

Practice: 309 - Agrichemical Handling Facility

Scenario: #1 - Enclosed building for storage and handling

Scenario Description: This practice scenario is an agrichemical handling facility for storage and mixing and loading operations. 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), Roof Runoff Management (558), Nutrient Management (590), Pest Management (595)

Before 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 Situation: An agrichemical storage and handling facility is constructed inside an enclosed building. The average size of the agrichemical handling facility for storage and mixing and loading is 18' x 24' with an application equipment length of 16 ft. The handling pad for mixing and loading operations is sized to contain the length of the agrichemical spray tank and its volume. Install a curbed reinforced concrete handling pad for mixing and loading with proper storage of associated dry and/or liquid agrichemicals. The concrete is sealed and sloped to a collection sump, facility containment is surrounded by square and ramped curbs. This practice will contain agrichemicals and prevent contamination of surface and ground water resources.

Scenario Feature Measure: Total Containment Area

Scenario Unit: Square Foot

Scenario Typical Size: 432

Total Scenario Cost: \$12,972.41

Scenario Cost/Unit: \$30.03

Cost Details

| Component Name | Id | Description | Unit | Cost | Qty | Total |
|----------------|----|-------------|------|------|-----|-------|
|----------------|----|-------------|------|------|-----|-------|

Equipment Installation

| | | | | | | |
|--|-----|---|------------|----------|---|------------|
| Concrete, CIP, formed reinforced | 38 | 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 | \$352.59 | 6 | \$2,115.54 |
| Concrete, CIP, slab on grade, reinforced | 37 | 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 | \$226.71 | 8 | \$1,813.66 |
| Dozer, 80 HP | 929 | Track mounted Dozer with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included. | Hour | \$65.63 | 8 | \$525.02 |

Materials

| | | | | | | |
|---|------|---|-------------|----------|-----|------------|
| Aggregate, Gravel, Graded | 46 | Gravel, includes materials, equipment and labor to transport and place. Includes washed and unwashed gravel. | Cubic Yard | \$40.43 | 10 | \$404.33 |
| Catch Basin, concrete, 2'x2'x6' | 1257 | Catch Basin, Precast Concrete, 2' square or round, cast grate, 6' deep. Includes materials, equipment and labor. | Each | \$599.62 | 1 | \$599.62 |
| Emergency shower and eye wash station | 1499 | Emergency shower and eye wash station unit. Materials only. | Each | \$592.43 | 1 | \$592.43 |
| Painting, concrete surface, impermeable | 1497 | Painting of concrete surfaces with an impermeable coating. Includes materials and application. | Square Foot | \$1.04 | 432 | \$449.80 |
| Pump, Sump, less than 1/4 HP | 2582 | Utility pump, corrosion-resistant, compact and portable, self-priming at 8 ft or more, 300 GPH at 10', electric, manually operated. Includes materials and shipping (pump and motor). | Each | \$169.36 | 1 | \$169.36 |
| Roof, Post Frame Building, less than 30' wide | 1672 | Post Frame Building, no sides, - less than 30' width. Building sites with expected snow loads up to 30 lbs per square foot and wind exposure in semi protected areas (wooded or terrain with numerous closely spaced obstructions). Includes materials, shipping, equipment, and installation. Does not include foundation preparation. | Square Foot | \$8.87 | 432 | \$3,830.76 |
| Tank, rinsate or chemical storage, <= 100 gal | 2051 | Poly tank reservoir for storing rinsate or other liquid agrichemicals. Less than or equal to 100 gallon capacity. Materials only. | Gallon | \$2.17 | 400 | \$869.05 |
| Tank, rinsate or chemical | 2050 | Poly tank reservoir for storing rinsate or other liquid agrichemicals. | Gallon | \$1.44 | 300 | \$430.62 |

| | | | | | | |
|---------------------------|--|--|--|--|--|--|
| storage, > 100 to 300 gal | | Greater than 100 to 300 gallon capacity. Materials only. | | | | |
|---------------------------|--|--|--|--|--|--|

Labor

| | | | | | | |
|----------------------------|-----|--|------|---------|----|----------|
| Equipment Operators, Heavy | 233 | Includes: Cranes, Hydraulic Excavators >=50 HP, Dozers, Paving Machines, Rock Trenchers, Trenchers >=12", Dump Trucks, Ag Equipment >=150 HP, Scrapers, Water Wagons. | Hour | \$24.21 | 8 | \$193.69 |
| General Labor | 231 | Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc. | Hour | \$20.07 | 24 | \$481.67 |

Mobilization

| | | | | | | |
|--------------------------------------|------|--|-----------------|----------|-----|----------|
| Aggregate, Shipping, Cubic Yard-mile | 2360 | Mobilization of aggregate material beyond 20 miles of local delivery from quarry to construction site. Cubic Yard-mile (Cubic Yard * miles of haul). | Cubic Yard Mile | \$0.35 | 500 | \$172.88 |
| Mobilization, medium equipment | 1139 | Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds. | Each | \$253.88 | 1 | \$253.88 |
| Mobilization, very small equipment | 1137 | 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 | \$70.11 | 1 | \$70.11 |