

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Appalachian
State	North Carolina
Discipline Group	Engineering General
Practice Code/Name	351 - Water Well Decommissioning
Scenario ID	1
Scenario Name	Shallow Well 20ft. or less deep, 30 inch diameter
Scenario Description	A licensed well driller will seal and permanently close an inactive, abandoned, or unusable water well to prevent excess nutrients in surface and groundwater and to eliminate pesticides transported to surface and ground water. Well will be cleared of all equipment and materials. Residual water column must be treated with chlorine concentration of >50 ppm or according to local, State, Tribal, or Federal regulations.
Before Practice Situation	Shallow well or hand dug well that is less than 20 feet deep. Assume 30" diameter casing. Well will be cleared of all equipment and materials. Residual water column must be treated with chlorine concentration of >50 ppm or according to local, State, Tribal, or Federal regulations.
After Practice Situation	Procedures and sealing materials shall conform to ASTM D5299 and be compatible with all local, State, Tribal, and Federal requirements. Backfill shall be placed and compacted in a manner that minimizes segregation and bulking to prevent surface subsidence. Associated practices: 342 Critical Area Seeding
Scenario Feature Measure	Length of well casing
Scenario Unit	Linear Foot
Scenario Typical Size	20

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$237.40	\$11.87
Equipment/Installation	\$60.31	\$3.02
Labor	\$103.97	\$5.20
Mobilization	\$92.60	\$4.63
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$494.28	\$24.71

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Materials	1333	Grout, cement	Cement grout meeting ASTM specifications for well sealing. Includes both neat-cement grout and bentonite gout mixtures. Includes materials, equipment and labor to place.	Cubic Yard	\$65.30	3.60	\$235.08
Materials	1335	Chlorine	Liquid chlorine bleach. Materials only.	Gallon	\$2.32	1	\$2.32
Equipment/Installation	1334	Grout pump	Grout pump with tremie pipe. Equipment and power unit costs. Labor not included.	Hour	\$12.82	1	\$12.82
Equipment/Installation	50	Earthfill, Manually Compacted	Earthfill, manually compacted, includes equipment and labor	Cubic yard	\$4.23	0.50	\$2.12
Equipment/Installation	926	Backhoe, 80 HP	Wheel mounted backhoe excavator with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	\$45.37	1	\$45.37
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	3	\$56.01
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	2	\$47.96
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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Region	Appalachian
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Practice Code/Name	351 - Water Well Decommissioning
Scenario ID	2
Scenario Name	Shallow Well greater than 20ft. Deep, 30 inch diameter
Scenario Description	A licensed well driller will seal and permanently close an inactive, abandoned, or unusable water well to prevent excess nutrients in surface and groundwater and to eliminate pesticides transported to surface and ground water.
Before Practice Situation	Shallow or hand dug well that is greater than 30 feet deep. Assume 30" diameter casing.
After Practice Situation	Procedures and sealing materials shall conform to ASTM D5299 and be compatible with all local, State, Tribal, and Federal requirements. Backfill shall be placed and compacted in a manner that minimizes segregation and bulking to prevent surface subsidence. Associated practices: 342 Critical Area Seeding
Scenario Feature Measure	Length of well casing
Scenario Unit	Linear Foot
Scenario Typical Size	35

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$413.71	\$11.82
Equipment/Installation	\$112.09	\$3.20
Labor	\$125.30	\$3.58
Mobilization	\$92.60	\$2.65
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$743.69	\$21.25

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Materials	1333	Grout, cement	Cement grout meeting ASTM specifications for well sealing. Includes both neat-cement grout and bentonite grout mixtures. Includes materials, equipment and labor to place.	Cubic Yard	\$65.30	6.30	\$411.39
Materials	1335	Chlorine	Liquid chlorine bleach. Materials only.	Gallon	\$2.32	1	\$2.32
Equipment/Installation	1334	Grout pump	Grout pump with tremie pipe. Equipment and power unit costs. Labor not included.	Hour	\$12.82	1.5	\$19.23
Equipment/Installation	50	Earthfill, Manually Compacted	Earthfill, manually compacted, includes equipment and labor	Cubic yard	\$4.23	0.50	\$2.12
Equipment/Installation	926	Backhoe, 80 HP	Wheel mounted backhoe excavator with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	\$45.37	2	\$90.74
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	3.5	\$65.35
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	2.5	\$59.95
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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Discipline Group	Engineering General
Practice Code/Name	351 - Water Well Decommissioning
Scenario ID	3
Scenario Name	Drilled well less than 300ft deep
Scenario Description	A licensed well driller will seal and permanently close an inactive, abandoned, or unusable water well to prevent excess nutrients in surface and groundwater and to eliminate pesticides transported to surface and ground water.
Before Practice Situation	Drilled well that is less than 300 feet deep. Assume 6" diameter casing.
After Practice Situation	Procedures and sealing materials shall conform to ASTM D5299 and be compatible with all local, State, Tribal, and Federal requirements. Backfill shall be placed and compacted in a manner that minimizes segregation and bulking to prevent surface subsidence. Associated practices: 342 Critical Area Seeding
Scenario Feature Measure	Length of well casing
Scenario Unit	Linear Foot
Scenario Typical Size	200

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$67.62	\$0.34
Equipment/Installation	\$58.19	\$0.29
Labor	\$69.94	\$0.35
Mobilization	\$92.60	\$0.46
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$288.35	\$1.44

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Materials	1333	Grout, cement	Cement grout meeting ASTM specifications for well sealing. Includes both neat-cement grout and bentonite gout mixtures. Includes materials, equipment and labor to place.	Cubic Yard	\$65.30	1	\$65.30
Materials	1335	Chlorine	Liquid chlorine bleach. Materials only.	Gallon	\$2.32	1	\$2.32
Equipment/Installation	1334	Grout pump	Grout pump with tremie pipe. Equipment and power unit costs. Labor not included.	Hour	\$12.82	1	\$12.82
Equipment/Installation	926	Backhoe, 80 HP	Wheel mounted backhoe excavator with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	\$45.37	1	\$45.37
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	\$21.98	1	\$21.98
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	2	\$47.96
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:

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Discipline Group	Engineering General
Practice Code/Name	351 - Water Well Decommissioning
Scenario ID	4
Scenario Name	Drilled well greater than 300ft deep
Scenario Description	A licensed well driller will seal and permanently close an inactive, abandoned, or unusable water well to prevent excess nutrients in surface and groundwater and to eliminate pesticides transported to surface and ground water.
Before Practice Situation	Drilled well that is greater than 300 feet deep. Assume 6" diameter casing.
After Practice Situation	Procedures and sealing materials shall conform to ASTM D5299 and be compatible with all local, State, Tribal, and Federal requirements. Backfill shall be placed and compacted in a manner that minimizes segregation and bulking to prevent surface subsidence. Associated practices: 342 Critical Area Seeding
Scenario Feature Measure	Length of well casing
Scenario Unit	Linear Foot
Scenario Typical Size	500

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$165.57	\$0.33
Equipment/Installation	\$58.19	\$0.12
Labor	\$93.92	\$0.19
Mobilization	\$92.60	\$0.19
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$410.28	\$0.82

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Materials	1333	Grout, cement	Cement grout meeting ASTM specifications for well sealing. Includes both neat-cement grout and bentonite grout mixtures. Includes materials, equipment and labor to place.	Cubic Yard	\$65.30	2.5	\$163.25
Materials	1335	Chlorine	Liquid chlorine bleach. Materials only.	Gallon	\$2.32	1	\$2.32
Equipment/Installation	1334	Grout pump	Grout pump with tremie pipe. Equipment and power unit costs. Labor not included.	Hour	\$12.82	1	\$12.82
Equipment/Installation	926	Backhoe, 80 HP	Wheel mounted backhoe excavator with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	\$45.37	1	\$45.37
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	\$21.98	1	\$21.98
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	3	\$71.94
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