

MoGas Pipeline LLC
Final Abandonment Estimate

Summary Option I
 (Abandon in-place)

	Estimated Cost (Mar 2009\$)
I. Pipeline Retirement	
A. Clean and purge transmission lines	\$330,288
B. Pipe removal	(Not applicable)
C. Pipe handling and storage	(Not applicable)
D. Uncased highway/railroad crossings	
1 Uncased highway crossings	\$146,070
2 Uncased railroad crossings	\$48,690
E. Cased highway/railroad crossings	
1 Cased highway crossings	\$8,179,701
2 Cased railroad crossings	\$884,292
F. Vent pipes	\$175,776
G. Large river crossings	
1 Mississippi River	\$130,285
2 Missouri River	\$136,051
H. Large stream crossings	\$634,620
I. Small stream crossings	\$5,280,343
J. Mainline valve sites	\$674,570
K. Cathodic protection facilities	
1 Remove test sites	\$506,581
2 Remove rectifiers	\$32,625
L. Pipeline markers	\$364,800
M. M&R stations	
1 Medium	\$1,393,983
2 Small	\$880,126
3 Very small	\$55,968
N. Curryville compressor station	\$873,890
Total I.	\$20,728,658
II. Salvage	
A. Equipment	(\$99,180)
B. Scrap steel	(\$208,777)
C. Line pack	(\$99,023)
Total II.	(\$406,980)
III. Contingency	
(10% of I above)	\$2,072,866
Total III.	\$2,072,866
Grand Total:	\$22,394,544

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Summary Option II

(Remove pipe)

	Estimated Cost (Mar 2009\$)
I. Pipeline Retirement	
A. Clean and purge transmission lines	\$330,288
B. Pipe removal	\$19,329,846
C. Pipe handling and storage	\$1,708,123
D. Uncased highway/railroad crossings	
1 Uncased highway crossings	\$146,070
2 Uncased railroad crossings	\$48,690
E. Cased highway/railroad crossings	
1 Cased highway crossings	\$8,179,701
2 Cased railroad crossings	\$884,292
F. Vent pipes	\$175,776
G. Large river crossings	
1 Mississippi River	\$130,285
2 Missouri River	\$136,051
H. Large stream crossings	\$634,620
I. Small stream crossings	\$5,280,343
J. Mainline valve sites	\$674,570
K. Cathodic protection facilities	
1 Remove test sites	\$506,581
2 Remove rectifiers	\$32,625
L. Pipeline markers	(Included in I.B. Pipe removal)
M. M&R stations	
1 Medium	\$1,393,983
2 Small	\$880,126
3 Very small	\$55,968
N. Curryville compressor station	\$873,890
Total I.	\$41,401,827
II. Salvage	
A. Equipment	(\$99,180)
B. Scrap steel	(\$3,509,529)
C. Line pack	(\$99,023)
Total II.	(\$3,707,732)
III. Contingency	
(10% of I above)	\$4,140,183
Total III.	\$4,140,183
Grand Total:	\$41,834,278

MoGas Pipeline LLC Final Abandonment Estimate

I. Pipeline Retirement

A. Clean and purge transmission lines

Description of Work:

Prior to its last delivery, pipeline company conducts a series of pigging operations to ensure that its transmission lines are clean and free of liquids. After the last delivery to its customers, pipeline company operating staff isolates the pipeline system from gas supply inputs and delivery points. Abandonment pressure is estimated to be 200 psig. Unrecovered line pack is evacuated by flaring or venting. At this point pipeline is filled with natural gas at atmospheric pressure. Pipeline company staff evacuates sections of pipeline using pipeline evacuation equipment. At this point pipeline is filled with air at atmospheric pressure. Pipeline is ready for demolition work.

- 1 Estimated cost to clean and purge 100-mile transmission pipeline segment of hydrocarbons:

	Unit	No.	Days	Rate	Total
a. Pigging operation prior to final shutdown	each	2		\$10,000	\$20,000
b. Isolate pipeline from input and delivery points	person	3	5	\$1,000	\$15,000
c. Blowdown system at M/L valves (10 sites)	person	3	10	\$1,000	\$30,000
d. Pipeline evacuation (10 sites)	person	3	20	\$1,000	\$60,000
					<u>\$125,000</u>

Estimated cost per mile: \$1,250

- 2 Estimated cost to clean and purge pipeline company transmission pipelines:

	Miles	Cost Per Mile	Total
a. Transmission pipelines	264	\$1,250	\$330,288

MoGas Pipeline LLC Final Abandonment Estimate

I. Pipeline Retirement

B. Pipe removal (Option II Only)

Description of Work:

Detailed cost estimate below reflects work required to remove a 16-inch dia. transmission pipeline. Work includes trench excavation, cutting pipe into 40-ft sections, loading pipe onto pipe trucks and hauling to temporary storage yard, backfilling trench, and restoration of area. Time to achieve each task is based on the removal of one mile of 16-inch dia. pipe. Removal costs are adjusted for pipe diameters less than 16". Estimate also includes removal of pipeline markers, environmental inspection, pipeline company inspection, ROW damage payments, and pipeline company management and overhead costs.

1. Excavate trench (1 day)

Equipment	No.	Hours	Rate	Total
dozer, Cat D-6R	1	10	\$85.15	\$852
backhoe, Cat 320C	3	10	\$47.65	\$1,430
flatbed truck	1	10	\$25.08	\$251
1/2 ton pickup with 4wd	2	10	\$11.35	\$227
small tools, 2% of labor				\$132
Subtotal:				\$2,891

Labor	No.	Hours	Rate	Total
operator	4	10	\$57.94	\$2,318
teamster	1	10	\$53.57	\$536
laborer	4	10	\$52.78	\$2,111
foreman	1	10	\$75.14	\$751
per diem	1 day	crew size:	\$90.00	\$900
Subtotal:				\$6,616

Material	Total
allow 2% of labor	\$132
Subtotal:	\$132

Total Direct Costs (1) = \$9,639

2. Remove pipe from trench, cut pipe, load on trucks, and haul to storage yard (1 day)

Equipment	No.	Hours	Rate	Total
hydrocrane, Grove, 25 ton	1	10	\$56.68	\$567
pipelayer, Cat, 561-M, 18' boom	2	10	\$38.05	\$761
pipe truck	3	10	\$52.31	\$1,569
flatbed truck	1	10	\$25.08	\$251
lowboy	1	10	\$56.13	\$561
3/4 ton pick-up with trailer	4	10	\$27.77	\$1,111
1/2 ton pickup with 4wd	4	10	\$11.35	\$454
small tools, 2% of labor				\$329
Subtotal:				\$5,603

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I. B. Pipe removal (continued)

Line Item 2 (continued)

Labor		No.	Hours	Rate	Total
operator (hydrocrane)		1	10	\$66.01	\$660
operator		2	10	\$57.94	\$1,159
teamster		5	10	\$53.57	\$2,679
pipefitter/welder		4	10	\$73.73	\$2,949
helper		4	10	\$44.24	\$1,770
laborer		8	10	\$52.78	\$4,222
foreman		1	10	\$75.14	\$751
per diem	1 day	crew size:	25	\$90.00	\$2,250
				Subtotal:	\$16,440

Material		Total
allow 2% of labor		\$329
		Subtotal:
		\$329

Total Direct Costs (2) = \$22,372

3. Backfill trench (1 day)

Equipment		No.	Hours	Rate	Total
dozer, Cat D-6R		1	10	\$85.15	\$852
track loader, Cat 953C		2	10	\$54.56	\$1,091
dump truck 14 cy		3	10	\$39.38	\$1,181
1/2 ton pickup with 4wd		2	10	\$11.35	\$227
small tools, 2% of labor					\$144
				Subtotal:	\$3,495

Labor		No.	Hours	Rate	Total
operator		3	10	\$57.94	\$1,738
teamster		3	10	\$53.57	\$1,607
laborer		4	10	\$52.78	\$2,111
foreman		1	10	\$75.14	\$751
per diem	1 day	crew size:	11	\$90.00	\$990
				Subtotal:	\$7,198

Material		Total
Backfill (cy)	\$10 300 cy	\$3,000
Sales tax @ 7%		\$210
Miscellaneous (2% of labor)		\$144
		Subtotal:
		\$3,354

Total Direct Costs (3) = \$14,047

MoGas Pipeline LLC Final Abandonment Estimate

I. B. Pipe removal (continued)

4. Restore site (1 day)

Equipment	No.	Hours	Rate	Total
dozer, Cat D-6R	2	10	\$85.15	\$1,703
track loader, Cat 953C	1	10	\$54.56	\$546
flatbed truck	1	10	\$25.08	\$251
dump truck 14 cy	1	10	\$39.38	\$394
1/2 ton pickup with 4wd	1	10	\$11.35	\$114
small tools, 2% of labor				\$107
Subtotal:				\$3,113

Labor	No.	Hours	Rate	Total
operator	3	10	\$57.94	\$1,738
teamster	2	10	\$53.57	\$1,071
laborer	2	10	\$52.78	\$1,056
foreman	1	10	\$75.14	\$751
per diem	1 day	crew size:	8	\$90.00
Subtotal:				\$5,337

Material	Total
allow \$ 10,000 for topsoil, seed, fertilizer, straw bales, etc.	\$10,000
Sales tax @ 7%	\$700
Subtotal:	\$10,700

Total Direct Costs (4) = \$19,150

Summary: Pipe Removal

A. Pipeline contractor costs

1. Excavate trench	\$9,639
2. Remove pipe from trench, cut pipe, load on trucks, and haul to storage yard	\$22,372
3. Backfill trench	\$14,047
4. Restore site	\$19,150
Pipeline contractor direct costs:	\$65,208
5% Mobilization	\$3,260
Subtotal:	\$68,468
15% Contractor overhead:	\$10,270
Subtotal:	\$78,739
10% Contractor profit:	\$7,874
Total pipeline contractor costs:	\$86,612

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I. B. Pipe removal (continued)

B. Environmental contractor costs (5% of pipeline contractor costs)

This section reflects work performed by environmental contractor to monitor work and check for presence of hazardous materials. Work involves inspection, sampling, evaluation, and report writing.

	\$4,331
Total environmental contractor costs:	\$4,331

C. Pipeline company inspection costs

1. Number of days per mile	2
2. Company cost per day	\$500
Total company inspection cost per mile:	\$1,000

D. ROW damages

	\$10,560
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E. Pipeline company management and overhead costs (15% of A + B + C + D)

	\$15,375
Total management and overhead cost:	\$15,375

Total estimated cost to remove 1 mile of 16" dia. pipeline (A + B + C + D):	\$117,878
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Estimated cost per foot to remove 1 mile of 16" dia. pipeline:	\$22
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Total Estimated Cost to Remove Pipe (Option II Only)

Pipeline Diameter (in.)	Pipeline Volume (cu. in.)	Six-Tenths Factor	(See Note 1)	Pipeline Length (mile)	(See Note 2)	Pipeline Removed (ft)	Estimated Removal Cost
			Estimated Removal Cost/ft		Adjusted P/L Length (mile)		
16	201.1	1.0000	\$22	51.15	0.9551	257,946	\$5,674,807
12	113.1	0.7081	\$16	72.96	0.9551	367,932	\$5,886,912
10	78.5	0.5689	\$13	93.26	0.9551	470,303	\$6,113,945
6	28.3	0.3082	\$7	46.36	0.9551	233,790	\$1,636,531
4	12.6	0.1895	\$7	0.50	0.9551	2,521	\$17,650
Total:				264.23		1,332,493	\$19,329,846

Note

1. Estimated removal cost of 4" pipe is estimated to equal removal cost of 6" pipe.
2. Pipeline length reduced to take crossings into consideration (See Workpapers).

MoGas Pipeline LLC Final Abandonment Estimate

I. Pipeline Retirement

C. Pipe handling and storage (Option II Only)

Description of Work:

Detailed cost estimate below reflects work required to unload pipe from pipe trucks, store pipe in temporary storage yards, and load pipe onto contract carriers for transport to scap yard. Estimate is based on handling one mile of pipe per day. Estimate also includes environmental inspection, pipeline company inspection, and pipeline company management and overhead costs.

1. Unload pipe from pipe trucks and stack in storage yard.

Equipment		No.	Hours	Rate	Total
hydrocrane, Grove, 25 ton		1	10	\$56.68	\$567
1/2 ton pickup with 4wd		1	10	\$11.35	\$114
small tools, 2% of labor					\$57
				Subtotal:	\$737
Labor		No.	Hours	Rate	Total
operator (hydrocrane)		1	10	\$66.01	\$660
laborer		2	10	\$52.78	\$1,056
foreman		1	10	\$75.14	\$751
per diem	1 day	crew size:	4	\$90.00	\$360
				Subtotal:	\$2,827
Material					Total
allow 2% of labor					\$57
				Subtotal:	\$57
Total Direct Costs (1) =					\$3,620

2. Load pipe in storage yard onto contract carriers.

Equipment		No.	Hours	Rate	Total
hydrocrane, Grove, 25 ton		1	10	\$56.68	\$567
1/2 ton pickup with 4wd		1	10	\$11.35	\$114
small tools, 2% of labor					\$57
				Subtotal:	\$737
Labor		No.	Hours	Rate	Total
operator (hydrocrane)		1	10	\$66.01	\$660
laborer		2	10	\$52.78	\$1,056
foreman		1	10	\$75.14	\$751
per diem	1 day	crew size:	4	\$90.00	\$360
				Subtotal:	\$2,827

**MoGas Pipeline LLC
Final Abandonment Estimate**

I. C. Pipe handling and storage (continued)

Line Item 2 (continued)

Material	Total
allow 2% of labor	\$57
Subtotal:	\$57
Total Direct Costs (2) =	\$3,620

Summary: Pipe Handling and Storage

A. Pipeline contractor costs		
1. Unload pipe from pipe trucks and stack in storage yard		\$3,620
2. Load pipe in storage yard onto contract carriers		\$3,620
	Pipeline contractor direct costs:	\$7,241
	5% Mobilization	\$362
	Subtotal:	\$7,603
	15% Contractor overhead:	\$1,140
	Subtotal:	\$8,743
	10% Contractor profit:	\$874
	Total pipeline contractor costs:	\$9,618
B. Environmental contractor costs (5% of pipeline contractor costs)		
This section reflects work performed by environmental contractor to monitor work and check for presence of hazardous materials. Work involves inspection, sampling, evaluation, and report writing.		
		\$481
	Total environmental contractor costs:	\$481
C. Pipeline company inspection costs		
1. Number of inspectors		2
2. Company cost per day		\$500
	Total company inspection cost per mile:	\$1,000
D. Pipeline company management and overhead costs (15% of A + B + C)		
		\$1,665
	Total management and overhead cost:	\$1,665
Total estimated cost to handle and store 1 mile of pipeline (A + B + C + D):		\$12,764
Estimated cost per foot to handle and store 1 mile of pipeline:		\$2.42

MoGas Pipeline LLC
Final Abandonment Estimate

I. C. Pipe handling and storage (continued)

Total Estimated Pipe Handling and Storage Cost (Option II Only)

Pipeline Diameter (in.)	Pipeline Length (ft)	Estimated Cost/ft	Total Estimated Cost
16	257,946	\$2.42	\$623,541
12	367,932	\$2.42	\$889,414
10	470,303	\$2.42	\$1,136,880
6	233,790	\$2.42	\$565,148
4	2,521	\$2.42	\$6,095
	1,332,493		\$1,708,123

MoGas Pipeline LLC Final Abandonment Estimate

I. Pipeline Retirement

D. Uncased highway/railroad crossings

Description of Work:

Detailed cost estimate below reflects work required to retire a typical uncased highway/railroad crossing (100 ft). Work includes ROW fence removal, excavation and shoring of trench, capping pipe ends, filling pipe with grout, backfilling, and restoration of area. Estimate also includes environmental inspection, pipeline company inspection, and pipeline company management and overhead.

1. Remove ROW fence and access work sites (1/2 day)

Equipment	No.	Hours	Rate	Total
backhoe, Cat 320C	1	5	\$47.65	\$238
flatbed truck	1	5	\$25.08	\$125
lowboy	1	5	\$56.13	\$281
3/4 ton pick-up with trailer	1	5	\$27.77	\$139
1/2 ton pickup with 4wd	2	5	\$11.35	\$114
small tools, 2% of labor				\$66
Subtotal:				\$963

	Labor	No.	Hours	Rate	Total
operator		1	5	\$57.94	\$290
teamster		2	5	\$53.57	\$536
pipefitter/welder		1	5	\$73.73	\$369
helper		1	5	\$44.24	\$221
laborer		4	5	\$52.78	\$1,056
foreman		1	5	\$75.14	\$376
per diem	1/2 day	crew size:	10	\$90.00	\$450
				Subtotal:	\$3,297

Material	Total
allow 2% of labor	\$66
Subtotal:	\$66

Total Direct Costs (1) = \$4,325

2. Excavate and cap pipe ends (2 days)

Equipment	No.	Hours	Rate	Total
backhoe, Cat 320C	1	20	\$47.65	\$953
flatbed truck	1	20	\$25.08	\$502
3/4 ton pick-up with trailer	1	20	\$27.77	\$555
1/2 ton pickup with 4wd	2	20	\$11.35	\$454
small tools, 2% of labor				\$239
Subtotal:				\$2,703

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I. D. Uncased highway/railroad crossings (continued)

Line Item 2 (continued)

Labor		No.	Hours	Rate	Total
operator		1	20	\$57.94	\$1,159
teamster		1	20	\$53.57	\$1,071
pipefitter/welder		1	20	\$73.73	\$1,475
helper		1	20	\$44.24	\$885
laborer		4	20	\$52.78	\$4,222
foreman		1	20	\$75.14	\$1,503
per diem	2 days	crew size: 9		\$90.00	\$1,620
Subtotal:					\$11,935

Material		Total
allow 2% of labor		\$239
Subtotal:		\$239

Total Direct Costs (2) = \$14,876

3. Fill pipe with grout, backfill trench, grade disturbed areas (1 day)

Equipment		No.	Hours	Rate	Total
backhoe, Cat 320C		1	10	\$47.65	\$477
dump truck 8 cy		1	10	\$24.79	\$248
grout pump, trailer mounted		1	10	\$12.24	\$122
1/2 ton pickup with 4wd		2	10	\$11.35	\$227
small tools, 2% of labor					\$92
Subtotal:					\$1,166

Labor		No.	Hours	Rate	Total
operator		1	10	\$57.94	\$579
teamster		1	10	\$53.57	\$536
laborer		4	10	\$52.78	\$2,111
foreman		1	10	\$75.14	\$751
per diem	1 day	crew size: 7		\$90.00	\$630
Subtotal:					\$4,608

Material		Total
Grout/cy	\$84 6 cy (Note: assumes 16" pipe)	\$504
Sales tax @ 7%		\$35
Miscellaneous (2% of labor)		\$92
Subtotal:		\$631

Total Direct Costs (3) = \$6,405

MoGas Pipeline LLC
Final Abandonment Estimate

I. D. Uncased highway/railroad crossings (continued)

4. Restore sites (1/2 day)

Equipment	No.	Hours	Rate	Total
flatbed truck	1	5	\$25.08	\$125
1/2 ton pickup with 4wd	2	5	\$11.35	\$114
small tools, 2% of labor				\$39
			Subtotal:	\$278

Labor	No.	Hours	Rate	Total
teamster	1	5	\$53.57	\$268
laborer	4	5	\$52.78	\$1,056
foreman	1	5	\$75.14	\$376
per diem 1/2 day crew size:	6		\$90.00	\$270
			Subtotal:	\$1,969

Material	Total
allow \$ 1000 for topsoil, seed, fertilizer, straw bales, etc.	\$1,000
sales tax @ 7%	\$70
	Subtotal: \$1,070

Total Direct Costs (4) = \$3,317

Summary: Uncased Highway/Railroad Crossings

A. Pipeline contractor costs

1. Remove ROW fence and access work sites	\$4,325
2. Excavate and cap pipe ends	\$14,876
3. Fill pipe with grout, backfill trench, grade disturbed areas	\$6,405
4. Restore sites	\$3,317
Pipeline contractor direct costs:	\$28,924
5% Mobilization	\$1,446
Subtotal:	\$30,370
15% Contractor overhead:	\$4,555
Subtotal:	\$34,925
10% Contractor profit:	\$3,493
Total pipeline contractor costs:	\$38,418

B. Environmental contractor costs (5% of pipeline contractor costs)

This section of estimate reflects work performed by environmental contractor to check for the presence of hazardous materials. Work involves inspection, sampling, evaluation, and report writing.

	\$1,921
Total environmental contractor cost:	\$1,921

C. Pipeline company inspection costs

1. Number of days per site	4
2. Company cost per day	\$500
Total company inspection cost per site:	\$2,000

MoGas Pipeline LLC
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I. D. Uncased highway/railroad crossings (continued)

D. Pipeline company management and overhead costs (15% of A + B + C)		
		\$6,351
	Total management and overhead cost:	\$6,351
Total estimated cost to retire an uncased crossing (A + B + C + D):		\$48,690
No. of uncased highway crossings		3
Item D. 1.	Total estimated cost to retire uncased highway crossings:	\$146,070
No. of uncased railroad crossings:		1
Item D. 2.	Total estimated cost to retire uncased railroad crossings:	\$48,690

MoGas Pipeline LLC Final Abandonment Estimate

I. Pipeline Retirement

E. Cased highway/railroad crossings

Description of Work:

Detailed cost estimate below reflects work required to retire a typical cased highway/railroad crossing (100 feet). Work includes ROW fence removal, excavation and shoring of trench, removal of pipe from casing, filling casing with grout, removal of vent pipes, and restoration of area. Estimate also includes environmental inspection, pipeline company inspection, and pipeline company management and overhead.

1. Remove ROW fence and access work sites (1/2 day)

Equipment	No.	Hours	Rate	Total
backhoe, Cat 320C	1	5	\$47.65	\$238
lowboy	1	5	\$56.13	\$281
flatbed truck	1	5	\$25.08	\$125
3/4 ton pick-up with trailer	1	5	\$27.77	\$139
1/2 ton pickup with 4wd	2	5	\$11.35	\$114
small tools, 2% of labor				\$66
Subtotal:				\$963

Labor	No.	Hours	Rate	Total
operator	1	5	\$57.94	\$290
teamster	2	5	\$53.57	\$536
pipefitter/welder	1	5	\$73.73	\$369
helper	1	5	\$44.24	\$221
laborer	4	5	\$52.78	\$1,056
foreman	1	5	\$75.14	\$376
per diem	1/2 day	crew size: 10	\$90.00	\$450
Subtotal:				\$3,297

Material	Total
allow 2% of labor	\$66
Subtotal:	\$66
Total Direct Costs (1) =	\$4,325

2. Excavate and remove pipe from casing (2 days)

Equipment	No.	Hours	Rate	Total
backhoe, Cat 320C	1	20	\$47.65	\$953
dozer, Cat D-6R w winch	1	20	\$93.00	\$1,860
hydrocrane, Grove, 25 ton	1	20	\$56.68	\$1,134
pipe truck	1	20	\$52.31	\$1,046
flatbed truck	1	20	\$25.08	\$502
3/4 ton pick-up with trailer	1	20	\$27.77	\$555
1/2 ton pickup with 4wd	2	20	\$11.35	\$454
small tools, 2% of labor				\$321
Subtotal:				\$6,824

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I. E. Cased highway/railroad crossings (continued)

Line Item 2 (continued)

Labor		No.	Hours	Rate	Total
operator (dozer, backhoe)		2	20	\$57.94	\$2,318
operator (hydrocrane)		1	20	\$66.01	\$1,320
teamster		2	20	\$53.57	\$2,143
pipefitter/welder		1	20	\$73.73	\$1,475
helper		1	20	\$44.24	\$885
laborer		4	20	\$52.78	\$4,222
foreman		1	20	\$75.14	\$1,503
per diem	2 days	crew size:	12	\$90.00	\$2,160
				Subtotal:	\$16,025

Material		Total
allow 2% of labor		\$321
		Subtotal:
		\$321

Total Direct Costs (2) = \$23,170

3. Fill casing with grout, backfill trench, grade disturbed areas (2 days)

Equipment		No.	Hours	Rate	Total
backhoe, Cat 320C		1	20	\$47.65	\$953
dump truck 8 cy		1	20	\$24.79	\$496
grout pump, trailer mounted		1	20	\$12.24	\$245
1/2 ton pickup with 4wd		2	20	\$11.35	\$454
small tools, 2% of labor					\$184
				Subtotal:	\$2,332

Labor		No.	Hours	Rate	Total
operator		1	20	\$57.94	\$1,159
teamster		1	20	\$53.57	\$1,071
laborer		4	20	\$52.78	\$4,222
foreman		1	20	\$75.14	\$1,503
per diem	2 days	crew size:	7	\$90.00	\$1,260
				Subtotal:	\$9,215

Material		Total
Grout/cy	\$84 6 cy (Note: assumes 16" casing)	\$504
Sales tax @ 7%		\$35
Miscellaneous 2% of labor		\$184
		Subtotal:
		\$724

Total Direct Costs (3) = \$12,271

MoGas Pipeline LLC
Final Abandonment Estimate

I. E. Cased highway/railroad crossings (continued)

4. Restore sites (1/2 day)

Equipment	No.	Hours	Rate	Total
flatbed truck	1	5	\$25.08	\$125
1/2 ton pickup with 4wd	2	5	\$11.35	\$114
small tools, 2% of labor				\$39
			Subtotal:	\$278

Labor	No.	Hours	Rate	Total
teamster	1	5	\$53.57	\$268
laborer	4	5	\$52.78	\$1,056
foreman	1	5	\$75.14	\$376
per diem	1/2 day	crew size:	\$90.00	\$270
			Subtotal:	\$1,969

Material	Total
allow \$2000 for topsoil, seed, fertilizer, straw bales, etc.	\$2,000
Sales tax @ 7%	\$140
	Subtotal:
	\$2,140

Total Direct Costs (4) = \$4,387

Summary: Cased Highway/Railroad Crossings

A. Pipeline contractor costs

1. Remove ROW fence and access work sites	\$4,325
2. Excavate and remove pipe from casing	\$23,170
3. Fill casing with grout, backfill trench, grade disturbed areas	\$12,271
4. Restore sites	\$4,387
Pipeline contractor direct costs:	\$44,153
5% Mobilization	\$2,208
Subtotal:	\$46,361
15% Contractor overhead:	\$6,954
Subtotal:	\$53,315
10% Contractor profit:	\$5,332
Total pipeline contractor costs:	\$58,647

B. Environmental contractor costs (5% of pipeline contractor costs)

This section of estimate reflects work performed by environmental contractor to check for the presence of hazardous materials. Work involves inspection, sampling, evaluation, and report writing.

	\$2,932
Total environmental contractor cost:	\$2,932

C. Pipeline company inspection costs

1. Number of days per site	5
2. Company cost per day	\$500
Total company inspection cost per site:	\$2,500

MoGas Pipeline LLC
Final Abandonment Estimate

I. E. Cased highway/railroad crossings (continued)

D. Pipeline company management and overhead costs (15% of A + B + C)

	\$9,612
Total management and overhead cost:	<u>\$9,612</u>

Total estimated cost to retire a cased crossing (A + B + C + D):	\$73,691
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No. of cased highway crossings:	111
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Item E. 1. Total estimated cost to retire cased highway crossings:	\$8,179,701
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No. of cased railroad crossings:	12
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Item E. 2. Total estimated cost to retire cased railroad crossings:	\$884,292
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MoGas Pipeline LLC Final Abandonment Estimate

I. Pipeline Retirement

F. Vent pipes

Description of Work:

Detailed cost estimate below reflects work required to cut and cap vent pipes at cased highway crossings where crossing is retired in-place (i.e., 4" and 6" diameter pipe). Work includes excavation, cutting vent pipes 3-feet below ground surface and capping with steel plates. Estimate also includes environmental inspection, pipeline company inspection, and pipeline company management and overhead.

1. Access work sites, excavate, cut, and cap vent pipes (1/2 day)

Equipment	No.	Hours	Rate	Total
flatbed truck	1	5	\$25.08	\$125
3/4 ton pick-up with trailer	1	5	\$27.77	\$139
1/2 ton pickup with 4wd	1	5	\$11.35	\$57
small tools, 2% of labor				\$41
Subtotal:				\$362

Labor	No.	Hours	Rate	Total
teamster	1	5	\$53.57	\$268
pipefitter/welder	1	5	\$73.73	\$369
helper	1	5	\$44.24	\$221
laborer	2	5	\$52.78	\$528
foreman	1	5	\$75.14	\$376
per diem	1/2 day	crew size:	\$90.00	\$270
Subtotal:				\$2,031

Material	Total
allow 2% of labor	\$41
	<hr/>
	Subtotal: \$41
Total Direct Costs (1) =	\$2,433

2. Restore sites (1/2 day)

Equipment	No.	Hours	Rate	Total
flatbed truck	1	5	\$25.08	\$125
1/2 ton pickup with 4wd	1	5	\$11.35	\$57
small tools, 2% of labor				\$27
Subtotal:				\$209

Labor	No.	Hours	Rate	Total
teamster	1	5	\$53.57	\$268
laborer	2	5	\$52.78	\$528
foreman	1	5	\$75.14	\$376
per diem	1/2 day	crew size:	\$90.00	\$180
Subtotal:				\$1,351

MoGas Pipeline LLC
Final Abandonment Estimate

I. F. Vent pipes (continued)

Line Item 2 (continued)

Material	Total
allow \$200 for topsoil, seed, fertilizer, straw bales, etc.	\$200
Sales tax @ 7%	\$14
Subtotal:	\$214

Total Direct Costs (2) = \$1,775

Summary: Vent Pipes**A. Pipeline contractor costs**

1. Access work sites, excavate, cut, and cap vent pipes	\$2,433
2. Restore sites	\$1,775
Pipeline contractor direct costs:	\$4,208
5% Mobilization	\$210
Subtotal:	\$4,418
15% Contractor overhead:	\$663
Subtotal:	\$5,081
10% Contractor profit:	\$508
Total pipeline contractor costs:	\$5,589

B. Environmental contractor costs (5% of pipeline contractor costs)

This section of estimate reflects work performed by environmental contractor to check for the presence of hazardous materials. Work involves inspection, sampling, evaluation, and report writing.

Total environmental contractor cost:	\$279
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C. Pipeline company inspection costs

1. Number of days per site	1
2. Company cost per day	\$500
Total company inspection cost per site:	\$500

D. Pipeline company management and overhead costs (15% of A + B + C)

Total management and overhead cost:	\$955
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Total est. cost to remove vent pipes per crossing (A + B + C + D): \$7,324

No. of cased highway crossings retired in-place: 24
Total estimated cost to remove vent pipes: \$175,776

MoGas Pipeline LLC Final Abandonment Estimate

I. Pipeline Retirement

G. Large river crossings

1. Mississippi River

Description of Work:

Detailed cost estimate below reflects work required to retire Mississippi River crossing (4000 feet). Work includes ROW fence removal, excavation and shoring of trench, capping pipe ends, filling pipe with grout, and restoration of area. Estimate also includes environmental inspection, pipeline company inspection, and pipeline company management and overhead.

1. Remove ROW fence and access work sites (2 days)

Equipment	No.	Hours	Rate	Total
backhoe, Cat 320C	1	20	\$47.65	\$953
lowboy	1	20	\$56.13	\$1,123
flatbed truck	1	20	\$25.08	\$502
3/4 ton pick-up with trailer	1	20	\$27.77	\$555
1/2 ton pickup with 4wd	2	20	\$11.35	\$454
small tools, 2% of labor				\$264
Subtotal:				\$3,850

Labor	No.	Hours	Rate	Total
operator	1	20	\$57.94	\$1,159
teamster	2	20	\$53.57	\$2,143
pipefitter/welder	1	20	\$73.73	\$1,475
helper	1	20	\$44.24	\$885
laborer	4	20	\$52.78	\$4,222
foreman	1	20	\$75.14	\$1,503
per diem	2 days	crew size:	\$90.00	\$1,800
Subtotal:				\$13,186

Material	Total
allow 2% of labor	\$264
Subtotal:	\$264

Total Direct Costs (1) = \$17,300

2. Excavate and cap pipe ends (2 days)

Equipment	No.	Hours	Rate	Total
backhoe, Cat 320C	1	20	\$47.65	\$953
flatbed truck	1	20	\$25.08	\$502
lowboy	1	20	\$56.13	\$1,123
3/4 ton pick-up with trailer	1	20	\$27.77	\$555
1/2 ton pickup with 4wd	2	20	\$11.35	\$454
small tools, 2% of labor				\$264
Subtotal:				\$3,850

MoGas Pipeline LLC
Final Abandonment Estimate

I. G. 1. Mississippi River (continued)

Line Item 2 (continued)

Labor	No.	Hours	Rate	Total
operator	1	20	\$57.94	\$1,159
teamster	2	20	\$53.57	\$2,143
pipefitter/welder	1	20	\$73.73	\$1,475
helper	1	20	\$44.24	\$885
laborer	4	20	\$52.78	\$4,222
foreman	1	20	\$75.14	\$1,503
per diem	2 days	crew size: 10	\$90.00	\$1,800
Subtotal:				\$13,186

Material	Total
allow 2% of labor	\$264
Subtotal:	\$264

Total Direct Costs (2) = \$17,300

3. Fill pipe with grout (1 day)

Equipment	No.	Hours	Rate	Total
grout pump, trailer mounted	1	10	\$12.24	\$122
lights, trailer mounted	1	10	\$6.44	\$64
1/2 ton pickup with 4wd	2	10	\$11.35	\$227
small tools, 2% of labor				\$79
Subtotal:				\$493

Labor	No. of crews	No.	Hours	Rate	Total
operator (grout pump)		1	10	\$56.46	\$565
laborer		4	10	\$52.78	\$2,111
foreman		1	10	\$75.14	\$751
per diem	1 day	crew size: 6		\$90.00	\$540
Subtotal:					\$3,967

Material	Total
Grout/cy \$84 130 cy (Note: 12" pipe)	\$10,920
Sales tax @ 7%	\$764
Miscellaneous (2% of labor)	\$79
Subtotal:	\$11,764

Total Direct Costs (3) = \$16,224

MoGas Pipeline LLC
Final Abandonment Estimate

I. G. 1. Mississippi River (continued)

4. Backfill trench, grade disturbed areas (2 days)

Equipment	No.	Hours	Rate	Total
backhoe, Cat 320C	1	20	\$47.65	\$953
dump truck 8 cy	1	20	\$24.79	\$496
lowboy	1	20	\$56.13	\$1,123
1/2 ton pickup with 4wd	2	20	\$11.35	\$454
small tools, 2% of labor				\$209
Subtotal:				\$3,235

Labor	No.	Hours	Rate	Total
operator	1	20	\$57.94	\$1,159
teamster	2	20	\$53.57	\$2,143
laborer	4	20	\$52.78	\$4,222
foreman	1	20	\$75.14	\$1,503
per diem	2 days	crew size:	8	\$90.00
Subtotal:				\$10,467

Material	Total
Miscellaneous (2% of labor)	\$209
Subtotal:	\$209

Total Direct Costs (4) = \$13,911

5. Restore sites (2 days)

Equipment	No.	Hours	Rate	Total
flatbed truck	1	20	\$25.08	\$502
1/2 ton pickup with 4wd	2	20	\$11.35	\$454
small tools, 2% of labor				\$158
Subtotal:				\$1,113

Labor	No.	Hours	Rate	Total
teamster	1	20	\$53.57	\$1,071
laborer	4	20	\$52.78	\$4,222
foreman	1	20	\$75.14	\$1,503
per diem	2 days	crew size:	6	\$90.00
Subtotal:				\$7,877

Material	Total
allow \$ 4000 for topsoil, seed, fertilizer, straw bales, etc.	\$4,000
Sales tax @ 7%	\$280
Subtotal:	\$4,280

Total Direct Costs (5) = \$13,270

MoGas Pipeline LLC
Final Abandonment Estimate

I. G. 1. Mississippi River (continued)

Summary: Mississippi River Crossing

A. Pipeline contractor costs		
1. Remove ROW fence and access work sites		\$17,300
2. Excavate and cap pipe ends		\$17,300
3. Fill pipe with grout		\$16,224
4. Backfill trench, grade disturbed areas		\$13,911
5. Restore sites		\$13,270
	Pipeline contractor direct costs:	\$78,005
	5% Mobilization	\$3,900
	Subtotal:	\$81,905
	15% Contractor overhead:	\$12,286
	Subtotal:	\$94,191
	10% Contractor profit:	\$9,419
	Total pipeline contractor costs:	\$103,610
B. Environmental contractor costs (5% of pipeline contractor costs)		
This section of estimate reflects work performed by environmental contractor to check for the presence of hazardous materials. Work involves inspection, sampling, evaluation, and report writing.		
		\$5,181
	Total environmental contractor cost:	\$5,181
C. Pipeline company inspection costs		
1. Number of days per site		9
2. Company cost per day		\$500
	Total company inspection cost per site:	\$4,500
D. Pipeline company management and overhead costs (15% of A + B + C)		
		\$16,994
	Total management and overhead cost:	\$16,994
Total estimated cost to retire Mississippi River crossing (A + B + C + D):		\$130,285

MoGas Pipeline LLC Final Abandonment Estimate

I. Pipeline Retirement

G. Large river crossings

2. Missouri River

Description of Work:

Detailed cost estimate below reflects work required to retire Missouri River crossing (3000 feet). Work includes ROW fence removal, excavation and shoring of trench, capping pipe ends, filling pipe with grout, and restoration of area. Estimate also includes environmental inspection, pipeline company inspection, and pipeline company management and overhead.

1. Remove ROW fence and access work sites (2 days)

Equipment	No.	Hours	Rate	Total
backhoe, Cat 320C	1	20	\$47.65	\$953
lowboy	1	20	\$56.13	\$1,123
flatbed truck	1	20	\$25.08	\$502
3/4 ton pick-up with trailer	1	20	\$27.77	\$555
1/2 ton pickup with 4wd	2	20	\$11.35	\$454
small tools, 2% of labor				\$264
Subtotal:				\$3,850

Labor	No.	Hours	Rate	Total
operator	1	20	\$57.94	\$1,159
teamster	2	20	\$53.57	\$2,143
pipefitter/welder	1	20	\$73.73	\$1,475
helper	1	20	\$44.24	\$885
laborer	4	20	\$52.78	\$4,222
foreman	1	20	\$75.14	\$1,503
per diem	2 days	crew size: 10	\$90.00	\$1,800
Subtotal:				\$13,186

Material	Total
allow 2% of labor	\$264
Subtotal:	\$264

Total Direct Costs (1) = \$17,300

2. Excavate and cap pipe ends (2 days)

Equipment	No.	Hours	Rate	Total
backhoe, Cat 320C	1	20	\$47.65	\$953
flatbed truck	1	20	\$25.08	\$502
lowboy	1	20	\$56.13	\$1,123
3/4 ton pick-up with trailer	1	20	\$27.77	\$555
1/2 ton pickup with 4wd	2	20	\$11.35	\$454
small tools, 2% of labor				\$264
Subtotal:				\$3,850

MoGas Pipeline LLC
Final Abandonment Estimate

I. G. 2. Missouri River (continued)

Line Item 2 (continued)

Labor	No.	Hours	Rate	Total
operator	1	20	\$57.94	\$1,159
teamster	2	20	\$53.57	\$2,143
pipefitter/welder	1	20	\$73.73	\$1,475
helper	1	20	\$44.24	\$885
laborer	4	20	\$52.78	\$4,222
foreman	1	20	\$75.14	\$1,503
per diem	2 days	crew size: 10	\$90.00	\$1,800
Subtotal:				\$13,186

Material	Total
allow 2% of labor	\$264
Subtotal:	\$264

Total Direct Costs (2) = \$17,300

3. Fill pipe with grout (1 day)

Equipment	No.	Hours	Rate	Total
grout pump, trailer mounted	1	10	\$12.24	\$122
lights, trailer mounted	1	10	\$6.44	\$64
1/2 ton pickup with 4wd	2	10	\$11.35	\$227
small tools, 2% of labor				\$79
Subtotal:				\$493

Labor	No.	Hours	Rate	Total
operator (grout pump)	1	10	\$56.46	\$565
laborer	4	10	\$52.78	\$2,111
foreman	1	10	\$75.14	\$751
per diem	1 day	crew size: 6	\$90.00	\$540
Subtotal:				\$3,967

Material	Total
Grout/cy \$84 170 cy (Note: 16" pipe)	\$14,280
Sales tax @ 7%	\$1,000
Miscellaneous (2% of labor)	\$79
Subtotal:	\$15,359

Total Direct Costs (3) = \$19,819

MoGas Pipeline LLC
Final Abandonment Estimate

I. G. 2. Missouri River (continued)

4. Backfill trench, grade disturbed areas (2 days)

Equipment	No.	Hours	Rate	Total
backhoe, Cat 320C	1	20	\$47.65	\$953
dump truck 8 cy	1	20	\$24.79	\$496
lowboy	1	20	\$56.13	\$1,123
1/2 ton pickup with 4wd	2	20	\$11.35	\$454
small tools, 2% of labor				\$209
Subtotal:				\$3,235

Labor	No.	Hours	Rate	Total
operator	1	20	\$57.94	\$1,159
teamster	2	20	\$53.57	\$2,143
laborer	4	20	\$52.78	\$4,222
foreman	1	20	\$75.14	\$1,503
per diem	2 days	crew size:	8	\$90.00
Subtotal:				\$10,467

Material	Total
Miscellaneous (2% of labor)	\$209
Subtotal:	\$209

Total Direct Costs (4) = \$13,911

5. Restore sites (2 days)

Equipment	No.	Hours	Rate	Total
flatbed truck	1	20	\$25.08	\$502
1/2 ton pickup with 4wd	2	20	\$11.35	\$454
small tools, 2% of labor				\$158
Subtotal:				\$1,113

Labor	No.	Hours	Rate	Total
teamster	1	20	\$53.57	\$1,071
laborer	4	20	\$52.78	\$4,222
foreman	1	20	\$75.14	\$1,503
per diem	2 days	crew size:	6	\$90.00
Subtotal:				\$7,877

Material	Total
allow \$ 4000 for topsoil, seed, fertilizer, straw bales, etc.	\$4,000
Sales tax @ 7%	\$280
Subtotal:	\$4,280

Total Direct Costs (5) = \$13,270

MoGas Pipeline LLC
Final Abandonment Estimate

I. G. 2. Missouri River (continued)

Summary: Missouri River Crossing

A. Pipeline contractor costs

1. Remove ROW fence and access work sites	\$17,300
2. Excavate and cap pipe ends	\$17,300
3. Fill pipe with grout	\$19,819
4. Backfill trench, grade disturbed areas	\$13,911
5. Restore sites	\$13,270
	<hr/>
Pipeline contractor direct costs:	\$81,600
5% Mobilization	\$4,080
	<hr/>
Subtotal:	\$85,680
15% Contractor overhead:	\$12,852
	<hr/>
Subtotal:	\$98,532
10% Contractor profit:	\$9,853
	<hr/>
Total pipeline contractor costs:	\$108,386

B. Environmental contractor costs (5% of pipeline contractor costs)

This section of estimate reflects work performed by environmental contractor to check for the presence of hazardous materials. Work involves inspection, sampling, evaluation, and report writing.

	\$5,419
	<hr/>
Total environmental contractor cost:	\$5,419

C. Pipeline company inspection costs

1. Number of days per site	9
2. Company cost per day	\$500
	<hr/>
Total company inspection cost per site:	\$4,500

D. Pipeline company management and overhead costs (15% of A + B + C)

	\$17,746
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Total management and overhead cost:	\$17,746

Total estimated cost to retire Missouri River crossing (A + B + C + D):	\$136,051
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MoGas Pipeline LLC Final Abandonment Estimate

I. Pipeline Retirement

H. Large stream crossings

Description of Work:

Detailed cost estimate below reflects work required to retire a large stream crossing (500 feet). Work includes ROW fence removal, excavation and shoring of trench, capping pipe ends, filling pipe with grout, and restoration of area. Estimate also includes environmental inspection, pipeline company inspection, and pipeline company management and overhead.

1. Remove ROW fence and access work sites (2 days)

Equipment	No.	Hours	Rate	Total
backhoe, Cat 320C	1	20	\$47.65	\$953
lowboy	1	20	\$56.13	\$1,123
flatbed truck	1	20	\$25.08	\$502
3/4 ton pick-up with trailer	1	20	\$27.77	\$555
1/2 ton pickup with 4wd	2	20	\$11.35	\$454
small tools, 2% of labor				\$264
Subtotal:				\$3,850

Labor	No.	Hours	Rate	Total
operator	1	20	\$57.94	\$1,159
teamster	2	20	\$53.57	\$2,143
pipefitter/welder	1	20	\$73.73	\$1,475
helper	1	20	\$44.24	\$885
laborer	4	20	\$52.78	\$4,222
foreman	1	20	\$75.14	\$1,503
per diem	2 days	crew size:	\$90.00	\$1,800
Subtotal:				\$13,186

Material	Total
allow 2% of labor	\$264
Subtotal:	\$264

Total Direct Costs (1) = \$17,300

2. Excavate and cap pipe ends (2 days)

Equipment	No.	Hours	Rate	Total
backhoe, Cat 320C	1	20	\$47.65	\$953
flatbed truck	1	20	\$25.08	\$502
lowboy	1	20	\$56.13	\$1,123
3/4 ton pick-up with trailer	1	20	\$27.77	\$555
1/2 ton pickup with 4wd	2	20	\$11.35	\$454
small tools, 2% of labor				\$264
Subtotal:				\$3,850

MoGas Pipeline LLC
Final Abandonment Estimate

I. H. Large stream crossings (continued)

Line Item 2 (continued)

Labor		No.	Hours	Rate	Total
operator		1	20	\$57.94	\$1,159
teamster		2	20	\$53.57	\$2,143
pipefitter/welder		1	20	\$73.73	\$1,475
helper		1	20	\$44.24	\$885
laborer		4	20	\$52.78	\$4,222
foreman		1	20	\$75.14	\$1,503
per diem	2 days	crew size: 10		\$90.00	\$1,800
				Subtotal:	\$13,186

Material		Total
allow 2% of labor		\$264
		Subtotal: \$264

Total Direct Costs (2) = \$17,300

3. Fill pipe with grout (1/2 day)

Equipment		No.	Hours	Rate	Total
grout pump, trailer mounted		1	5	\$12.24	\$61
lights, trailer mounted		1	5	\$6.44	\$32
1/2 ton pickup with 4wd		2	5	\$11.35	\$114
small tools, 2% of labor					\$40
				Subtotal:	\$247

Labor		No.	Hours	Rate	Total
operator (grout pump)		1	5	\$56.46	\$282
laborer		4	5	\$52.78	\$1,056
foreman		1	5	\$75.14	\$376
per diem	1/2 day	crew size: 6		\$90.00	\$270
				Subtotal:	\$1,984

Material		Total
Grout/cy	\$84 11 cy (Note: assumes 10" pipe)	\$924
Sales tax @ 7%		\$65
Miscellaneous (2% of labor)		\$40
		Subtotal: \$1,028

Total Direct Costs (3) = \$3,259

MoGas Pipeline LLC
Final Abandonment Estimate

I. H. Large stream crossings (continued)

4. Backfill trench, grade disturbed areas (2 days)

Equipment	No.	Hours	Rate	Total
backhoe, Cat 320C	1	20	\$47.65	\$953
dump truck 8 cy	1	20	\$24.79	\$496
lowboy	1	20	\$56.13	\$1,123
1/2 ton pickup with 4wd	2	20	\$11.35	\$454
small tools, 2% of labor				\$209
Subtotal:				\$3,235

Labor	No.	Hours	Rate	Total
operator	1	20	\$57.94	\$1,159
teamster	2	20	\$53.57	\$2,143
laborer	4	20	\$52.78	\$4,222
foreman	1	20	\$75.14	\$1,503
per diem	2 days	crew size:	8	\$90.00
Subtotal:				\$10,467

Material	Total
Miscellaneous (2% of labor)	\$209
Subtotal:	\$209

Total Direct Costs (4) = \$13,911

5. Restore sites (2 days)

Equipment	No.	Hours	Rate	Total
flatbed truck	1	20	\$25.08	\$502
1/2 ton pickup with 4wd	2	20	\$11.35	\$454
small tools, 2% of labor				\$158
Subtotal:				\$1,113

Labor	No.	Hours	Rate	Total
teamster	1	20	\$53.57	\$1,071
laborer	4	20	\$52.78	\$4,222
foreman	1	20	\$75.14	\$1,503
per diem	2 days	crew size:	6	\$90.00
Subtotal:				\$7,877

Material	Total
allow \$ 2000 for topsoil, seed, fertilizer, straw bales, etc.	\$2,000
Sales tax @ 7%	\$140
Subtotal:	\$2,140

Total Direct Costs (5) = \$11,130

MoGas Pipeline LLC
Final Abandonment Estimate

I. H. Large stream crossings (continued)

Summary: Large Stream Crossings

A. Pipeline contractor costs		
1. Remove ROW fence and access work sites		\$17,300
2. Excavate and cap pipe ends		\$17,300
3. Fill pipe with grout		\$3,259
4. Backfill trench, grade disturbed areas		\$13,911
5. Restore sites		\$11,130
	Pipeline contractor direct costs:	\$62,900
	5% Mobilization	\$3,145
	Subtotal:	\$66,045
	15% Contractor overhead:	\$9,907
	Subtotal:	\$75,951
	10% Contractor profit:	\$7,595
	Total pipeline contractor costs:	\$83,546
B. Environmental contractor costs (5% of pipeline contractor costs)		
This section of estimate reflects work performed by environmental contractor to check for the presence of hazardous materials. Work involves inspection, sampling, evaluation, and report writing.		
		\$4,177
	Total environmental contractor cost:	\$4,177
C. Pipeline company inspection costs		
1. Number of days per site		8.5
2. Company cost per day		\$500
	Total company inspection cost per site:	\$4,250
D. Pipeline company management and overhead costs (15% of A + B + C)		
		\$13,796
	Total management and overhead cost:	\$13,796
Total estimated cost to retire a large stream crossing (A + B + C + D):		\$105,770
No. of large stream crossings:		6
Total estimated cost to retire large stream crossings:		\$634,620

MoGas Pipeline LLC Final Abandonment Estimate

I. Pipeline Retirement

I. Small stream crossings

Description of Work:

Detailed cost estimate below reflects work required to retire a small stream crossing (100 feet). Work includes ROW fence removal, excavation and shoring of trench, capping pipe ends, filling pipe with grout, and restoration of area. Estimate also includes environmental inspection, pipeline company inspection, and pipeline company management and overhead.

1. Remove ROW fence and access work sites (1/2 day)

Equipment	No.	Hours	Rate	Total
backhoe, Cat 320C	1	5	\$47.65	\$238
lowboy	1	5	\$56.13	\$281
flatbed truck	1	5	\$25.08	\$125
3/4 ton pick-up with trailer	1	5	\$27.77	\$139
1/2 ton pickup with 4wd	2	5	\$11.35	\$114
small tools, 2% of labor				\$66
Subtotal:				\$963

Labor	No.	Hours	Rate	Total
operator	1	5	\$57.94	\$290
teamster	2	5	\$53.57	\$536
pipefitter/welder	1	5	\$73.73	\$369
helper	1	5	\$44.24	\$221
laborer	4	5	\$52.78	\$1,056
foreman	1	5	\$75.14	\$376
per diem	1/2 day	crew size:	\$90.00	\$450
Subtotal:				\$3,297

Material	Total
allow 2% of labor	\$66
	Subtotal: \$66
Total Direct Costs (1) =	\$4,325

2. Excavate and cap pipe ends (2 days)

Equipment	No.	Hours	Rate	Total
backhoe, Cat 320C	1	20	\$47.65	\$953
flatbed truck	1	20	\$25.08	\$502
3/4 ton pick-up with trailer	1	20	\$27.77	\$555
1/2 ton pickup with 4wd	2	20	\$11.35	\$454
small tools, 2% of labor				\$239
Subtotal:				\$2,703

MoGas Pipeline LLC
Final Abandonment Estimate

I. I. Small stream crossings (continued)

Line Item 2 (continued)

Labor	No.	Hours	Rate	Total
operator	1	20	\$57.94	\$1,159
teamster	1	20	\$53.57	\$1,071
pipefitter/welder	1	20	\$73.73	\$1,475
helper	1	20	\$44.24	\$885
laborer	4	20	\$52.78	\$4,222
foreman	1	20	\$75.14	\$1,503
per diem	2 days	crew size:	9	\$90.00
Subtotal:				\$11,935

Material	Total
allow 2% of labor	\$239
Subtotal:	\$239

Total Direct Costs (2) = \$14,876

3. Fill pipe with grout, backfill trench, grade disturbed areas (1 day)

Equipment	No.	Hours	Rate	Total
backhoe, Cat 320C	1	10	\$47.65	\$477
dump truck 8 cy	1	10	\$24.79	\$248
grout pump, trailer mounted	1	10	\$12.24	\$122
1/2 ton pickup with 4wd	2	10	\$11.35	\$227
small tools, 2% of labor				\$105
Subtotal:				\$1,179

Labor	No.	Hours	Rate	Total
operator (backhoe)	1	10	\$57.94	\$579
operator (grout pump)	1	10	\$56.46	\$565
teamster (dump)	1	10	\$53.57	\$536
laborer	4	10	\$52.78	\$2,111
foreman	1	10	\$75.14	\$751
per diem	1 day	crew size:	8	\$90.00
Subtotal:				\$5,262

Material	Total
Grout/cy \$84 3 cy (Note: assumes 10" pipe)	\$252
Sales tax @ 7%	\$18
Miscellaneous (2% of labor)	\$105
Subtotal:	\$375

Total Direct Costs (3) = \$6,816

MoGas Pipeline LLC
Final Abandonment Estimate

I. I. Small stream crossings (continued)

4. Restore sites (1/2 day)

Equipment	No.	Hours	Rate	Total
flatbed truck	1	5	\$25.08	\$125
1/2 ton pickup with 4wd	2	5	\$11.35	\$114
small tools, 2% of labor				\$39
			Subtotal:	\$278

Labor		No.	Hours	Rate	Total
teamster		1	5	\$53.57	\$268
laborer		4	5	\$52.78	\$1,056
foreman		1	5	\$75.14	\$376
per diem	1/2 day	crew size:	6	\$90.00	\$270
				Subtotal:	\$1,969

Material	Total
allow \$ 1000 for topsoil, seed, fertilizer, straw bales, etc.	\$1,000
Sales tax @ 7%	\$70
Subtotal:	\$1,070

Total Direct Costs (4) = \$3,317

Summary: Small Stream Crossings

A. Pipeline contractor costs

1. Remove ROW fence and access work sites	\$4,325
2. Excavate and cap pipe ends	\$14,876
3. Fill pipe with grout, backfill trench, grade disturbed areas	\$6,816
4. Restore sites	\$3,317
Pipeline contractor direct costs:	\$29,335
5% Mobilization	\$1,467
Subtotal:	\$30,802
15% Contractor overhead:	\$4,620
Subtotal:	\$35,422
10% Contractor profit:	\$3,542
Total pipeline contractor costs:	\$38,964

B. Environmental contractor costs (5% of pipeline contractor costs)

This section of estimate reflects work performed by environmental contractor to check for the presence of hazardous materials. Work involves inspection, sampling, evaluation, and report writing.

	\$1,948
Total environmental contractor cost:	\$1,948

C. Pipeline company inspection costs

1. Number of days per site	4
2. Company cost per day	\$500
Total company inspection cost per site:	\$2,000

MoGas Pipeline LLC
Final Abandonment Estimate

I. I. Small stream crossings (continued)

D. Pipeline company management and overhead costs (15% of A + B + C)

	\$6,437
Total management and overhead cost:	<u>\$6,437</u>

Total estimated cost to retire a small stream crossing (A + B + C + D):	\$49,349
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No. of small stream crossings:	107
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Total estimated cost to retire small stream crossings:	\$5,280,343
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MoGas Pipeline LLC Final Abandonment Estimate

I. Pipeline Retirement

J. Mainline valve sites

Description of Work:

Detailed cost estimate below reflects work required to retire a typical isolated mainline valve site. Work includes ROW fence removal, excavation, removal of valves and blowdowns, capping pipelines, excavation of gravel, and restoration of area. Estimate also includes environmental inspection, pipeline company inspection, and pipeline company management and overhead.

1. Remove ROW fence and access work site (1/2 day)

Equipment	No.	Hours	Rate	Total
backhoe, Cat 320C	1	5	\$47.65	\$238
flatbed truck	1	5	\$25.08	\$125
lowboy	1	5	\$56.13	\$281
3/4 ton pick-up with trailer	1	5	\$27.77	\$139
1/2 ton pickup with 4wd	1	5	\$11.35	\$57
small tools, 2% of labor				\$54
Subtotal:				\$893

Labor	No.	Hours	Rate	Total
operator	1	5	\$57.94	\$290
teamster	2	5	\$53.57	\$536
pipefitter/welder	1	5	\$73.73	\$369
helper	1	5	\$44.24	\$221
laborer	2	5	\$52.78	\$528
foreman	1	5	\$75.14	\$376
per diem	1/2 day	crew size:	\$90.00	\$360
Subtotal:				\$2,679

Material	Total
allow 2% of labor	\$54
Subtotal:	\$54

Total Direct Costs (1) = \$3,626

2. Excavate, remove valves and blowdowns, cap pipe ends (1 day)

Equipment	No.	Hours	Rate	Total
backhoe, Cat 320C	1	10	\$47.65	\$477
crane, Grove 25 ton	1	10	\$56.68	\$567
flatbed truck	1	10	\$25.08	\$251
3/4 ton pick-up with trailer	1	10	\$27.77	\$278
1/2 ton pickup with 4wd	1	10	\$11.35	\$114
small tools, 2% of labor				\$110
Subtotal:				\$1,795

MoGas Pipeline LLC
Final Abandonment Estimate

I. J. Mainline valve sites (continued)

Line Item 2 (continued)

Labor	No.	Hours	Rate	Total
operator	1	10	\$57.94	\$579
operator (crane)	1	10	\$66.01	\$660
teamster	1	10	\$53.57	\$536
pipefitter/welder	1	10	\$73.73	\$737
helper	1	10	\$44.24	\$442
laborer	2	10	\$52.78	\$1,056
foreman	1	10	\$75.14	\$751
per diem	1 day	crew size:	8	\$90.00
Subtotal:				\$5,482

Material	Total
allow 2% of labor	\$110
Subtotal:	\$110

Total Direct Costs (2) = \$7,386

3. Remove gravel and miscellaneous debris, grade disturbed area (1/2 day)

Equipment	No.	Hours	Rate	Total
backhoe, Cat 320C	1	5	\$47.65	\$238
dump truck, 8 cy	1	5	\$24.79	\$124
1/2 ton pickup with 4wd	1	5	\$11.35	\$57
small tools, 2% of labor				\$34
Subtotal:				\$453

Labor	No.	Hours	Rate	Total
operator	1	5	\$57.94	\$290
teamster	1	5	\$53.57	\$268
laborer	2	5	\$52.78	\$528
foreman	1	5	\$75.14	\$376
per diem	1/2 day	crew size:	5	\$90.00
Subtotal:				\$1,686

Material	Total
Miscellaneous (2% of labor)	\$34
Subtotal:	\$34

Total Direct Costs (3) = \$2,172

MoGas Pipeline LLC
Final Abandonment Estimate

I. J. Mainline valve sites (continued)

4. Restore site (1/2 day)

Equipment	No.	Hours	Rate	Total
flatbed truck	1	5	\$25.08	\$125
1/2 ton pickup with 4wd	1	5	\$11.35	\$57
small tools, 2% of labor				\$27
			Subtotal:	\$209

Labor	No.	Hours	Rate	Total
teamster	1	5	\$53.57	\$268
laborer	2	5	\$52.78	\$528
foreman	1	5	\$75.14	\$376
per diem	1/2 day	crew size:	4	\$90.00
			Subtotal:	\$1,351

Material	Total
allow \$ 500 for backfill, topsoil, seed, fertilizer, straw bales, etc.	\$500
Sales tax @ 7%	\$35
	Subtotal:
	\$535

Total Direct Costs (4) = \$2,096

Summary: Mainline Valve Sites

A. Pipeline contractor costs

1. Remove ROW fence and access work site	\$3,626
2. Excavate and remove valves and blowdowns	\$7,386
3. Remove gravel and miscellaneous debris	\$2,172
4. Restore site	\$2,096
Pipeline contractor direct costs:	\$15,280
5% Mobilization	\$764
Subtotal:	\$16,044
15% Contractor overhead:	\$2,407
Subtotal:	\$18,451
10% Contractor profit:	\$1,845
Total pipeline contractor costs:	\$20,296

B. Environmental contractor costs (5% of pipeline contractor costs)

This section of estimate reflects work performed by environmental contractor to check for the presence of hazardous materials. Work involves inspection, sampling, evaluation, and report writing.

	\$1,015
Total environmental contractor cost:	\$1,015

MoGas Pipeline LLC
Final Abandonment Estimate

I. J. Mainline valve sites (continued)

C. Pipeline company inspection costs

1. Number of days per site	2.5
2. Company cost per day	\$500

Total company inspection cost per site:	\$1,250
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D. Pipeline company management and overhead costs (15% of A + B + C)

Total management and overhead cost:	\$3,384
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Total estimated cost to retire a mainline valve site (A + B + C + D):	\$25,945
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No. of mainline valve sites:	26
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Total estimated cost to retire mainline valve sites:	\$674,570
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MoGas Pipeline LLC Final Abandonment Estimate

I. Pipeline Retirement

K. Cathodic protection facilities

Description of Work:

Detailed cost estimate below reflects work required to remove cathodic protection test sites and rectifiers.

Work includes removal of test sites and rectifiers and associated electrical equipment. Estimate also includes environmental inspection, pipeline company inspection, and pipeline company management and overhead.

1. Remove test sites

Equipment	No.	Hours	Rate	Total
1/2 ton pickup with 4wd	1	1	\$11.35	\$11
small tools, 2% of labor				\$4
			Subtotal:	\$16
Labor	No.	Hours	Rate	Total
laborer	2	1	\$52.78	\$106
foreman	1	1	\$75.14	\$75
per diem	1/10 day	crew size: 3	\$90.00	\$27
			Subtotal:	\$208
Material				Total
allow 2% of labor				\$4
			Subtotal:	\$4
Total Direct Costs (1) =				\$227

Summary: Remove Test Sites

A. Pipeline contractor costs

Pipeline contractor direct costs:	\$227
5% Mobilization	\$11
Subtotal:	\$239
15% Contractor overhead:	\$36
Subtotal:	\$275
10% Contractor profit:	\$27
Total pipeline contractor costs:	\$302

B. Environmental contractor costs (5% of pipeline contractor costs)

This section of estimate reflects work performed by environmental contractor to check for the presence of hazardous materials. Work involves inspection, sampling, evaluation, and report writing.

	\$15
Total environmental contractor cost:	\$15

MoGas Pipeline LLC
Final Abandonment Estimate

I. K. Cathodic protection facilities (continued)

1. Remove test sites (continued)

C. Pipeline company inspection costs

1. Number of days per site	1/10
2. Company cost per day	<u>\$500</u>
Total company inspection cost per site:	\$50

D. Pipeline company management and overhead costs (15% of A + B + C)

	<u>\$55</u>
Total management and overhead cost:	\$55

Total estimated cost to remove a test site (A + B + C + D): \$422

No. of test sites: 1,200
Total estimated cost to remove test sites: \$506,581

2. Remove rectifiers

Equipment	No.	Hours	Rate	Total
3/4 ton pick-up	1	5	\$14.11	\$71
1/2 ton pickup with 4wd	1	5	\$11.35	\$57
small tools, 2% of labor				<u>\$21</u>
			Subtotal:	\$148

Labor	No.	Hours	Rate	Total
electrician	1	5	\$67.96	\$340
helper	1	5	\$40.78	\$204
foreman	1	5	\$75.14	\$376
per diem	1/2 day	crew size: 3	\$90.00	<u>\$135</u>
			Subtotal:	\$1,054

Material	Total
allow 2% of labor	<u>\$21</u>
	Subtotal: <u>\$21</u>

Total Direct Costs (1) = \$1,224

MoGas Pipeline LLC
Final Abandonment Estimate

I. K. Cathodic protection facilities (continued)

2. Remove rectifiers (continued)

Summary: Remove Rectifiers

A. Pipeline contractor costs

Pipeline contractor direct costs:	\$1,224
5% Mobilization	\$61
	Subtotal: <u>\$1,285</u>
15% Contractor overhead:	\$193
	Subtotal: <u>\$1,478</u>
10% Contractor profit:	\$148
Total pipeline contractor costs:	<u>\$1,626</u>

B. Environmental contractor costs (5% of pipeline contractor costs)

This section of estimate reflects work performed by environmental contractor to check for the presence of hazardous materials. Work involves inspection, sampling, evaluation, and report writing.

	<u>\$81</u>
Total environmental contractor cost:	\$81

C. Pipeline company inspection costs

1. Number of days per site	0.5
2. Company cost per day	<u>\$500</u>
Total company inspection cost per site:	\$250

D. Pipeline company management and overhead costs (15% of A + B + C)

	<u>\$294</u>
Total management and overhead cost:	\$294

Total estimated cost to remove a rectifier (A + B + C + D): \$2,250

No. of wholly-owned rectifiers: 8

No. of partially-owned rectifiers (50%): 13

Estimated cost to remove wholly-owned rectifiers: \$18,000

Estimated cost to remove partially-owned rectifiers: \$14,625

Total estimated cost to remove rectifiers: \$32,625

MoGas Pipeline LLC Final Abandonment Estimate

I. Pipeline Retirement

L. Pipeline markers (Option I Only)

Description of Work:

Detailed cost estimate below reflects work required to remove a pipeline marker.

1. Remove pipeline marker

Equipment	No.	Hours	Rate	Total
1/2 ton pickup with 4wd	1	0.25	\$11.35	\$3
small tools, 2% of labor				\$1
			Subtotal:	\$4
Labor	No.	Hours	Rate	Total
laborer	2	0.25	\$52.78	\$26
foreman	1	0.25	\$75.14	\$19
			Subtotal:	\$45
Material				Total
allow 2% of labor				\$1
			Subtotal:	\$1
Total Direct Costs (1) =				\$50

Summary: Pipeline Markers (Option I Only)

A. Pipeline contractor costs

Pipeline contractor direct costs:	\$50
Subtotal:	\$50
5% Mobilization	\$2
Subtotal:	\$52
15% Contractor overhead:	\$8
Subtotal:	\$60
10% Contractor profit:	\$6
Total pipeline contractor costs:	\$66

B. Pipeline company management and overhead costs (15% of A)	\$10
Total management and overhead cost:	\$10

Total estimated cost to remove a pipeline marker (A + B): \$76

No. of pipeline markers: 4,800
Total estimated cost to remove pipeline markers (Option I Only): \$364,800

MoGas Pipeline LLC Final Abandonment Estimate

I. Pipeline Retirement

M. M&R stations

1. Medium M&R stations

Description of Work:

Detailed cost estimate below reflects work required to retire a typical medium M&R station. Work includes ROW fence removal, excavation, removal of valves, blowdowns, meter runs and regulators, removal of meter and control building(s), capping pipelines, excavation of gravel, and restoration of area. Estimate also includes environmental inspection, pipeline company inspection, and pipeline company management and overhead.

1. Remove ROW fence and access work site (1 day)

Equipment	No.	Hours	Rate	Total
backhoe, Cat 320C	1	10	\$47.65	\$477
flatbed truck	1	10	\$25.08	\$251
lowboy	1	10	\$56.13	\$561
3/4 ton pick-up with trailer	1	10	\$27.77	\$278
1/2 ton pickup with 4wd	2	10	\$11.35	\$227
small tools, 2% of labor				\$132
Subtotal:				\$1,925

Labor	No.	Hours	Rate	Total
operator	1	10	\$57.94	\$579
teamster	2	10	\$53.57	\$1,071
pipefitter/welder	1	10	\$73.73	\$737
helper	1	10	\$44.24	\$442
laborer	4	10	\$52.78	\$2,111
foreman	1	10	\$75.14	\$751
per diem	1 day	crew size:	\$90.00	\$900
Subtotal:				\$6,593

Material	Total
allow 2% of labor	\$132
Subtotal:	\$132

Total Direct Costs (1) = \$8,650

2. Remove skids, valves, and blowdowns; excavate, cap pipe ends, demolish control bldg(s) (5 days)

Equipment	No.	Hours	Rate	Total
backhoe, Cat 320C w hammer	1	50	\$70.64	\$3,532
hydrocrane, Grove 25 ton	1	50	\$56.68	\$2,834
flatbed truck	1	50	\$25.08	\$1,254
3/4 ton pick-up with trailer	2	50	\$27.77	\$2,777
1/2 ton pickup with 4wd	2	50	\$11.35	\$1,135
small tools, 2% of labor				\$808
Subtotal:				\$12,340

MoGas Pipeline LLC
Final Abandonment Estimate

I. M. 1. Medium M&R stations (continued)

Line Item 2 (continued)

Labor	No.	Hours	Rate	Total
operator	1	50	\$57.94	\$2,897
operator (hydrocrane)	1	50	\$66.01	\$3,301
teamster	1	50	\$53.57	\$2,679
pipefitter/welder	2	50	\$73.73	\$7,373
helper	2	50	\$44.24	\$4,424
laborer	4	50	\$52.78	\$10,556
foreman	1	50	\$75.14	\$3,757
per diem	5 days	crew size:	12	\$90.00
Subtotal:				\$5,400
				\$40,386

Material	Total
allow 2% of labor	\$808
Subtotal:	\$808

Total Direct Costs (2) = \$53,533

3. Remove gravel and miscellaneous debris (2 days)

Equipment	No.	Hours	Rate	Total
track loader, Cat 953C	1	20	\$54.56	\$1,091
dump truck 14 cy	2	20	\$39.38	\$1,575
1/2 ton pickup with 4wd	2	20	\$11.35	\$454
small tools, 2% of labor				\$209
Subtotal:				\$3,330

Labor	No.	Hours	Rate	Total
operator	1	20	\$57.94	\$1,159
teamster	2	20	\$53.57	\$2,143
laborer	4	20	\$52.78	\$4,222
foreman	1	20	\$75.14	\$1,503
per diem	2 days	crew size:	8	\$90.00
Subtotal:				\$1,440
				\$10,467

Material	Total
Miscellaneous (2% of labor)	\$209
Subtotal:	\$209

Total Direct Costs (3) = \$14,006

MoGas Pipeline LLC
Final Abandonment Estimate

I. M. 1. Medium M&R stations (continued)

4. Restore site (2 days)

Equipment	No.	Hours	Rate	Total
track loader, Cat 953C	1	20	\$54.56	\$1,091
flatbed truck	1	20	\$25.08	\$502
1/2 ton pickup with 4wd	2	20	\$11.35	\$454
small tools, 2% of labor				\$184
Subtotal:				\$2,231

Labor	No.	Hours	Rate	Total
operator	1	20	\$57.94	\$1,159
teamster	1	20	\$53.57	\$1,071
laborer	4	20	\$52.78	\$4,222
foreman	1	20	\$75.14	\$1,503
per diem 2 days crew size:	7		\$90.00	\$1,260
Subtotal:				\$9,215

Material	Total
allow \$ 5,000 for topsoil, seed, fertilizer, straw bales, etc.	\$5,000
Sales tax @ 7%	\$350
Subtotal:	\$5,350

Total Direct Costs (4) = \$16,797

Summary: Medium M&R Stations

A. Pipeline contractor costs

1. Remove ROW fence and access work site	\$8,650
2. Remove skids, valves, and blowdowns; excavate, cap pipe ends	\$53,533
3. Remove gravel and miscellaneous debris	\$14,006
4. Restore site	\$16,797
Pipeline contractor direct costs:	\$92,986
5% Mobilization	\$4,649
Subtotal:	\$97,635
15% Contractor overhead:	\$14,645
Subtotal:	\$112,281
10% Contractor profit:	\$11,228
Total pipeline contractor costs:	\$123,509

B. Environmental contractor costs (5% of pipeline contractor costs)

This section of estimate reflects work performed by environmental contractor to check for the presence of hazardous materials. Work involves inspection, sampling, evaluation, and report writing.

	\$6,175
Total environmental contractor cost:	\$6,175

MoGas Pipeline LLC Final Abandonment Estimate

I. M. 1. Medium M&R stations (continued)

C. Pipeline company inspection costs	
1. Number of days per site	10
2. Company cost per day	\$500
	<hr/>
Total company inspection cost per site:	\$5,000
D. Pipeline company management and overhead costs (15% of A + B + C)	
	\$20,203
	<hr/>
Total management and overhead cost:	\$20,203
Total estimated cost to retire a medium M&R station (A + B + C + D):	\$154,887
No. of medium M&R stations:	9
Total estimated cost to retire medium M&R stations:	\$1,393,983

Total estimated cost to retire a medium M&R station (A + B + C + D): \$154,887

No. of medium M&R stations: 9

Total estimated cost to retire medium M&R stations:	\$1,393,983
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MoGas Pipeline LLC Final Abandonment Estimate

I. Pipeline Retirement

M. M&R stations

2. Small M&R stations

Description of Work:

Detailed cost estimate below reflects work required to retire a typical small M&R station. Work includes ROW fence removal, excavation, removal of valves, blowdowns, meter runs and regulators, removal of meter and control building(s), capping pipelines, excavation of gravel, and restoration of area. Estimate also includes environmental inspection, pipeline company inspection, and pipeline company management and overhead.

1. Remove ROW fence and access work site (1/2 day)

Equipment	No.	Hours	Rate	Total
backhoe, Cat 312C	1	5	\$38.09	\$190
flatbed truck	1	5	\$25.08	\$125
lowboy	1	5	\$56.13	\$281
3/4 ton pick-up with trailer	1	5	\$27.77	\$139
1/2 ton pickup with 4wd	2	5	\$11.35	\$114
small tools, 2% of labor				\$66
Subtotal:				\$915

Labor	No.	Hours	Rate	Total
operator	1	5	\$57.94	\$290
teamster	2	5	\$53.57	\$536
pipefitter/welder	1	5	\$73.73	\$369
helper	1	5	\$44.24	\$221
laborer	4	5	\$52.78	\$1,056
foreman	1	5	\$75.14	\$376
per diem	1/2 day	crew size:	\$90.00	\$450
Subtotal:				\$3,297

Material	Total
allow 2% of labor	\$66
Subtotal:	\$66
Total Direct Costs (1) =	\$4,277

2. Remove skids, valves, and blowdowns; excavate, cap pipe ends, demolish control bldg(s) (2 days)

Equipment	No.	Hours	Rate	Total
backhoe, Cat 312C w hammer	1	20	\$45.99	\$920
hydrocrane, Grove 25 ton	1	20	\$56.68	\$1,134
flatbed truck	1	20	\$25.08	\$502
3/4 ton pick-up with trailer	2	20	\$27.77	\$1,111
1/2 ton pickup with 4wd	2	20	\$11.35	\$454
small tools, 2% of labor				\$323
Subtotal:				\$4,443

MoGas Pipeline LLC
Final Abandonment Estimate

I. M. 2. Small M&R stations (continued)

Line Item 2 (continued)

Labor	No.	Hours	Rate	Total
operator	1	20	\$57.94	\$1,159
operator (hydrocrane)	1	20	\$66.01	\$1,320
teamster	1	20	\$53.57	\$1,071
pipefitter/welder	2	20	\$73.73	\$2,949
helper	2	20	\$44.24	\$1,770
laborer	4	20	\$52.78	\$4,222
foreman	1	20	\$75.14	\$1,503
per diem	2 days	crew size:	12	\$90.00
Subtotal:				\$16,154

Material	Total
allow 2% of labor	\$323
Subtotal:	\$323

Total Direct Costs (2) = \$20,920

3. Remove gravel and miscellaneous debris (1 day)

Equipment	No.	Hours	Rate	Total
track loader, Cat 953C	1	10	\$54.56	\$546
dump truck 14 cy	2	10	\$39.38	\$788
1/2 ton pickup with 4wd	2	10	\$11.35	\$227
small tools, 2% of labor				\$105
Subtotal:				\$1,665

Labor	No.	Hours	Rate	Total
operator	1	10	\$57.94	\$579
teamster	2	10	\$53.57	\$1,071
laborer	4	10	\$52.78	\$2,111
foreman	1	10	\$75.14	\$751
per diem	1 day	crew size:	8	\$90.00
Subtotal:				\$5,233

Material	Total
Miscellaneous (2% of labor)	\$105
Subtotal:	\$105

Total Direct Costs (3) = \$7,003

MoGas Pipeline LLC Final Abandonment Estimate

I. M. 2. Small M&R stations (continued)

4. Restore site (1 day)

Equipment	No.	Hours	Rate	Total
track loader, Cat 953C	1	10	\$54.56	\$546
flatbed truck	1	10	\$25.08	\$251
1/2 ton pickup with 4wd	2	10	\$11.35	\$227
small tools, 2% of labor				\$92
Subtotal:				\$1,116

Labor	No.	Hours	Rate	Total
operator	1	10	\$57.94	\$579
teamster	1	10	\$53.57	\$536
laborer	4	10	\$52.78	\$2,111
foreman	1	10	\$75.14	\$751
per diem	1 day	crew size:	\$90.00	\$630
Subtotal:				\$4,608

Material	Total
allow \$ 2500 for topsoil, seed, fertilizer, straw bales, etc.	\$2,500
Sales tax @ 7%	\$175
Subtotal:	\$2,675

Total Direct Costs (4) = \$8,398

Summary: Small M&R Stations

A. Pipeline contractor costs

1. Remove ROW fence and access work site	\$4,277
2. Remove skids, valves, and blowdowns	\$20,920
3. Remove gravel and miscellaneous debris	\$7,003
4. Restore site	\$8,398
Pipeline contractor direct costs:	\$40,599
5% Mobilization	\$2,030
Subtotal:	\$42,629
15% Contractor overhead:	\$6,394
Subtotal:	\$49,023
10% Contractor profit:	\$4,902
Total pipeline contractor costs:	\$53,925

B. Environmental contractor costs (5% of pipeline contractor costs)

This section of estimate reflects work performed by environmental contractor to check for the presence of hazardous materials. Work involves inspection, sampling, evaluation, and report writing.

	\$2,696
Total environmental contractor cost:	\$2,696

MoGas Pipeline LLC
Final Abandonment Estimate

I. M. 2. Small M&R stations (continued)

C. Pipeline company inspection costs

1. Number of days per site	4.5
2. Company cost per day	\$500
Total company inspection cost per site:	<u>\$2,250</u>

D. Pipeline company management and overhead costs (15% of A + B + C)

	\$8,831
Total management and overhead cost:	<u>\$8,831</u>

Total estimated cost to retire a small M&R station (A + B + C + D): \$67,702

No. of small M&R stations: 13
Total estimated cost to retire small M&R stations: \$880,126

MoGas Pipeline LLC Final Abandonment Estimate

I. Pipeline Retirement

M. M&R stations

3. Very small M&R stations

Description of Work:

Detailed cost estimate below reflects work required to retire a typical very small M&R station. Work includes ROW fence removal, excavation, removal of valves, blowdowns, meter runs and regulators, removal of meter and control building(s), capping pipelines, excavation of gravel, and restoration of area. Estimate also includes environmental inspection, pipeline company inspection, and pipeline company management and overhead.

1. Remove ROW fence and access work site (1/2 day)

Equipment	No.	Hours	Rate	Total
Bobcat	1	5	\$17.53	\$88
flatbed truck	1	5	\$25.08	\$125
lowboy	1	5	\$56.13	\$281
3/4 ton pick-up with trailer	1	5	\$27.77	\$139
1/2 ton pickup with 4wd	1	5	\$11.35	\$57
small tools, 2% of labor				\$54
Subtotal:				\$743

Labor	No.	Hours	Rate	Total
operator	1	5	\$57.94	\$290
teamster	2	5	\$53.57	\$536
pipefitter/welder	1	5	\$73.73	\$369
helper	1	5	\$44.24	\$221
laborer	2	5	\$52.78	\$528
foreman	1	5	\$75.14	\$376
per diem	1/2 day	crew size:	\$90.00	\$360
Subtotal:				\$2,679

Material	Total
allow 2% of labor	\$54
Subtotal:	\$54

Total Direct Costs (1) = \$3,475

2. Remove skids, valves, and blowdowns; cap pipe ends, demolish control bldg (1/2 day)

Equipment	No.	Hours	Rate	Total
Bobcat w hammer	1	5	\$22.33	\$112
flatbed truck	1	5	\$25.08	\$125
3/4 ton pick-up with trailer	1	5	\$27.77	\$139
1/2 ton pickup with 4wd	1	5	\$11.35	\$57
small tools, 2% of labor				\$47
Subtotal:				\$480

MoGas Pipeline LLC
Final Abandonment Estimate

I. M. 3. Very small M&R stations (continued)

Line Item 2 (continued)

Labor	No.	Hours	Rate	Total
operator	1	5	\$57.94	\$290
teamster	1	5	\$53.57	\$268
pipefitter/welder	1	5	\$73.73	\$369
helper	1	5	\$44.24	\$221
laborer	2	5	\$52.78	\$528
foreman	1	5	\$75.14	\$376
per diem	1/2 day	crew size:	7	\$90.00
Subtotal:				\$2,366

Material	Total
allow 2% of labor	\$47
Subtotal:	\$47

Total Direct Costs (2) = \$2,893

3. Remove gravel and miscellaneous debris (1/2 day)

Equipment	No.	Hours	Rate	Total
Bobcat	1	5	\$17.53	\$88
dump truck 8 cy	1	5	\$24.79	\$124
1/2 ton pickup with 4wd	1	5	\$11.35	\$57
small tools, 2% of labor				\$34
Subtotal:				\$302

Labor	No.	Hours	Rate	Total
operator	1	5	\$57.94	\$290
teamster	1	5	\$53.57	\$268
laborer	2	5	\$52.78	\$528
foreman	1	5	\$75.14	\$376
per diem	1/2 day	crew size:	5	\$90.00
Subtotal:				\$1,686

Material	Total
Miscellaneous (2% of labor)	\$34
Subtotal:	\$34

Total Direct Costs (3) = \$2,022

MoGas Pipeline LLC
Final Abandonment Estimate

I. M. 3. Very small M&R stations (continued)

4. Restore site (1/2 day)

Equipment	No.	Hours	Rate	Total
Bobcat	1	5	\$17.53	\$88
flatbed truck	1	5	\$25.08	\$125
1/2 ton pickup with 4wd	1	5	\$11.35	\$57
small tools, 2% of labor				\$34
			Subtotal:	\$304

Labor	No.	Hours	Rate	Total
operator	1	5	\$57.94	\$290
teamster	1	5	\$53.57	\$268
laborer	2	5	\$52.78	\$528
foreman	1	5	\$75.14	\$376
per diem	1/2 day	crew size:	5	\$90.00
			Subtotal:	\$1,686

Material	Total
allow \$ 500 for topsoil, seed, fertilizer, straw bales, etc.	\$500
Sales tax @ 7%	\$35
	Subtotal:
	\$535

Total Direct Costs (4) = \$2,525

Summary: Very Small M&R Stations

A. Pipeline contractor costs

1. Remove ROW fence and access work site	\$3,475
2. Remove skids, valves, and blowdowns; cap pipe ends	\$2,893
3. Remove gravel and miscellaneous debris	\$2,022
4. Restore site	\$2,525
Pipeline contractor direct costs:	\$10,915
5% Mobilization	\$546
Subtotal:	\$11,461
15% Contractor overhead:	\$1,719
Subtotal:	\$13,180
10% Contractor profit:	\$1,318
Total pipeline contractor costs:	\$14,498

B. Environmental contractor costs (5% of pipeline contractor costs)

This section of estimate reflects work performed by environmental contractor to check for the presence of hazardous materials. Work involves inspection, sampling, evaluation, and report writing.

	\$725
Total environmental contractor cost:	\$725

MoGas Pipeline LLC
Final Abandonment Estimate

I. M. 3. Very small M&R stations (continued)

C. Pipeline company inspection costs	
1. Number of days per site	2.0
2. Company cost per day	\$500
Total company inspection cost per site:	<hr/> \$1,000
D. Pipeline company management and overhead costs (15% of A + B + C)	
	\$2,433
Total management and overhead cost:	<hr/> \$2,433
 Total est. cost to retire a very small M&R station (A + B + C + D):	 \$18,656
 No. of very small M&R stations:	 3
Total estimated cost to retire very small M&R stations:	\$55,968

MoGas Pipeline LLC Final Abandonment Estimate

I. Pipeline Retirement

N. Curryville compressor station

Description of Work:

Detailed cost estimate below reflects work required to retire the Curryville compressor station. Work includes removal of fence and miscellaneous material, valves, blowdowns, piping, equipment, and compressor station buildings; excavation of concrete foundations and gravel; and site restoration. Estimate also includes environmental inspection, pipeline company inspection, and pipeline company management and overhead.

1. Remove fence and miscellaneous material and access work site (2 days)

Equipment	No.	Hours	Rate	Total
backhoe, Cat 320C	1	20	\$47.65	\$953
flatbed truck	1	20	\$25.08	\$502
lowboy	1	20	\$56.13	\$1,123
3/4 ton pick-up with trailer	1	20	\$27.77	\$555
1/2 ton pickup with 4wd	2	20	\$11.35	\$454
small tools, 2% of labor				\$264
Subtotal:				\$3,850

Labor	No.	Hours	Rate	Total
operator	1	20	\$57.94	\$1,159
teamster	2	20	\$53.57	\$2,143
pipefitter/welder	1	20	\$73.73	\$1,475
helper	1	20	\$44.24	\$885
laborer	4	20	\$52.78	\$4,222
foreman	1	20	\$75.14	\$1,503
per diem	2 day	crew size:	\$90.00	\$1,800
Subtotal:				\$13,186

Material	Total
allow 2% of labor	\$264
Subtotal:	\$264

Total Direct Costs (1) = \$17,300

2. Excavate, remove, valves, blowdowns, and yard piping (5 days)

Equipment	No.	Hours	Rate	Total
backhoe, Cat 320C	2	50	\$47.65	\$4,765
hydrocrane, Grove 30 ton	2	50	\$64.44	\$6,444
flatbed truck	2	50	\$25.08	\$2,508
3/4 ton pick-up with trailer	2	50	\$27.77	\$2,777
1/2 ton pickup with 4wd	2	50	\$11.35	\$1,135
small tools, 2% of labor				\$1,012
Subtotal:				\$18,641

MoGas Pipeline LLC
Final Abandonment Estimate

I. N. Curryville compressor station (continued)

Line Item 2 (continued)

Labor		No.	Hours	Rate	Total
operator (backhoe)		2	50	\$57.94	\$5,794
operator (hydrocrane)		2	50	\$66.01	\$6,601
teamster		2	50	\$53.57	\$5,357
pipefitter/welder		2	50	\$73.73	\$7,373
helper		2	50	\$44.24	\$4,424
laborer		4	50	\$52.78	\$10,556
foreman		1	50	\$75.14	\$3,757
per diem	5 days	crew size:	15	\$90.00	\$6,750
				Subtotal:	\$50,612
Material					Total
allow 2% of labor					\$1,012
				Subtotal:	\$1,012
Total Direct Costs (2) =					\$70,265

3. Remove station equipment (5 days)

Equipment		No.	Hours	Rate	Total
hydrocrane, Grove 30 ton		2	50	\$64.44	\$6,444
hydrocrane, Grove 50 ton		1	50	\$116.75	\$5,838
flatbed truck		2	50	\$25.08	\$2,508
3/4 ton pick-up with trailer		4	50	\$27.77	\$5,554
1/2 ton pickup with 4wd		4	50	\$11.35	\$2,270
small tools, 2% of labor					\$1,472
				Subtotal:	\$24,086
Labor		No.	Hours	Rate	Total
operator (crane)		3	50	\$66.01	\$9,902
teamster		2	50	\$53.57	\$5,357
pipefitter/welder		4	50	\$73.73	\$14,746
helper		4	50	\$44.24	\$8,848
laborer		8	50	\$52.78	\$21,112
foreman		1	50	\$75.14	\$3,757
per diem	5 days	crew size:	22	\$90.00	\$9,900
				Subtotal:	\$73,622
Material					Total
allow 2% of labor					\$1,472
				Subtotal:	\$1,472
Total Direct Costs (3) =					\$99,180

MoGas Pipeline LLC
Final Abandonment Estimate

I. N. Curryville compressor station (continued)

4. Remove station buildings (5 days)

Equipment	No.	Hours	Rate	Total
backhoe, Cat 320CL w grapple	1	50	\$64.15	\$3,208
backhoe, Cat 320CL w shears	1	50	\$83.96	\$4,198
hydrocrane, 30 ton	1	50	\$64.44	\$3,222
flatbed truck	2	50	\$25.08	\$2,508
lowboy	1	50	\$56.13	\$2,807
3/4 ton pick-up with trailer	4	50	\$27.77	\$5,554
1/2 ton pickup with 4wd	4	50	\$11.35	\$2,270
small tools, 2% of labor				\$1,519
Subtotal:				\$25,285

Labor	No.	Hours	Rate	Total
operator	2	50	\$57.94	\$5,794
operator (hydrocrane)	1	50	\$66.01	\$3,301
teamster	3	50	\$53.57	\$8,036
pipefitter/welder	4	50	\$73.73	\$14,746
helper	4	50	\$44.24	\$8,848
laborer	8	50	\$52.78	\$21,112
foreman	1	50	\$75.14	\$3,757
per diem	5 days	crew size:	23	\$90.00
Subtotal:				\$75,943

Material	Total
allow 2% of labor	\$1,519
Subtotal:	\$1,519

Total Direct Costs (4) = \$102,747

5. Demolish concrete foundations and compressor blocks to 3-ft below ground surface (10 days)

Equipment	No.	Hours	Rate	Total
backhoe, Cat 320C w hammer	4	100	\$70.64	\$28,256
backhoe, Cat 320C	1	100	\$47.65	\$4,765
dump truck 14 cy	2	100	\$39.38	\$7,876
3/4 ton pick-up with trailer	4	100	\$27.77	\$11,108
1/2 ton pickup with 4wd	2	100	\$11.35	\$2,270
small tools, 2% of labor				\$2,670
Subtotal:				\$56,945

MoGas Pipeline LLC
Final Abandonment Estimate

I. N. Curryville compressor station (continued)

Line Item 5 (continued)

Labor	No.	Hours	Rate	Total
operator	5	100	\$57.94	\$28,970
teamster	2	100	\$53.57	\$10,714
pipefitter/welder	4	100	\$73.73	\$29,492
helper	4	100	\$44.24	\$17,696
laborer	4	100	\$52.78	\$21,112
foreman	1	100	\$75.14	\$7,514
per diem	10 days	crew size:	20	\$90.00
Subtotal:				\$133,498

Material	Total
Miscellaneous (2% of labor)	\$2,670
Subtotal:	\$2,670

Total Direct Costs (5) = \$193,113

6. Restore site (5 days)

Equipment	No.	Hours	Rate	Total
track loader, Cat 953C	1	50	\$54.56	\$2,728
flatbed truck	1	50	\$25.08	\$1,254
1/2 ton pickup with 4wd	2	50	\$11.35	\$1,135
small tools, 2% of labor				\$461
Subtotal:				\$5,578

Labor	No.	Hours	Rate	Total
operator	1	50	\$57.94	\$2,897
teamster	1	50	\$53.57	\$2,679
laborer	4	50	\$52.78	\$10,556
foreman	1	50	\$75.14	\$3,757
per diem	5 days	crew size:	7	\$90.00
Subtotal:				\$23,039

Material	Total
allow \$ 10000 for backfill, topsoil, seed, fertilizer, straw bales, etc.	\$10,000
Sales tax @ 7%	\$700
Subtotal:	\$10,700

Total Direct Costs (6) = \$39,316

MoGas Pipeline LLC
Final Abandonment Estimate

I. N. Curryville compressor station (continued)

Summary: Curryville Compressor Station

A. Pipeline contractor costs		
1. Remove fence and miscellaneous material and access work site		\$17,300
2. Excavate, remove valves, blowdowns, and yard piping		\$70,265
3. Remove station equipment		\$99,180
4. Remove station buildings		\$102,747
5. Demolish concrete foundation and compressor blocks to 3-ft below ground surface		\$193,113
6. Restore site		\$39,316
	Pipeline contractor direct costs:	\$521,921
	5% Mobilization	\$26,096
	Subtotal:	\$548,018
	15% Contractor overhead:	\$82,203
	Subtotal:	\$630,220
	10% Contractor profit:	\$63,022
	Total pipeline contractor costs:	\$693,242
B. Environmental contractor costs (5% of pipeline contractor costs)		
This section reflects work performed by environmental contractor to monitor work and check for presence of hazardous materials. Work involves inspection, sampling, evaluation, and report writing.		
		\$34,662
	Total environmental contractor costs:	\$34,662
C. Pipeline company inspection costs		
1. Number of days per site		32
2. Company cost per day		\$1,000
	Total company inspection cost per site:	\$32,000
D. Pipeline company management and overhead costs (15% of A + B + C)		
		\$113,986
	Total management and overhead cost:	\$113,986
Total estimated cost to retire Curryville compressor station (A + B + C + D):		\$873,890

MoGas Pipeline LLC
Final Abandonment Estimate

II. Salvage

A. Equipment

		Estimated Salvage (Mar 2009\$)
No.	Location	
1	Curryville compressor station	(\$99,180)

MoGas Pipeline LLC Final Abandonment Estimate

II. Salvage

B. Scrap steel

Estimated carbon steel scap value:

\$125 per ton

	No.	Weight/ Site (ton)	Total Weight (ton)	Scrap Value (ton)	Estimated Salvage (Mar 2009\$)
1 Mainline valve sites					
a. Typical valve site.	26	5	130	\$125	(\$16,250)
				Subtotal:	(\$16,250)

	Weight per Station (ton)	Scrap Value (ton)	Estimated Salvage Per station (Mar 2009\$)	Total No. of Stations	Estimated Salvage All stations (Mar 2009\$)
2 M&R stations					
a. Medium M&R station	25	\$125	(\$3,125)	9	(\$28,125)
b. Small M&R station	15	\$125	(\$1,875)	13	(\$24,375)
c. Very small M&R station	5	\$125	(\$625)	3	(\$1,875)
				Subtotal:	(\$54,375)

	No.	Weight/ Site (ton)	Total Weight (ton)	Scrap Value (ton)	Estimated Salvage (Mar 2009\$)
3 Curryville compresor station					
1 Compressor bldg	1	150	150	\$125	(\$18,750)
2 Auxiliary/office bldg	1	75	75	\$125	(\$9,375)
3 Meter stations	2	15	30	\$125	(\$3,750)
4 Piping, valves	L.S.	100	100	\$125	(\$12,500)
				Subtotal:	(\$44,375)

	No.	Length of Pipe Removed (ft)	Wt/ft 12-inch Pipe (lbs)	Total Weight (lbs)	Total Weight (ton)	Estimated Salvage (Mar 2009\$)
4 Pipe (misc. removal)						
a. Uncased crossings	4	40	43.77	7,003	4	(\$438)
b. Cased crossings	123	240	43.77	1,292,090	646	(\$80,756)
c. Small stream crossings	107	40	43.77	187,336	94	(\$11,708)
d. River crossings	2	40	43.77	3,502	2	(\$219)
e. Large stream crossings	6	40	43.77	10,505	5	(\$657)
					Subtotal:	(\$93,777)

	Length Removed (ft)	Wt/ft (lbs)	Total Weight (lbs)	Total Weight (ton)	Estimated Salvage (Mar 2009\$)
5 Pipe removal (Option II)					
a. 16"	257,946	62.58	16,142,246	8,071	(\$1,008,890)
b. 12"	367,932	43.77	16,104,385	8,052	(\$1,006,524)
c. 10"	470,303	34.24	16,103,191	8,052	(\$1,006,449)
d. 6"	233,790	18.97	4,434,999	2,217	(\$277,187)
e. 4"	2,521	10.79	27,207	14	(\$1,700)
	1,332,493			Subtotal:	(\$3,300,752)

MoGas Pipeline LLC
Final Abandonment Estimate

II. B. Scrap steel (continued)

Summary Scrap Steel Salvage - Option I (Abandon in-place)

Salvage Item	Salvage Amount (Mar 2009\$)
1 Valves	(\$16,250)
2 M&R stations	(\$54,375)
3 Curryville compressor station	(\$44,375)
4 Pipe (misc. removal)	(\$93,777)
Total:	(\$208,777)

Summary Scrap Steel Salvage - Option II (Remove pipe)

Salvage Item	Salvage Amount (Mar 2009\$)
1 Valves	(\$16,250)
2 M&R stations	(\$54,375)
3 Curryville compressor station	(\$44,375)
4 Pipe (misc. removal)	(\$93,777)
5 Pipe (mainline removal)	(\$3,300,752)
Total:	(\$3,509,529)

MoGas Pipeline LLC
Final Abandonment Estimate

II. Salvage

C. Line pack

Abandonment pressure estimated to be 200 psig.

1 Amount of MoGas line pack

a.	Total MoGas transmission line pack (Mcf)	40,000
b.	MoGas line pack gas heat content per Mcf (Dth)	1.02
c.	Total MoGas transmission line pack (Dth)	40,800

2 Amount of recoverable MoGas line pack

a.	Total MoGas transmission line pack (Dth)	40,800
b.	Unrecoverable line pack (Dth) (Ref: Workpapers)	14,603
c.	Recoverable MoGas transmission line pack (Dth)	26,197

3 Value of recoverable line pack

a.	NYMEX March 2009 natural gas commodity price per Dth	\$3.78
b.	Recoverable MoGas transmission line pack (Dth)	26,197
c.	Line pack salvage value:	(\$99,023)

MoGas Pipeline LLC
Final Abandonment Estimate

Pipeline Contractor Labor Rates and Company Inspection Costs

A Pipeline contractor labor rates

		(Note 1)	(Note 2)	(Note 3)			(Note 4)	
		Sept 2008		Mar 2009		Mar 2009	Labor	Mar 2009
		Labor Rate		Labor Rate		Labor Rate	Overhead	Labor Rate
		Including	De-	Including		Adjusted	25% of	Pipeline
		Fringe	Escalation	Fringe	Overtime	for	Mar 2009	Demolition
		Benefits	Factor	Benefits	Factor	Overtime	Base Rate	Estimate
Trade		(\$/hr)		(\$/hr)		(\$/hr)	(%)	(\$/hr)
1	Operating engineers:							
2	Crane operator	\$46.61	0.997	\$46.48	1.17	\$54.39	\$11.62	\$66.01
3	Heavy equipment	\$40.91	0.997	\$40.80	1.17	\$47.74	\$10.20	\$57.94
4	Small equipment	\$39.87	0.997	\$39.76	1.17	\$46.52	\$9.94	\$56.46
5	Electrician	\$47.99	0.997	\$47.86	1.17	\$56.00	\$11.97	\$67.96
6	Electrician helper	\$28.79	0.997	\$28.72	1.17	\$33.60	\$7.18	\$40.78
7	Ironworker (structural)	\$47.38	0.997	\$47.25	1.17	\$55.29	\$11.81	\$67.10
8	Laborer	\$37.27	0.997	\$37.17	1.17	\$43.49	\$9.29	\$52.78
9	Pipefitter/welder	\$52.06	0.997	\$51.92	1.17	\$60.75	\$12.98	\$73.73
10	Pipefitter/welder helper	\$31.24	0.997	\$31.15	1.17	\$36.45	\$7.79	\$44.24
11	Teamster	\$37.83	0.997	\$37.73	1.17	\$44.14	\$9.43	\$53.57
12	Foreman	\$53.06	0.997	\$52.92	1.17	\$61.91	\$13.23	\$75.14

Labor overhead factor: 25%

Per diem: \$90 IRS Publication 1542, "Per Diem Rates", October 2008.

B. Pipeline company inspection costs

	Estimated Cost/day
1 Pipeline and M&R stations	\$500
2 Curryville compressor station	\$1,000

Note: Inspection costs include direct labor, per diem, and transportation costs.

Notes

- Hourly union pay scales, September 2008, Kansas City, Missouri (ENR September 29, 2008).
- De-escalation factor based on ENR construction cost indices Sept 2008 of 8557 and Mar 2009 of 8534.
- Work 6-day week, 10-hr day. See workpapers for calculation of overtime factor.
- FICA, unemployment compensation, and workers compensation insurance that employers must pay.

MoGas Pipeline LLC
Final Abandonment Estimate

Pipeline Contractor Equipment Rates

	Equipment Description	(Note 1) Sept 2007 Equip. Rate	(Note 2) Escalation Factor	Mar 2009 Equip. Rate
		(\$/hr)		(\$/hr)
1	air compressor 160G, 160 cfm	\$16.30	1.060	\$17.28
2	air hose, 1-inch, 100 ft	\$1.09	1.060	\$1.16
3	paving breaker, 80-90 Lb	\$0.73	1.060	\$0.77
4	crane, 25 ton, Grove, hydrocrane 152 hp	\$53.47	1.060	\$56.68
5	crane, 30 ton, Grove, hydrocrane 152 hp	\$60.79	1.060	\$64.44
6	crane, 50 ton, Grove, hydrocrane 400 hp	\$110.14	1.060	\$116.75
7	fork lift, 75 hp	\$19.20	1.060	\$20.35
8	motor grader, Cat 135-H, 135 hp	\$39.48	1.060	\$41.85
9	hydraulic excavator, Bobcat, 0.18 cy	\$16.54	1.060	\$17.53
10	hydraulic excavator, Cat 312C, 0.68 cy	\$35.93	1.060	\$38.09
11	hydraulic excavator, Cat 320C, 1.50 cy	\$44.95	1.060	\$47.65
12	hydraulic excavator, Cat 320CL, 0.80 cy	\$54.08	1.060	\$57.32
13	hydraulic hammer, 350 ft-lb	\$4.53	1.060	\$4.80
14	hydraulic hammer, 750 ft-lb	\$7.45	1.060	\$7.90
15	hydraulic hammer, 3000 ft-lb	\$21.69	1.060	\$22.99
16	hydraulic grapple, Labounty 120 TR	\$6.44	1.060	\$6.83
17	hydraulic shears, 27", Labounty MSD 40-III SV	\$25.13	1.060	\$26.64
18	lights, 6/1000W, 8 KW gen, trailer mtd.	\$6.08	1.060	\$6.44
19	pipelayer, Cat 561M, 18 ft boom, 40,000 lbs capacity	\$35.90	1.060	\$38.05
20	pipelayer, Cat 572R, 20 ft boom, 90,000 lbs capacity	\$68.00	1.060	\$72.08
21	pump, grout, trailer mounted, 810 cf/hr	\$11.55	1.060	\$12.24
22	pump, grout, trailer mounted, 2295 cf/hr	\$26.93	1.060	\$28.55
23	pump, water, skid-mounted, 6" dia, 1165 gpm	\$12.32	1.060	\$13.06
24	pump, hose, 6" dia, 100' length	\$3.00	1.060	\$3.18
25	tractor, Cat D-6R, 165 hp	\$80.33	1.060	\$85.15
26	winch for D-6R dozer	\$7.41	1.060	\$7.85
27	track loader, Cat 953C, 2.25 cy	\$51.47	1.060	\$54.56
28	dump truck, 8 cy	\$23.39	1.060	\$24.79
29	dump truck, 14 cy	\$37.15	1.060	\$39.38
30	flatbed truck	\$23.66	1.060	\$25.08
31	pipe truck	\$49.35	1.060	\$52.31
32	lowboy, 50 ton	\$52.95	1.060	\$56.13
33	1/2 ton pickup, crew, 4wd	\$10.71	1.060	\$11.35
34	3/4 ton pickup, crew, 4wd	\$13.31	1.060	\$14.11
35	welder, trailer mounted, 45 hp	\$12.89	1.060	\$13.66

Notes

- Hourly Equipment Rates from July 2007, US Army Corps of Engineers (Amended September 2007) Construction Equipment Ownership and Operating Expense Schedule, Region V.
- Escalation factor based on ENR construction cost indices Sept 2007 of 8050 and March 2009 of 8534. per ENR 3/23/09.

MoGas Pipeline LLC
Final Abandonment Estimate

Workpapers - General

A. Quantities

	Length (mile)	Dia. > 12-inch (Miles)	Dia. > 6-inch (Miles)
1 Transmission pipeline miles			
a. 16 in.	51.15	51.15	51.15
b. 12 in.	72.96		72.96
c. 10 in.	93.26		93.26
d. 6 in.	46.36		
e. 4 in.	0.50		
Total:	264.23	51.15	217.37
Percentage of transmission pipeline > 12-inch diameter: 19.4%			
Percentage of transmission pipeline > 6-inch diameter: 82.3%			
2 No. of uncased railroad and highway/road crossings			
a. Highways/roads			No.
1 All diameters			16
2 Pipeline diameter > 12-inch			3
b. Railroads			
1 All diameters			1
3 No. of cased railroad and highway/road crossings			
a. Highways/roads			No.
1 All casing diameters			135
2 Casing diameter > 12-inch (i.e., pipeline 10", 12", 16" dia.)			111
3 Casing diameter ≤ 12-inch (i.e., pipeline 4", 6" dia.)			24
b. Railroads			
1 All casing diameters			12
4 No. of small stream crossings			No.
			107
	Average crossing length: 100 ft		
	Average diameter: 10 in		
5 Large river crossings			No.
a. Mississippi River (12" pipe)	4000 ft	trenched	1
b. Missouri River (16" pipe)	3000 ft	bored	1
6 No. of large stream crossings			
	Average crossing length (ft): 500 ft		No.
a. Bourbeuse River (Owensville Lateral)	6 " dia. pipe		1
b. Little Bourbeuse River	10 " dia. pipe		1
c. Little Bourbeuse River	10 " dia. pipe		1
d. Big Piney River	10 " dia. pipe		1
e. Bourbeuse River (Franklin County)	10 " dia. pipe		1
f. Cuiver River	12 " dia. pipe		1
Average:	10 " dia. pipe	Total:	6

**MoGas Pipeline LLC
Final Abandonment Estim**

Workpapers - General (continued)

7	No. of mainline valve sites (not at stations)				No.	26
8	No. of cathodic protection facilities				No.	
	a. Test sites					1,200
	b. Rectifiers				No.	
	1 Wholly-owned					8
	2 Partially-owned (50%)					13
9	No. of pipeline markers				No.	4,800
10	No. of M&R stations				No.	
	a. Medium					9
	b. Small (Includes PEPL and REX M&R stations @ Curryville)					13
	c. Very small					3
	Total:					25
11	Pipe removal adjustment (Option II)	Estimated	Avg. length	Total Length		
		No.	(ft)	(ft)		
	a. Uncased railroad/highway	17	140	2,380		
	b. Cased railroad/highway	147	240	35,280		
	c. Large river crossings					
	1 Mississippi River	1	4,000	4,000		
	2 Missouri River	1	3,000	3,000		
	d. Large stream crossings	6	500	3,000		
	e. Small stream crossings	107	140	14,980		
		279		62,640		
	f. Calculation of reduction factor					
	1 Total crossing length (ft):			62,640		
	2 Crossing length (miles):			11.86		
	3 Total transmission pipe length (miles):			264.23		
	4 Adjusted pipe removal length (miles):			252.37		
	5 Reduction factor:			0.9551		
B.	Estimated no. of pipe trucks required during pipe removal. A temporary pipe storage yard is estimated to be located every 50 miles.					
1	Average miles of haul to temporary pipe storage yard (one-way)					12.5
2	Pipe truck travel time and unloading time (hours)					
	a. Highway travel time round trip (hr)	25 mph		1.00		
	b. Time to load truck at work site (hr)	30 min.		0.50		
				Total:		1.50
3	Time to unload pipe truck at storage yard (hr)	30 min.		0.50		

MoGas Pipeline LLC
Final Abandonment Estimate

Workpapers - General (continued)

4	No. of loads per day per pipe truck $10/((2)+(3))$		5.00
5	No. of pipe trucks required to keep one crane productive at storage yard $(2)/(3)$		3.00
6	Total no. of pipe truck loads required per day		
	a. Length of pipe removed per day (ft)		5280
	b. Pipe hauled per truck @ 10 pipe sections per load (ft)	10 x 40 ft	400
	c. No. of loads required per day $(a)/(b)$		13
7	Total number of pipe trucks required at 5 loads per truck per day		2.64
	Estimate that 3 pipe trucks are required.		
C.	Estimated no. of dump trucks required during pipe removal		
1	Average miles of haul to borrow site (one-way)		12.5
2	Pipe truck travel time, loading, and unloading time (hr)		
	a. Highway travel time (hr)	25 mph	1.00
	b. Time to load truck (hr)	10 min.	0.17
	c. Time to unload (hr)	5 min.	0.08
		Total:	1.25
3	No. of loads per day per dump truck (10-hr day)		8.00
4	Total no. of loads required per day		
	a. Amount of borrow required per day (cy)		300
	b. Capacity of dump trucks (cy)		14
	Total no. of loads required per day $(a)/(b)$		21
5	Total number of trucks required at 8 loads per truck per day		2.68
	Estimate that 3 dump trucks (14 cy) required		
D.	ROW damages applicable to pipe removal	\$2 per foot	Per mile: \$10,560
E.	Overtime factor for six 10-hour days worked per week		
		Hours Worked	Overtime Factor
	Straight-time 8 hours/day M-F	40	1
	Overtime 2 hours/day M-F	10	1.5
	Overtime Saturday	10	1.5
	Total:	60	70
	Overtime factor:	1.17	
F.	Miscellaneous		
1	Sales tax rate		7%
2	Grout cost per cy		\$84
3	Backfill material per cy		\$10

MoGas Pipeline LLC Final Abandonment Estimate

Workpapers - Line pack calculation

A. Calculate pipeline volume

	Length (mile)	Length (ft)	Dia (ft)	Cu Ft/Ft (cf)	Total Volume (cf)
1 16-inch dia.	51.15	270,072	1.25	1.23	331,428
2 12-inch dia.	72.96	385,229	1.00	0.79	302,558
3 10-inch dia.	93.26	492,413	0.83	0.55	268,570
4 6-inch dia.	46.36	244,781	0.50	0.20	48,063
5 4-inch dia.	0.50	2,640	0.33	0.09	230
Total:	264.23	1,395,134			950,849

B. Calculate volume of unrecoverable line pack at 200 psig abandonment pressure

1 Calculate number of moles of line pack at 60 degrees F and 200 psig in pipelines

P2 = 214.7 psia
 V2 = 950,849 cf
 T2 = 520 Degrees Rankine = 60 degrees F
 R = 10.73 Universal Gas Constant
 n = ? No. of moles
 (See Part B. 3 below) z(2) = 0.97 Compressibility Factor

Equation of state: $PV = znRT$

$$(P2)(V2)/(z2)(T2) = nR$$

$$404,733 = nR$$

$$37,720 = n$$

2 Calculate equivalent volume of natural gas in pipelines at standard conditions

P1 = 14.7 psia
 V1 = ? cf
 T1 = 520 Degrees Rankine = 60 Degrees F
 R = 10.73 Universal Gas Constant
 n = 37,720 No. of moles
 z1 = 1 Compressibility factor

$$V1 = (z1)(n1)(R)(T1)/(P1)$$

$$V1 = 14,317,078 \text{ cf}$$

Volume of unrecoverable line pack (scf) = V1 = 14,317 Mcf
 Heat content per Mcf of line pack gas = 1.02 Dth
 Heat content of unrecoverable line pack = 14,603 Dth

MoGas Pipeline LLC
Final Abandonment Estimate

Workpapers - Line pack calculation (continued)

3 Calculation of compressibility factor (z)

Equation of State:

$$PV = znRT$$

60 degrees F equivalent to 520 degrees Rankine

520.0 degrees Rankine

Critical Temperature of Methane =

343.3 degrees Rankine

Reduced Temperature = $520/343.3 =$

1.515 reduced temperature

200 psig =

214.7 psia

Critical Pressure of Methane =

673.1 psia

Reduced Pressure = $214.7/673.1 =$

0.319 reduced pressure

0.97 z factor from chart