

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	New England
State	Connecticut
Discipline Group	Engineering General
Practice Code/Name	S21A - Pond Sealing or Lining, Flexible Membrane
Scenario ID	1
Scenario Name	Flexible Membrane Liner
Scenario Description	Installation of a flexible geosynthetic membrane liner, uncovered, to reduce seepage from ponds or waste storage impoundment structures. Cost includes all labor, materials and equipment to install a 40 mil LLDPE, HDPE, EPDM, etc. membrane liner, 8 oz non-woven geotextile underlayment, excavation and backfill of anchor trench, specialist to weld seams and install "boots". Associated practices include 378- Pond, 313 - Waste Storage Facility, 561 - Heavy Use Area Protection, etc. Leak detection system shall be paid for under 606 - Subsurface Drain.
Before Practice Situation	In-place soils exhibit seepage rates in excess of acceptable limits. Ref. AWMFH Appendix 10D.
After Practice Situation	Water conservation and environmental protection provided by limiting seepage losses from ponds or waste storage impoundments.
Scenario Feature Measure	Surface area of Liner Material (including anchorage)
Scenario Unit	Square Foot
Scenario Typical Size	22500

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$16,200.00	\$0.72
Equipment/Installation	\$10,305.22	\$0.46
Labor	\$6,917.44	\$0.31
Mobilization	\$776.54	\$0.03
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$34,199.20	\$1.52

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	22500	\$16,200.00
Equipment/Installation	42	Geotextile, woven	Woven Geotextile Fabric. Includes materials, equipment and labor	Square Yard	\$2.44	2500	\$6,100.00
Equipment/Installation	50	Earthfill, Manually Compacted	Earthfill, manually compacted, includes equipment and labor	Cubic yard	\$5.34	83	\$443.22
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	\$94.05	40	\$3,762.00
Labor	235	Specialist Labor	Labor requiring a specialized skill set: Includes Agronomists, Foresters, Biologists, etc. to provide additional technical information during the planning and implementation of the practice. Does not include NRCS or TSP services.	Hour	\$83.22	32	\$2,663.04
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	\$25.71	80	\$2,056.80
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	\$41.68	20	\$833.60
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	\$34.10	40	\$1,364.00
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	\$75.96	3	\$227.88
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$274.33	2	\$548.66