

Practice: 516 - Livestock Pipeline

Scenario: #1 - PE Pipe less than or equal to 1 in. Dia., Buried 4 ft Deep

Scenario Description:

Description: Install 1" dia. polyethylene pipe, buried below frost depth to supply water for livestock watering facility. Practice is installed in conjunction with 614 - Watering Facility. Construct 1000 FT of 1 inch, Polyethylene (PE) pipeline with appurtenances, installed below ground a minimum 4 feet of ground cover. Appurtenances include: couplings, fittings, thrust blocks, gate valves (2), air release valves (2), drain valve (1), and pressure relief valve (1), and Frost free hydrant. Revegetation is not included.

Resource Concerns: Inadequate Livestock Water, Inefficient Energy Use.

Associated Practices: Critical Area Planting (342), Pumping Plant (533), and Watering Facility (614).

Before Situation:

Water supplies need to be conveyed through pipelines for use by livestock or wildlife.

After Situation:

Pipeline(s) convey and/or distribute water to storage and/or watering facilities, for use by livestock or wildlife.

Scenario Feature Measure: Length of Pipe

Scenario Unit: Linear Foot

Scenario Typical Size: 1,000

Scenario Cost: \$2,270.02

Scenario Cost/Unit: \$2.27

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Equipment/Installation						
Backhoe, 80 HP	926	Wheel mounted backhoe excavator with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	\$55.45	8	\$443.60
Labor						
Equipment Operators, Light	232	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	\$24.86	8	\$198.88
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	\$24.74	8	\$197.92
Materials						
Pipe, PE, 1", DR 9	997	Materials: - 1" - PE - 160 psi - ASTM D3035 DR 9	Foot	\$0.67	1100	\$737.00
Freeze Proof Hydrant, ≤ 3' Bury	240	Freeze Proof Hydrant, 3 foot or less bury. Materials only.	Each	\$45.52	4	\$182.08
Mobilization						
Mobilization, medium equipment	1139	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$255.27	2	\$510.54

Practice: 516 - Livestock Pipeline

Scenario: #2 - 1 to 2 in PE Pipe Dia., Buried 4 ft Deep

Scenario Description:

Description: Install 1.5" dia. polyethylene pipe, buried below frost depth to supply water for livestock watering facility. Practice is installed in conjunction with 614 - Watering Facility. Construct 1000 FT of 1.5 inch, Polyethylene (PE) pipeline with appurtenances, installed below ground a minimum 4 feet of ground cover. Appurtenances include: couplings, fittings, thrust blocks, gate valves (2), air release valves (2), drain valve (1), and pressure relief valve (1), and Frost free hydrant. Revegetation is not included.

Resource Concerns: Inadequate Livestock Water, Inefficient Energy Use.

Associated Practices: Critical Area Planting (342), Pumping Plant (533), and Watering Facility (614).

Before Situation:

Water supplies need to be conveyed through pipelines for use by livestock or wildlife.

After Situation:

Pipeline(s) convey and/or distribute water to storage and/or watering facilities, for use by livestock or wildlife.

Scenario Feature Measure: Length of Pipe

Scenario Unit: Linear Foot

Scenario Typical Size: 1,000

Scenario Cost: \$3,515.19

Scenario Cost/Unit: \$3.52

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Equipment/Installation						
Backhoe, 80 HP	926	Wheel mounted backhoe excavator with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	\$55.45	8	\$443.60
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	\$24.74	8	\$197.92
Equipment Operators, Light	232	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	\$24.86	8	\$198.88
Materials						
Freeze Proof Hydrant, ≤ 3' Bury	240	Freeze Proof Hydrant, 3 foot or less bury. Materials only.	Each	\$45.52	4	\$182.08
Pipe, HDPE, smooth wall, weight priced	1379	High Density Polyethylene (HDPE) compound manufactured into smooth wall pipe. Materials only.	Pound	\$3.79	523	\$1,982.17
Mobilization						
Mobilization, medium equipment	1139	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$255.27	2	\$510.54

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Scenario: #3 - PE Pipe greater or equal to 2 in. Dia., Buried 4ft Deep

Scenario Description:

Description: Install 2" dia. polyethylene pipe, buried below frost depth to supply water for livestock watering facility. Practice is installed in conjunction with 614 - Watering Facility. Construct 1000 FT of 1 inch, Polyethylene (PE) pipeline with appurtenances, installed below ground a minimum 4 feet of ground cover. Appurtenances include: couplings, fittings, thrust blocks, gate valves (2), air release valves (2), drain valve (1), and pressure relief valve (1), and Frost free hydrant. Revegetation is not included.

Resource Concerns: Inadequate Livestock Water, Inefficient Energy Use.

Associated Practices: Critical Area Planting (342), Pumping Plant (533), and Watering Facility (614).

Before Situation:

Water supplies need to be conveyed through pipelines for use by livestock or wildlife.

After Situation:

Pipeline(s) convey and/or distribute water to storage and/or watering facilities, for use by livestock or wildlife.

Scenario Feature Measure: Length of Pipe

Scenario Unit: Linear Foot

Scenario Typical Size: 1,000

Scenario Cost: \$4,633.24

Scenario Cost/Unit: \$4.63

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Equipment/Installation						
Backhoe, 80 HP	926	Wheel mounted backhoe excavator with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	\$55.45	8	\$443.60
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	\$24.74	8	\$197.92
Equipment Operators, Light	232	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	\$24.86	8	\$198.88
Materials						
Pipe, HDPE, smooth wall, weight priced	1379	High Density Polyethylene (HDPE) compound manufactured into smooth wall pipe. Materials only.	Pound	\$3.79	818	\$3,100.22
Freeze Proof Hydrant, ≤ 3' Bury	240	Freeze Proof Hydrant, 3 foot or less bury. Materials only.	Each	\$45.52	4	\$182.08
Mobilization						
Mobilization, medium equipment	1139	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$255.27	2	\$510.54

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Scenario: #4 - PE Pipe less than or equal to 1 in. Dia., Buried 4ft Deep w/sand bedding

Scenario Description:

Description: Install 1" dia. polyethylene pipe with sand bedding, buried below frost depth to supply water for livestock watering facility. Practice is installed in conjunction with 614 - Watering Facility. Construct 1000 FT of 1 inch, Polyethylene (PE) pipeline with appurtenances, installed below ground a minimum 4 feet of ground cover. Appurtenances include: couplings, fittings, thrust blocks, gate valves (2), air release valves (2), drain valve (1), and pressure relief valve (1), and Frost free hydrant. Revegetation is not included.

Resource Concerns: Inadequate Livestock Water, Inefficient Energy Use.

Associated Practices: Critical Area Planting (342), Pumping Plant (533), and Watering Facility (614).

Before Situation:

Water supplies need to be conveyed through pipelines for use by livestock or wildlife.

After Situation:

Pipeline(s) convey and/or distribute water to storage and/or watering facilities, for use by livestock or wildlife.

Scenario Feature Measure: Length of Pipe

Scenario Unit: Linear Foot

Scenario Typical Size: 1,000

Scenario Cost: \$4,579.44

Scenario Cost/Unit: \$4.58

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Equipment/Installation						
Trenching, Earth, 12" x 60"	1459	Trenching, earth, 12" wide x 60" depth, includes equipment and labor for trenching, laying 3"-6" CPP drain line with envelope, and backfilling.	Foot	\$1.86	1000	\$1,860.00
Materials						
Aggregate, Gravel, Graded	46	Gravel, includes materials, equipment and labor to transport and place. Includes washed and unwashed gravel.	Cubic yard	\$34.86	37	\$1,289.82
Freeze Proof Hydrant, ≤ 3' Bury	240	Freeze Proof Hydrant, 3 foot or less bury. Materials only.	Each	\$45.52	4	\$182.08
Pipe, PE, 1", DR 9	997	Materials: - 1" - PE - 160 psi - ASTM D3035 DR 9	Foot	\$0.67	1100	\$737.00
Mobilization						
Mobilization, medium equipment	1139	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$255.27	2	\$510.54

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Scenario: #5 - 1 to 2 in. Dia. PE Pipe, Buried 4ft Deep w/ sand bedding

Scenario Description:

Description: Install 1.5" dia. polyethylene pipe with sand bedding, buried below frost depth to supply water for livestock watering facility. Practice is installed in conjunction with 614 - Watering Facility. Construct 1000 FT of 1.5 inch, Polyethylene (PE) pipeline with appurtenances, installed below ground a minimum 4 feet of ground cover. Appurtenances include: couplings, fittings, thrust blocks, gate valves (2), air release valves (2), drain valve (1), and pressure relief valve (1), and Frost free hydrant. Revegetation is not included.

Resource Concerns: Inadequate Livestock Water, Inefficient Energy Use.

Associated Practices: Critical Area Planting (342), Pumping Plant (533), and Watering Facility (614).

Before Situation:

Water supplies need to be conveyed through pipelines for use by livestock or wildlife.

After Situation:

Pipeline(s) convey and/or distribute water to storage and/or watering facilities, for use by livestock or wildlife.

Scenario Feature Measure: Length of Pipe

Scenario Unit: Linear Foot

Scenario Typical Size: 1,000

Scenario Cost: \$5,824.61

Scenario Cost/Unit: \$5.82

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Equipment/Installation						
Trenching, Earth, 12" x 60"	1459	Trenching, earth, 12" wide x 60" depth, includes equipment and labor for trenching, laying 3"-6" CPP drain line with envelope, and backfilling.	Foot	\$1.86	1000	\$1,860.00
Materials						
Freeze Proof Hydrant, ≤ 3' Bury	240	Freeze Proof Hydrant, 3 foot or less bury. Materials only.	Each	\$45.52	4	\$182.08
Pipe, HDPE, smooth wall, weight priced	1379	High Density Polyethylene (HDPE) compound manufactured into smooth wall pipe. Materials only.	Pound	\$3.79	523	\$1,982.17
Aggregate, Gravel, Graded	46	Gravel, includes materials, equipment and labor to transport and place. Includes washed and unwashed gravel.	Cubic yard	\$34.86	37	\$1,289.82
Mobilization						
Mobilization, medium equipment	1139	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$255.27	2	\$510.54

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Scenario: #6 - PE Pipe greater than or equal to 2in Dia., Buried 4ft Deep w/ sand bedding

Scenario Description:

Description: Install 2" dia. polyethylene pipe with sand bedding, buried below frost depth to supply water for livestock watering facility. Practice is installed in conjunction with 614 - Watering Facility. Construct 1000 FT of 1 inch, Polyethylene (PE) pipeline with appurtenances, installed below ground a minimum 4 feet of ground cover. Appurtenances include: couplings, fittings, thrust blocks, gate valves (2), air release valves (2), drain valve (1), and pressure relief valve (1), and Frost free hydrant. Revegetation is not included.

Resource Concerns: Inadequate Livestock Water, Inefficient Energy Use.

Associated Practices: Critical Area Planting (342), Pumping Plant (533), and Watering Facility (614).

Before Situation:

Water supplies need to be conveyed through pipelines for use by livestock or wildlife.

After Situation:

Pipeline(s) convey and/or distribute water to storage and/or watering facilities, for use by livestock or wildlife.

Scenario Feature Measure: Length of Pipe

Scenario Unit: Linear Foot

Scenario Typical Size: 1,000

Scenario Cost: \$6,942.66

Scenario Cost/Unit: \$6.94

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Equipment/Installation						
Trenching, Earth, 12" x 60"	1459	Trenching, earth, 12" wide x 60" depth, includes equipment and labor for trenching, laying 3"-6" CPP drain line with envelope, and backfilling.	Foot	\$1.86	1000	\$1,860.00
Materials						
Aggregate, Gravel, Graded	46	Gravel, includes materials, equipment and labor to transport and place. Includes washed and unwashed gravel.	Cubic yard	\$34.86	37	\$1,289.82
Pipe, HDPE, smooth wall, weight priced	1379	High Density Polyethylene (HDPE) compound manufactured into smooth wall pipe. Materials only.	Pound	\$3.79	818	\$3,100.22
Freeze Proof Hydrant, ≤ 3' Bury	240	Freeze Proof Hydrant, 3 foot or less bury. Materials only.	Each	\$45.52	4	\$182.08
Mobilization						
Mobilization, medium equipment	1139	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$255.27	2	\$510.54

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Scenario: #7 - PE Pipe less than or equal to 1in. Dia., Buried 2ft Deep

Scenario Description:

Description: Install 1" dia. polyethylene pipe, buried less than 2 feet below the ground surface to supply water for livestock watering facility. Practice is installed in conjunction with 614 - Watering Facility. Construct 1000 FT of 1 inch, Polyethylene (PE) pipeline with appurtenances, installed below ground with less than 2 feet of ground cover. Appurtenances include: couplings, fittings, thrust blocks, gate valves (2), air release valves (2), drain valve (1), and pressure relief valve (1), and Frost free hydrant. Revegetation is not included. Resource Concerns: Inadequate Livestock Water, Inefficient Energy Use. Associated Practices: Critical Area Planting (342), Pumping Plant (533), and Watering Facility (614).

Before Situation:

Water supplies need to be conveyed through pipelines for use by livestock or wildlife.

After Situation:

Pipeline(s) convey and/or distribute water to storage and/or watering facilities, for use by livestock or wildlife.

Scenario Feature Measure: Length of Pipe

Scenario Unit: Linear Foot

Scenario Typical Size: 1,000

Scenario Cost: \$1,954.87

Scenario Cost/Unit: \$1.95

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Equipment/Installation						
Backhoe, 80 HP	926	Wheel mounted backhoe excavator with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	\$55.45	5	\$277.25
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	\$24.74	5	\$123.70
Equipment Operators, Light	232	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	\$24.86	5	\$124.30
Materials						
Freeze Proof Hydrant, ≤ 3' Bury	240	Freeze Proof Hydrant, 3 foot or less bury. Materials only.	Each	\$45.52	4	\$182.08
Pipe, PE, 1", DR 9	997	Materials: - 1" - PE - 160 psi - ASTM D3035 DR 9	Foot	\$0.67	1100	\$737.00
Mobilization						
Mobilization, medium equipment	1139	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$255.27	2	\$510.54

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Scenario: #8 - 1 to 2in. Dia. PE Pipe , Buried 2ft Deep

Scenario Description:

Description: Install 1.5" dia. polyethylene pipe, buried less than 2 feet below the ground surface to supply water for livestock watering facility. Practice is installed in conjunction with 614 - Watering Facility. Construct 1000 FT of 1.5 inch, Polyethylene (PE) pipeline with appurtenances, installed below ground with less than 2 feet of ground cover. Appurtenances include: couplings, fittings, thrust blocks, gate valves (2), air release valves (2), drain valve (1), and pressure relief valve (1), and Frost free hydrant. Revegetation is not included. Resource Concerns: Inadequate Livestock Water, Inefficient Energy Use. Associated Practices: Critical Area Planting (342), Pumping Plant (533), and Watering Facility (614).

Before Situation:

Water supplies need to be conveyed through pipelines for use by livestock or wildlife.

After Situation:

Pipeline(s) convey and/or distribute water to storage and/or watering facilities, for use by livestock or wildlife.

Scenario Feature Measure: Length of Pipe

Scenario Unit: Linear Foot

Scenario Typical Size: 1,000

Scenario Cost: \$3,200.04

Scenario Cost/Unit: \$3.20

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Equipment/Installation						
Backhoe, 80 HP	926	Wheel mounted backhoe excavator with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	\$55.45	5	\$277.25
Labor						
Equipment Operators, Light	232	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	\$24.86	5	\$124.30
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	\$24.74	5	\$123.70
Materials						
Freeze Proof Hydrant, ≤ 3' Bury	240	Freeze Proof Hydrant, 3 foot or less bury. Materials only.	Each	\$45.52	4	\$182.08
Pipe, HDPE, smooth wall, weight priced	1379	High Density Polyethylene (HDPE) compound manufactured into smooth wall pipe. Materials only.	Pound	\$3.79	523	\$1,982.17
Mobilization						
Mobilization, medium equipment	1139	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$255.27	2	\$510.54

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Scenario: #9 - PE Pipe greater or equal to 2in. Dia., Buried 2ft Deep

Scenario Description:

Description: Install 2" dia. polyethylene pipe, buried less than 2 feet below the ground surface to supply water for livestock watering facility. Practice is installed in conjunction with 614 - Watering Facility. Construct 1000 FT of 2 inch, Polyethylene (PE) pipeline with appurtenances, installed below ground with less than 2 feet of ground cover. Appurtenances include: couplings, fittings, thrust blocks, gate valves (2), air release valves (2), drain valve (1), and pressure relief valve (1), and Frost free hydrant. Revegetation is not included. Resource Concerns: Inadequate Livestock Water, Inefficient Energy Use. Associated Practices: Critical Area Planting (342), Pumping Plant (533), and Watering Facility (614).

Before Situation:

Water supplies need to be conveyed through pipelines for use by livestock or wildlife.

After Situation:

Pipeline(s) convey and/or distribute water to storage and/or watering facilities, for use by livestock or wildlife.

Scenario Feature Measure: Length of Pipe

Scenario Unit: Linear Foot

Scenario Typical Size: 1,000

Scenario Cost: \$4,318.09

Scenario Cost/Unit: \$4.32

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Equipment/Installation						
Backhoe, 80 HP	926	Wheel mounted backhoe excavator with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	\$55.45	5	\$277.25
Labor						
Equipment Operators, Light	232	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	\$24.86	5	\$124.30
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	\$24.74	5	\$123.70
Materials						
Pipe, HDPE, smooth wall, weight priced	1379	High Density Polyethylene (HDPE) compound manufactured into smooth wall pipe. Materials only.	Pound	\$3.79	818	\$3,100.22
Freeze Proof Hydrant, ≤ 3' Bury	240	Freeze Proof Hydrant, 3 foot or less bury. Materials only.	Each	\$45.52	4	\$182.08
Mobilization						
Mobilization, medium equipment	1139	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$255.27	2	\$510.54

Practice: 516 - Livestock Pipeline

Scenario: #10 - PE Pipe less than or equal to 1in. Dia., Above Ground

Scenario Description:

Description: Install 1" dia. polyethylene pipe, above ground to supply water for livestock watering facility. Practice is installed in conjunction with 614 - Watering Facility. Construct 1000 FT of 1 inch, Polyethylene (PE) pipeline with appurtenances, installed above ground. Appurtenances include: couplings, fittings, thrust blocks, gate valves (2), air release valves (2), drain valve (1), and pressure relief valve (1), and Frost free hydrant. Revegetation is not included.

Resource Concerns: Inadequate Livestock Water, Inefficient Energy Use.

Associated Practices: Critical Area Planting (342), Pumping Plant (533), and Watering Facility (614).

Before Situation:

Water supplies need to be conveyed through pipelines for use by livestock or wildlife.

After Situation:

Pipeline(s) convey and/or distribute water to storage and/or watering facilities, for use by livestock or wildlife.

Scenario Feature Measure: Length of Pipe

Scenario Unit: Linear Foot

Scenario Typical Size: 1,000

Scenario Cost: \$1,298.05

Scenario Cost/Unit: \$1.30

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
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	\$24.74	5	\$123.70
Materials						
Freeze Proof Hydrant, ≤ 3' Bury	240	Freeze Proof Hydrant, 3 foot or less bury. Materials only.	Each	\$45.52	4	\$182.08
Pipe, PE, 1", DR 9	997	Materials: - 1" - PE - 160 psi - ASTM D3035 DR 9	Foot	\$0.67	1100	\$737.00
Mobilization						
Mobilization, medium equipment	1139	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$255.27	1	\$255.27

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Scenario: #11 - 1 to 2in. Dia. PE Pipe, Above Ground

Scenario Description:

Description: Install 1.5" dia. polyethylene pipe, above ground to supply water for livestock watering facility. Practice is installed in conjunction with 614 - Watering Facility. Construct 1000 FT of 1.5 inch, Polyethylene (PE) pipeline with appurtenances, installed above ground. Appurtenances include: couplings, fittings, thrust blocks, gate valves (2), air release valves (2), drain valve (1), and pressure relief valve (1), and Frost free hydrant. Revegetation is not included.

Resource Concerns: Inadequate Livestock Water, Inefficient Energy Use.

Associated Practices: Critical Area Planting (342), Pumping Plant (533), and Watering Facility (614).

Before Situation:

Water supplies need to be conveyed through pipelines for use by livestock or wildlife.

After Situation:

Pipeline(s) convey and/or distribute water to storage and/or watering facilities, for use by livestock or wildlife.

Scenario Feature Measure: Length of Pipe

Scenario Unit: Linear Foot

Scenario Typical Size: 1,000

Scenario Cost: \$2,543.22

Scenario Cost/Unit: \$2.54

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
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	\$24.74	5	\$123.70
Materials						
Pipe, HDPE, smooth wall, weight priced	1379	High Density Polyethylene (HDPE) compound manufactured into smooth wall pipe. Materials only.	Pound	\$3.79	523	\$1,982.17
Freeze Proof Hydrant, ≤ 3' Bury	240	Freeze Proof Hydrant, 3 foot or less bury. Materials only.	Each	\$45.52	4	\$182.08
Mobilization						
Mobilization, medium equipment	1139	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$255.27	1	\$255.27

Practice: 516 - Livestock Pipeline

Scenario: #12 - PE Pipegreater or equal 2in. Dia., Above Ground

Scenario Description:

Description: Install 2" dia. polyethylene pipe, above ground to supply water for livestock watering facility. Practice is installed in conjunction with 614 - Watering Facility. Construct 1000 FT of 2 inch, Polyethylene (PE) pipeline with appurtenances, installed above ground. Appurtenances include: couplings, fittings, thrust blocks, gate valves (2), air release valves (2), drain valve (1), and pressure relief valve (1), and Frost free hydrant. Revegetation is not included.

Resource Concerns: Inadequate Livestock Water, Inefficient Energy Use.

Associated Practices: Critical Area Planting (342), Pumping Plant (533), and Watering Facility (614).

Before Situation:

Water supplies need to be conveyed through pipelines for use by livestock or wildlife.

After Situation:

Pipeline(s) convey and/or distribute water to storage and/or watering facilities, for use by livestock or wildlife.

Scenario Feature Measure: Length of Pipe

Scenario Unit: Linear Foot

Scenario Typical Size: 1,000

Scenario Cost: \$3,916.54

Scenario Cost/Unit: \$3.92

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
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	\$24.74	5	\$123.70
Materials						
Pipe, HDPE, smooth wall, weight priced	1379	High Density Polyethylene (HDPE) compound manufactured into smooth wall pipe. Materials only.	Pound	\$3.79	818	\$3,100.22
Freeze Proof Hydrant, ≤ 3' Bury	240	Freeze Proof Hydrant, 3 foot or less bury. Materials only.	Each	\$45.52	4	\$182.08
Mobilization						
Mobilization, medium equipment	1139	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$255.27	2	\$510.54