

$$NPV = \sum_{t=1}^T \frac{PQ_t (1 - x^R)(1 - x^{SP}) - pq_t^p - c_t^r q_t^r - c_t^o}{(1 - r)^t} - K.$$

## Incremental Variable Cost Components

Cost Items	Cost Estimates	Notes
<b>Taxes</b>	16% Royalty Rate 6% Severance Tax 6% Property Tax	
<b>CO<sub>2</sub></b>	Qty of CO <sub>2</sub> (mcf) x Price (\$/mcf)	CO <sub>2</sub> Price Tying = \$0.50+2.5% x \$Oil
<b>Operating Dehydration &amp; Compression Plant</b>	Maintenance = \$45 per HP-yr Labor = \$25 per HP-yr Electricity = \$0.04/kWh Power = 7,000 kWh per HP-yr	Assumes Electric Motor
<b>Other Incremental Barrel Costs</b>	Variable = \$0.22 per Incremental Oil Barrel	
<b>Other Incremental Operating Costs</b>	Fixed = \$2,000 per Incremental Well/Month	An "Incremental Well" is any Newly Active Well
<b>Additional Incremental Lift Costs</b>	\$0.10 per Incremental Liquid Barrel	Liquid Includes both Oil and Water

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## Capital Investment Cost Components (K)

Cost Items	Cost Estimates	Notes
<b>Constructing Pipeline</b>	\$70,000 per inch-mile	Includes right of way, materials and construction
<b>Metering Station</b>	\$150,000 each	Estimates range from \$100k - \$300k
<b>Installing Dehydration &amp; Compression Plant</b>	\$1,200/hp x HP	Use 2/3rds rule <1,000 HP HP depends on recycling qty and suction/discharge pressure
<b>New Drilling (per well)</b>	\$116 - \$150 per ft	Drilling cost per foot depends on well depth
<b>Working Over an Existing Producer</b>	\$80,000 per well	Cleanout/acidize, high pressure stuffing box, bop above wellhead
<b>Equipping a New Producer / Returning a TA'd Well to Production</b>	\$15 x Depth (ft) + \$225,000 per well	Open hole, acidize, tubing with rods, pumping unit, high pressure stuffing box, bop above wellhead
<b>Converting a Well to CO<sub>2</sub> Injection</b>	\$15 x Depth (ft) + \$70,000 per well	Acidize, duo-line tubing, packer, wraparound tubing hanger, stainless tubing valve
<b>Installing Surface Equipment/Facilities</b>	\$50,000 per Injector \$32,000 per Producer	Running CO <sub>2</sub> lines, installing CO <sub>2</sub> /water injection skid, running new flow-lines, seals, adding/replacing test fac.