

Practice: 359 - Waste Treatment Lagoon

Scenario # 1 Waste Treatment Lagoon

Missouri

Scenario Description:

A waste treatment lagoon is a component of a waste management system that provides biological treatment of manure and other byproducts of agricultural operations by reducing the pollution potential. Resource concern addressed is water quality by reducing the pollution potential to surface and groundwater by treating and storing liquid waste. Earthen lagoon liners are addressed with another standard.

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), and Solid/Liquid Waste Separation Facility (632).

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/or 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 environmental threat of excessive nutrients, organics, and pathogens being transported into surface and groundwater resources.

After Practice Situation:

A waste treatment lagoon 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 and treating waste until it can be utilized in a proper manner in accordance with a nutrient management plan. Typical design size : Design Volume 439,440 ft³; 260' X 208' (top); 3:1 inside and outside side slopes; cut/fill ratio = 1.25; total depth = 13'; 1' freeboard (not included in design volume)

Scenario Feature Measure:

Design Storage Volume

| | | | | |
|-------------------------------|--------|------------|---------------|--------|
| Scenario Typical Size: | 439440 | Cubic Foot | Tot Unit Cost | \$0.16 |
|-------------------------------|--------|------------|---------------|--------|

| Cost Category | Component Name | Quantity | Unit | Unit Cost | Cost |
|-----------------|--|----------|------------|-----------|-------------|
| Materials | Structural steel tubing, 2" diameter | 8 | Foot | \$3.40 | \$27.20 |
| Equip./Install. | Excavation, common earth, large equipment, | 9125 | Cubic Yard | \$3.49 | \$31,846.25 |
| Equip./Install. | Stripping and stockpiling, topsoil | 1389 | Cubic Yard | \$0.83 | \$1,152.87 |
| Equip./Install. | Earthfill, Dumped and Spread | 8101 | Cubic yard | \$2.96 | \$23,978.96 |
| Equip./Install. | Earthfill, Roller Compacted | 2778 | Cubic yard | \$3.62 | \$10,056.36 |
| Mobilization | Mobilization, large equipment | 4 | Each | \$374.89 | \$1,499.56 |

Total Cost: \$68,561.20

Payment types:

| PayType | Unit Payment | PayType | Unit Payment |
|-----------|--------------|-------------|--------------|
| EQIP-MRBI | \$0.12 | EQIP-HUMRBI | \$0.14 |