

**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:** \$14,017.69

**Scenario Cost/Unit:** \$32.45

**Cost Details**

Component Name	Id	Description	Unit	Cost	Qty	Total
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**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	\$451.17	6	\$2,707.01
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	\$290.09	8	\$2,320.73
Dozer, 80 HP	929	Track mounted Dozer with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	\$65.86	8	\$526.86

**Materials**

Aggregate, Gravel, Graded	46	Gravel, includes materials, equipment and labor to transport and place. Includes washed and unwashed gravel.	Cubic Yard	\$31.25	10	\$312.54
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	\$601.71	1	\$601.71
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.				
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**Labor**

Equipment Operators, Heavy	233	Includes: Cranes, Hydraulic Excavators >=50 HP, Dozers, Paving Machines, Rock Trenchers, Trenchers >=12", Dump Trucks, Ag Equipment >=150 HP, Scrapers, Water Wagons.	Hour	\$29.32	8	\$234.58
General Labor	231	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$19.74	24	\$473.65

**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	\$173.48
Mobilization, medium equipment	1139	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$254.77	1	\$254.77
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	\$70.35	1	\$70.35

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**Scenario:** #2 - Agrichemical Handling Pad under a Roof

**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)

**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:** This scenario is an agrichemical handling facility pad is constructed with a roof. The average size of the agrichemical handling pad for 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. 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:** Total Containment Area

**Scenario Unit:** Square Foot

**Scenario Typical Size:** 432

**Total Scenario Cost:** \$11,586.99

**Scenario Cost/Unit:** \$26.82

**Cost Details**

Component Name	Id	Description	Unit	Cost	Qty	Total
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**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	\$451.17	6	\$2,707.01
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	\$290.09	8	\$2,320.73
Dozer, 80 HP	929	Track mounted Dozer with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	\$65.86	4	\$263.43

**Materials**

Aggregate, Gravel, Graded	46	Gravel, includes materials, equipment and labor to transport and place. Includes washed and unwashed gravel.	Cubic Yard	\$31.25	10	\$312.54
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	\$601.71	1	\$601.71
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

**Labor**

Equipment Operators, Heavy	233	Includes: Cranes, Hydraulic Excavators >=50 HP, Dozers, Paving Machines, Rock Trenchers, Trenchers >=12", Dump Trucks, Ag Equipment >=150 HP, Scrapers, Water Wagons.	Hour	\$29.32	4	\$117.29
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General Labor	231	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$19.74	16	\$315.76
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**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	\$173.48
Mobilization, medium equipment	1139	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$254.77	1	\$254.77
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	\$70.35	1	\$70.35

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**Scenario:** #3 - Concrete 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), 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:** 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 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. 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:** Total Containment Area

**Scenario Unit:** Square Foot

**Scenario Typical Size:** 432

**Total Scenario Cost:** \$7,756.23

**Scenario Cost/Unit:** \$17.95

**Cost Details**

Component Name	Id	Description	Unit	Cost	Qty	Total
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**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	\$451.17	6	\$2,707.01
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	\$290.09	8	\$2,320.73
Dozer, 80 HP	929	Track mounted Dozer with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	\$65.86	4	\$263.43

**Materials**

Aggregate, Gravel, Graded	46	Gravel, includes materials, equipment and labor to transport and place. Includes washed and unwashed gravel.	Cubic Yard	\$31.25	10	\$312.54
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	\$601.71	1	\$601.71
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

**Labor**

Equipment Operators, Heavy	233	Includes: Cranes, Hydraulic Excavators >=50 HP, Dozers, Paving Machines, Rock Trenchers, Trenchers >=12", Dump Trucks, Ag Equipment >=150 HP, Scrapers, Water Wagons.	Hour	\$29.32	4	\$117.29
General Labor	231	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$19.74	16	\$315.76

**Mobilization**

Aggregate, Shipping, Cubic	2360	Mobilization of aggregate material beyond 20 miles of local delivery	Cubic Yard	\$0.35	500	\$173.48
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Yard-mile		from quarry to construction site. Cubic Yard-mile (Cubic Yard * miles of haul).	Mile			
Mobilization, medium equipment	1139	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$254.77	1	\$254.77
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	\$70.35	1	\$70.35

**Practice:** 309 - Agrichemical Handling Facility

**Scenario:** #4 - Portable Poly Pad For Handling < 65 SF

**Scenario Description:** This practice scenario is a portable agrichemical handling facility for 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), Pipeline (516), Pumping Plant for Water Control (533), 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:** This scenario is a portable agrichemical handling facility consisting of an impermeable barrier poly pad for mixing and loading operations. The average size of the poly pad is 6'x6' with an application equipment length of 4 ft. The handling pad for mixing and loading operations is sized to contain the length of the agrichemical spray tank and its volume. This practice will contain agrichemicals and prevent contamination of surface and ground water resources.

**Scenario Feature Measure:** Mixing Area

**Scenario Unit:** Square Foot

**Scenario Typical Size:** 36

**Total Scenario Cost:** \$793.43

**Scenario Cost/Unit:** \$22.04

**Cost Details**

Component Name	Id	Description	Unit	Cost	Qty	Total
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**Labor**

General Labor	231	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$19.74	1	\$19.74
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**Materials**

PVC Containment Basin, 6' x 6'	1611	Poly containment basin typically 8" to 12" deep with area dimensions in the range of 6' x 6' or larger.	Square Foot	\$21.49	36	\$773.69
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**Practice:** 309 - Agrichemical Handling Facility

**Scenario:** #5 - Earthen Liquid Storage With A Concrete Handling Pad

**Scenario Description:** An earthen lined agrichemical handling facility is constructed for storage of liquid agrichemicals along with a concrete handling pad for 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), Pumping Plant for Water Control (533), Nutrient Management (590), Pest Management (595), Pond Sealing or Lining Flexible Membrane (521A)

**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 handling facility is constructed for storage of liquid agrichemicals along with a handling pad for mixing and loading operations. The average size of the agrichemical handling facility for proper storage of liquid agrichemicals is in an earthen lined containment with bottom dimensions of 30 ft x 40 ft. A handling pad for mixing and loading is located next to the liquid containment and is 20' x 40' 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. Install a curbed (6") reinforced concrete handling pad for mixing and loading. 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:** Floor surface area of Liquid Containment Area + Handling pad

**Scenario Unit:** Square Foot

**Scenario Typical Size:** 2000

**Total Scenario Cost:** \$7,301.23

**Scenario Cost/Unit:** \$3.65

**Cost Details**

Component Name	Id	Description	Unit	Cost	Qty	Total
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**Equipment Installation**

Concrete, CIP, slab on grade, reinforced	37	Steel reinforced concrete formed and cast-in-place as a slab on grade by chute placement. Typical strength is 3000 to 4000 psi. Includes materials, labor and equipment to transport, place and finish.	Cubic Yard	\$290.09	15	\$4,351.37
Excavation, Common Earth, side cast, small equipment	48	Bulk excavation and side casting of common earth with hydraulic excavator with less than 1 CY capacity. Includes equipment and labor.	Cubic Yard	\$2.00	235	\$469.06
Geotextile, woven	42	Woven Geotextile Fabric. Includes materials, equipment and labor	Square Yard	\$2.28	70	\$159.33

**Materials**

Aggregate, Gravel, Graded	46	Gravel, includes materials, equipment and labor to transport and place. Includes washed and unwashed gravel.	Cubic Yard	\$31.25	9	\$281.28
Aggregate, Sand, Graded, Washed	45	Sand, typical ASTM C33 gradation, includes materials, equipment and labor to transport and place	Cubic Yard	\$30.84	13	\$400.86
Painting, concrete surface, impermeable	1497	Painting of concrete surfaces with an impermeable coating. Includes materials and application.	Square Foot	\$1.04	800	\$832.96

**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	450	\$156.13
Mobilization, medium equipment	1139	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$254.77	2	\$509.54
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	\$70.35	2	\$140.70

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**Scenario:** #6 - Fabricated Liquid Storage With Adjacent Concrete Handling Pad

**Scenario Description:** This practice scenario is a fabricated agrichemical handling facility for storage of liquid agrichemicals along with an adjacent concrete mixing and loading pad. 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. 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)

**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 handling facility is constructed for storage of liquid agrichemicals along with an adjacent handling pad for mixing and loading operations. The average size of the fabricated containment is 30 ft x 40 ft with flexible membrane lined walls. The walls are of modular blocks stacked two high for a 4ft wall height on four sides. A handling pad for mixing and loading is located adjacent to the liquid containment and is 16' x 32' with an application equipment length of 28 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 (6") reinforced concrete handling pad for mixing and loading. 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:** Liquid Containment Area + Handling Pad

**Scenario Unit:** Square Foot

**Scenario Typical Size:** 1712

**Total Scenario Cost:** \$17,002.88

**Scenario Cost/Unit:** \$9.93

**Cost Details**

Component Name	Id	Description	Unit	Cost	Qty	Total
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**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	\$451.17	8	\$3,609.34
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	\$290.09	19	\$5,511.73
Dozer, 80 HP	929	Track mounted Dozer with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	\$65.86	8	\$526.86
Geotextile, woven	42	Woven Geotextile Fabric. Includes materials, equipment and labor	Square Yard	\$2.28	15	\$34.14
Skidsteer, 80 HP	933	Skidsteer loader with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	\$44.42	8	\$355.32

**Materials**

Aggregate, Gravel, Graded	46	Gravel, includes materials, equipment and labor to transport and place. Includes washed and unwashed gravel.	Cubic Yard	\$31.25	4	\$125.01
Aggregate, Sand, Graded, Washed	45	Sand, typical ASTM C33 gradation, includes materials, equipment and labor to transport and place	Cubic Yard	\$30.84	27	\$832.55
Block, pre-cast concrete, modular	1496	Pre-cast concrete blocks, typically 2ft x 2ft x 6ft , includes installation and delivery.	Cubic Yard	\$115.21	42	\$4,838.62
Painting, concrete surface, impermeable	1497	Painting of concrete surfaces with an impermeable coating. Includes materials and application.	Square Foot	\$1.04	512	\$533.09

**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	200	\$69.39
Mobilization, medium	1139	Equipment with 70-150 HP or typical weights between 14,000 and	Each	\$254.77	1	\$254.77

equipment		30,000 pounds.				
Mobilization, small equipment	1138	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	\$171.35	1	\$171.35
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	\$70.35	2	\$140.70

**Practice:** 309 - Agrichemical Handling Facility

**Scenario:** #7 - Outdoor Liquid Agrichemical Storage with a Roofed Building for Dry Chemical Storage and Handling Pad

**Scenario Description:** This practice scenario is an outdoor, earthen lined agrichemical handling facility for storage of liquid agrichemicals along with a roofed mixing and loading pad that is also sized to store dry chemicals. 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), Roof Runoff Management (558)

**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 handling facility is constructed for storage of liquid agrichemicals along with a roofed building to store dry agrichemicals with a handling pad for mixing and loading operations. The average size of the agrichemical handling facility for proper storage of liquid agrichemicals is in an earthen lined containment with bottom dimensions of 60 ft x 40 ft. A roofed building for dry agrichemicals and handling pad for mixing and loading is located next to the liquid containment and is 30' x 40' with an application equipment length of 36 ft. The handling pad for mixing and loading operations is roofed and sized to contain the length of the agrichemical spray tank and its volume. Install a curbed (6") reinforced concrete handling pad for mixing and loading. The concrete is sealed and sloped to a collection sump, facility containment has at least two sides constructed of 5 ft post and plant walls. This practice will contain agrichemicals and prevent contamination of surface and ground water resources.

**Scenario Feature Measure:** Floor surface area of Liquid Containment Area + Handling pad

**Scenario Unit:** Square Foot

**Scenario Typical Size:** 3600

**Total Scenario Cost:** \$31,585.19

**Scenario Cost/Unit:** \$8.77

**Cost Details**

Component Name	Id	Description	Unit	Cost	Qty	Total
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**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	\$451.17	2.6	\$1,173.04
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	\$290.09	19	\$5,511.73
Excavation, Common Earth, side cast, small equipment	48	Bulk excavation and side casting of common earth with hydraulic excavator with less than 1 CY capacity. Includes equipment and labor.	Cubic Yard	\$2.00	380	\$758.48
Geotextile, woven	42	Woven Geotextile Fabric. Includes materials, equipment and labor	Square Yard	\$2.28	231	\$525.79

**Materials**

Aggregate, Gravel, Graded	46	Gravel, includes materials, equipment and labor to transport and place. Includes washed and unwashed gravel.	Cubic Yard	\$31.25	38	\$1,187.64
Aggregate, Sand, Graded, Washed	45	Sand, typical ASTM C33 gradation, includes materials, equipment and labor to transport and place	Cubic Yard	\$30.84	19	\$585.87
Dimension Lumber, Treated	1044	Treated dimension lumber with nominal thickness equal or less than 2". Includes lumber and fasteners	Board Foot	\$0.92	853	\$784.92
Painting, concrete surface, impermeable	1497	Painting of concrete surfaces with an impermeable coating. Includes materials and application.	Square Foot	\$1.04	1200	\$1,249.44
Roof, Post Frame Building, 30' to 60' wide	1676	Post Frame Building, no sides, - 30' to 60' 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	\$8.46	2000	\$16,920.00

**Labor**

General Labor	231	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$19.74	80	\$1,578.82
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**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	1900	\$659.23
Mobilization, medium equipment	1139	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$254.77	2	\$509.54
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	\$70.35	2	\$140.70