

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	New England
State	Connecticut
Discipline Group	
Practice Code/Name	398 - Fish Raceway or Tank
Scenario ID	2
Scenario Name	Fish Raceway - Parallel
Scenario Description	The construction of a concrete fish raceway to facilitate the collection of wastes, the containment of cultured fish, and to maintain water quality. Typical practice is side by side 100' long x 6' wide x 3.5' deep concrete raceway with a quiescent zone for waste collection and sloped floors as per the conservation practice standard. This scenario includes all necessary labor and materials for excavation, aggregate, cast-in-place concrete, fish screens, weir boards, and concrete sealing with epoxy paint.
Before Practice Situation	In the before situation, an aquaculture producer has an aquaculture production system with one or more of the following concerns: excessive seepage or frequent release of nutrient laden aquaculture water, potential of loss of non-native aquaculture production fish species to the native environment, and/or poor growing conditions for the current aquaculture species.
After Practice Situation	Fish raceway is typically 4,480 cubic feet in size (100'x12.8'x3.5') with 0.8' thick slab and 0.8' thick walls of cast in place, reinforced concrete. The practice is installed using a hydraulic excavator, and concrete pump truck. Drainage tile, if needed, will be installed according to Subsurface Drain (606). Inlets and outlets, if needed will be installed using Structure for Water Control (587). Pipeline, Pumping Plant, Water Well, and Access Roads may also be needed and will be installed using those standards as appropriate.
Scenario Feature Measure	Cubic Foot of Fish Raceway
Scenario Unit	Cubic Foot
Scenario Typical Size	4,480

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$13,029.52	\$2.91
Equipment/Installation	\$52,887.90	\$11.81
Labor	\$4,992.36	\$1.11
Mobilization	\$787.43	\$0.18
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$71,697.21	\$16.00

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Materials	2059	Fish Screen, Welded Stainless Steel	Stainless Steel Fish Screen. Materials only.	Each	\$2,181.91	4	\$8,727.64
Materials	46	Aggregate, Gravel, Graded	Gravel, includes materials, equipment and labor to transport and place. Includes washed and unwashed gravel.	Cubic yard	\$27.76	73	\$2,026.48
Equipment/Installation	1211	Truck, Concrete Pump	Concrete pump, normally truck mounted. Use this item in association with other concrete components when job requires placement by other than normal chutes. Include drive and setup time in quantity; therefore, do not include mobilization. Includes equi	Hour	\$183.32	24	\$4,399.68
Equipment/Installation	933	Skidsteer, 80 HP	Skidsteer loader with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	\$35.33	12	\$423.96
Equipment/Installation	1228	Excavation, common earth, wet, side cast, large equipment	Bulk excavation and side casting of wet common earth with hydraulic excavator or dragline with greater than 1 CY capacity. Includes equipment and labor.	Cubic Yard	\$4.08	1056	\$4,308.48
Materials	1497	Painting, concrete surface, impermeable	Painting of concrete surfaces with an impermeable coating. Includes materials and application.	Square Foot	\$0.82	2684	\$2,200.88
Equipment/Installation	38	Concrete, CIP, formed reinforced	Steel reinforced concrete formed and cast-in-place 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	\$502.94	87	\$43,755.78
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	\$39.54	24	\$948.96
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	60	\$2,500.80
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	60	\$1,542.60

Mobilization	1140	Mobilization, large equipment	Equipment >150HP or typical weights greater than 30,000 pounds or loads requiring over width or over length permits.	Each	\$513.10	1	\$513.10
Materials	1045	Dimension Lumber, untreated	"Untreated dimension lumber with nominal thickness equal or less than 2"". Includes lumber and fasteners"	Board Foot	\$0.69	108	\$74.52
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$274.33	1	\$274.33

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	New England
State	Connecticut
Discipline Group	
Practice Code/Name	398 - Fish Raceway or Tank
Scenario ID	1
Scenario Name	Fish Raceway - Single
Scenario Description	The construction of a concrete fish raceway to facilitate the collection of wastes, the containment of cultured fish, and to maintain water quality. Typical practice is a 100' long x 6' wide x 3.5' deep concrete raceway with a quiescent zone for waste collection and sloped floors as per the conservation practice standard. This scenario includes all necessary labor and materials for excavation, aggregate, cast-in-place concrete, fish screens, weir boards, and concrete sealing with epoxy paint.
Before Practice Situation	In the before situation, an aquaculture producer has an aquaculture production system with one or more of the following concerns: excessive seepage or frequent release of nutrient laden aquaculture water, potential of loss of non-native aquaculture production fish species to the native environment, and/or poor growing conditions for the current aquaculture species.
After Practice Situation	Fish raceway is typically 2,100 cubic feet in size (100x6x3.5') with 0.8' thick slab and 0.8' thick walls of cast in place, reinforced concrete. The practice is installed using a hydraulic excavator, and concrete pump truck. Drainage tile, if needed, will be installed according to Subsurface Drain (606). Inlets and outlets, if needed will be installed using Structure for Water Control (587). Pipeline, Pumping Plant, Water Well, and Access Roads may also be needed and will be installed using those standards as appropriate.
Scenario Feature Measure	Cubic Foot of Fish Raceway
Scenario Unit	Cubic Foot
Scenario Typical Size	2,100

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$6,806.24	\$3.24
Equipment/Installation	\$34,352.16	\$16.36
Labor	\$3,170.08	\$1.51
Mobilization	\$787.43	\$0.37
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$45,115.91	\$21.48

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Materials	2059	Fish Screen, Welded Stainless Steel	Stainless Steel Fish Screen. Materials only.	Each	\$2,181.91	2	\$4,363.82
Materials	46	Aggregate, Gravel, Graded	Gravel, includes materials, equipment and labor to transport and place. Includes washed and unwashed gravel.	Cubic yard	\$27.76	47	\$1,304.72
Equipment/Installation	1211	Truck, Concrete Pump	Concrete pump, normally truck mounted. Use this item in association with other concrete components when job requires placement by other than normal chutes. Include drive and setup time in quantity; therefore, do not include mobilization. Includes equi	Hour	\$183.32	24	\$4,399.68
Equipment/Installation	933	Skidsteer, 80 HP	Skidsteer loader with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	\$35.33	8	\$282.64
Equipment/Installation	1228	Excavation, common earth, wet, side cast, large equipment	Bulk excavation and side casting of wet common earth with hydraulic excavator or dragline with greater than 1 CY capacity. Includes equipment and labor.	Cubic Yard	\$4.08	862	\$3,516.96
Materials	1497	Painting, concrete surface, impermeable	Painting of concrete surfaces with an impermeable coating. Includes materials and application.	Square Foot	\$0.82	1342	\$1,100.44
Equipment/Installation	38	Concrete, CIP, formed reinforced	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	\$502.94	52	\$26,152.88
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	\$39.54	12	\$474.48
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	40	\$1,667.20
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	40	\$1,028.40

Mobilization	1140	Mobilization, large equipment	Equipment >150HP or typical weights greater than 30,000 pounds or loads requiring over width or over length permits.	Each	\$513.10	1	\$513.10
Materials	1045	Dimension Lumber, untreated	"Untreated dimension lumber with nominal thickness equal or less than 2"". Includes lumber and fasteners"	Board Foot	\$0.69	54	\$37.26
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$274.33	1	\$274.33