

**Scenario Worksheet**

**Practice and Scenario Description:**

Information Type	Data
Region	Appalachian
State	North Carolina
Discipline Group	Environmental Engineering
Practice Code/Name	367 - Roofs and Covers
Scenario ID	2
Scenario Name	Post Frame Bld, < 30ft wide
Scenario Description	A timber framed building with a timber or steel "sheet" roof and supporting foundation. Manure is stored as a liquid in basins, tanks, and as a solid on concrete and earthen surfaces. Excess precipitation can cause premature filling of storages or cause nutrients to leach from solid manure piles leading to uncontrolled runoff as well as odor issues. Associated practices include Waste Storage Facility (313), Animal Mortality Facility (316), Composting Facility (317), Agrichemical Handling Facility (309), Roof Runoff Structure (558), and Waste Treatment (629).
Before Practice Situation	Applicable where the exclusion of precipitation from an animal waste storage and/or treatment facility will improve of an existing or planned system. Manure is stored as a liquid in basins, tanks, and as a solid on concrete and earthen surfaces. Excess precipitation can cause premature filling of storages or cause nutrients to leach from solid manure piles leading to uncontrolled runoff as well as odor issues.
After Practice Situation	A timber framed building with a timber or steel "sheet" roof and supporting foundation. Engineered and installed in accordance with appropriate building codes and permits. Typical size is 1,000 square feet and is over an approved animal waste management facility as a component of a CNMP. It is designed to prevent precipitation to allow proper management of animal waste streams (manure or compost streams), thus mitigating the negative factors from the "before practice implementation".
Scenario Feature Measure	Footprint of building
Scenario Unit	Square Foot
Scenario Typical Size	1,000

**Cost Summary:**

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$10,010.00	\$10.01
Equipment/Installation	\$0.00	\$0.00
Labor	\$0.00	\$0.00
Mobilization	\$143.88	\$0.14
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$10,153.88	\$10.15

**Cost Details:**

Cost Category	Component ID	Component Name	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Materials	1672	Roof, Post Frame Building , less than 30' wide	Post Frame Building, no sides, - less than 30' width, includes materials, equipment, and installation. Does not include foundation preparation.	Square Foot	\$10.01	1000	\$10,010.00
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	\$25.64	2	\$51.28
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$92.60	1	\$92.60

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**Practice and Scenario Description:**

Information Type	Data
Region	Appalachian
State	North Carolina
Discipline Group	Environmental Engineering
Practice Code/Name	367 - Roofs and Covers
Scenario ID	3
Scenario Name	Post frame bld. 30ft-60ft wide
Scenario Description	A timber framed building with a steel "sheet" roof and supporting foundation. Manure is stored as a liquid in basins, tanks, and as a solid on concrete and earthen surfaces. Excess precipitation can cause premature filling of storages or cause nutrients to leach from solid manure piles leading to uncontrolled runoff as well as odor issues. Associated practices include Waste Storage Facility (313), Animal Mortality Facility (316), Composting Facility (317), Agrichemical Handling Facility (309), Roof Runoff Structure (558), and Waste Treatment (629).
Before Practice Situation	Applicable where the exclusion of precipitation from an animal waste storage and/or treatment facility will improve of an existing or planned system. Manure is stored as a liquid in basins, tanks, and as a solid on concrete and earthen surfaces. Excess precipitation can cause premature filling of storages or cause nutrients to leach from solid manure piles leading to uncontrolled runoff as well as odor issues.
After Practice Situation	A timber framed building with a steel "sheet" roof and supporting foundation. Engineered and installed in accordance with appropriate building codes and permits. Typical size is 4,000 square feet and is over an approved animal waste management facility as a component of a CNMP. It is designed to prevent precipitation to allow proper management of animal waste streams (manure or compost streams), thus mitigating the negative factors from the "before practice implementation".
Scenario Feature Measure	Footprint of building
Scenario Unit	Square Foot
Scenario Typical Size	4000

**Cost Summary:**

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$29,040.00	\$7.26
Equipment/Installation	\$0.00	\$0.00
Labor	\$0.00	\$0.00
Mobilization	\$143.88	\$0.04
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$29,183.88	\$7.30

**Cost Details:**

Cost Category	Component ID	Component Name	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Materials	1676	Roof, Post Frame Building, 30' to 60' wide	Post Frame Building, no sides, - 30' to 60' width, includes materials, equipment, and installation. Does not include foundation preparation.	Square Foot	\$7.26	4000	\$29,040.00
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	\$25.64	2	\$51.28
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$92.60	1	\$92.60

**Scenario Worksheet**

**Practice and Scenario Description:**

<b>Information Type</b>	<b>Data</b>
Region	Appalachian
State	North Carolina
Discipline Group	Environmental Engineering
Practice Code/Name	367 - Roofs and Covers
Scenario ID	5
Scenario Name	Flexible Membrane Cover
Scenario Description	A fabricated rigid, semi-rigid, or flexible membrane over a waste storage or treatment facility. The membrane will cover the entire surface of a waste storage or treatment facility (e.g. waste treatment lagoon or anaerobic digester). Cover will exclude precipitation and/or capture biogas for controlled release for flaring or anaerobic digestion. Associated practices include Waste Storage Facility (313), Waste Treatment Lagoon (359), Anaerobic Digester (366), Animal Mortality Facility (316), Composting Facility (317), Roof Runoff Structure (558), Pumping Plant (533), and Waste Treatment (629).
Before Practice Situation	Applicable where the exclusion of precipitation from an animal waste storage or treatment lagoon will improve the management of an existing or planned system, capture and controlled release or flaring of emissions from an existing or planned agricultural waste storage to improve air quality, and/or biogas production and capture for energy use are part of the existing or planned animal waste management system.
After Practice Situation	A fabricated rigid, semi-rigid, or flexible membrane over a waste storage or treatment facility. The membrane will cover the entire surface of a waste storage or treatment facility (e.g. waste treatment lagoon or anaerobic digester).
Scenario Feature Measure	Surface of Membrane
Scenario Unit	Square Foot
Scenario Typical Size	10,000

**Cost Summary:**

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$959.76	\$0.10
Equipment/Installation	\$0.00	\$0.00
Labor	\$1,593.76	\$0.16
Mobilization	\$143.88	\$0.01
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$2,697.40	\$0.27

**Cost Details:**

Cost Category	Component ID	Component Name	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Materials	1387	Synthetic Liner, 40 mil	Synthetic 40 mil HDPE, LLDPE, EPDM, etc membrane liner material. Materials only.	Square Foot	\$0.72	1333	\$959.76
Labor	232	Equipment Operators, Light	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	\$19.62	16	\$313.92
Labor	231	General Labor	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$18.67	48	\$896.16
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	\$23.98	16	\$383.68
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	\$25.64	2	\$51.28
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$92.60	1	\$92.60