

*Economic and Engineering Report*

**Economic Runs for Application to Commingle,  
Pictured Cliffs and Fruitland Coal.**

The following is a summary of economic scenarios for Pictured Cliffs and Fruitland Coal completions in West Gallegos prospect, Sec 12, 29N, 13W, San Juan County, New Mexico. The purpose of the following economic analysis is to compare profitability and reserves between a commingled Pictured Cliffs and Fruitland Coal well, versus two different wells one completed at Pictured Cliffs and one completed at Fruitland Coal.

For the purpose of comparison, the following parameters were held constant, both for ROPCO and Amoco:

Working Interest	100%
Net Revenue Interest	80%
First day of Production	January 1, 1996
State, Severance and Ad Valorem Tax	8.26%
Escalation of operating costs	3% annually after 12/96
Water Injection Costs (\$/bbl)	1.25
Gas Price (\$/MCF)	1.39, escalated 3% annually after 12/96

<b>Performance:</b>	<b>Pictured Cliffs</b>	<b>Fruitland Coal</b>	<b>PC &amp; FC Commingled</b>
Gas initial Rate (MCF/day)	600	250	850
Gas annual decline rate	10%	10%	10%
Initial water production rate (bbl/day)	60	15	75
Water annual decline rate	10%	10%	10%

In addition to the current analysis, in the appendix of this report are the tabulated list of operating cost calculations and the Summary Reports from the economic runs.

For every well in all cases considered above, a compressor is purchased at \$85,000 and financed over 4 years at 9% annual rate. This results to a \$2115/month payment for the first 4 years.



**Summarized Results**

**A: Pictured Cliffs**

The cost to drill and complete a Pictured Cliffs well is \$123,272.

Gas Reserves (MCF)	1,945,447
Life of Project to Economic Limit (yrs, mos)	26, 4
Net Cash Flow (Undiscounted)	\$1,475,492
Net Cash Flow (Discounted at 10%)	\$725,403
Profit / Investment Ratio	11.97
Total Capital Expenses	\$123,272

**B: Fruitland Coal**

The cost to drill and complete a Fruitland Coal well is \$124,580

Gas Reserves (MCF)	575,073
Life of Project to Economic Limit (yrs, mos)	10, 5
Net Cash Flow (Undiscounted)	\$118,278
Net Cash Flow (Discounted at 10%)	\$47,391
Profit / Investment Ratio	0.96
Total Capital Expenses	\$124,580

**C: Commingled Pictured Cliffs and Fruitland Coal Well**

The cost to drill and complete a commingled Pictured Cliffs and Fruitland Coal well is \$177,379.

Gas Reserves (MCF)	2,813,064
Life of Project to Economic Limit (yrs, mos)	29, 9
Net Cash Flow (Undiscounted)	\$2,408,159
Net Cash Flow (Discounted at 10%)	\$1,149,163
Profit / Investment Ratio	13.57
Total Capital Expenses	\$177,379

**D: Comparison Between a Commingled PC&FC Completion and a Combination of one PC and one FC Well.**

The following is a direct comparison between one commingled Pictured Cliffs and Fruitland Coal well, versus a two wells combined; one completed at Pictured Cliffs and the other completed at Fruitland Coal.

	<b>Commingled</b>	<b>Combined</b>
<b>Gas Reserves (MCF)</b>	2,816,761	2,520,345
<b>Life of Project to Economic Limit (yrs, mos)</b>	30, 0	26, 4
<b>Net Cash Flow (Undiscounted)</b>	\$2,503,544	\$1,593,770
<b>Net Cash Flow (Discounted at 10%)</b>	\$1,192,249	\$772,794
<b>Profit / Investment Ratio</b>	14.11	6.43
<b>Total Capital Expenses</b>	\$177,379	\$247,852

**D: Conclusions**

According to all the above considerations, the commingling case results to the most favorable economics. The economics as a result of commingling will benefit the State with higher reserves recoverable, higher life of the project, thus conservation of natural resources by waste reduction, higher tax revenues and employment. The working interest owners will benefit by greater return on investment.

Signed:

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APPENDIX I  
OPERATING COSTS CALCULATIONS

In cases (1) and (i), compressors are rented, maintenance free.

	<b>ROPCO</b>	<b>AMOCO</b>
Overhead	450	500
Pumper	275	275
Compressor Rental	1,646	2,500
District Office	0	300
<b>TOTAL</b>	<b>2,371</b>	<b>3,575</b>

In cases (2) and (ii), compressors are purchased and financed over a period of years.

	<b>ROPCO</b>	<b>AMOCO</b>	<b>AMOCO</b>
	<b>4 year plan</b>	<b>4 year plan</b>	<b>5 year plan</b>
Overhead	450	500	500
Pumper	275	275	275
Compressor Monthly Payment*	2,115	2,986	2,500
Compressor Maintenance	400	400	400
District Office	0	300	300
<b>TOTAL</b>	<b>3,240</b>	<b>4,461</b>	<b>3,975</b>

\* This expense takes effect only for the period over which the purchase is financed.

In cases (3) and (iii), used compressors are purchased.

	<b>ROPCO</b>	<b>AMOCO</b>
Overhead	450	500
Pumper	275	275
Compressor Maintenance	400	400
District Office	0	300
<b>TOTAL</b>	<b>1125</b>	<b>1475</b>



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APPENDIX II  
ECONOMIC RUN RESULTS

The following are tabulated results of economic runs covering cases 1-3 and i-iii. The economic analysis program utilized is ENPAK.