes materials and delivery only. | Ton | $28.91 | 597 | $17,259.27 |
| Equipment/Installation | 1199 | Stripping and stockpiling, topsoil | Stripping and stockpiling of topsoil adjacent to stripping area. Includes equipment and labor. | Cubic Yard | $0.77 | 592 | $455.84 |
| Equipment/Installation | 49 | Earthfill, Roller Compacted | Earthfill, roller or machine compacted, includes equipment and labor | Cubic yard | $3.92 | 5036 | $19,741.12 |
| Mobilization | 1139 | Mobilization, medium equipment | Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds. | Each | $203.05 | 2 | $406.10 |