



# Income and Small Cap Weekly

Analysis of Oil & Gas Stocks

June 3, 2011

## Petrohawk Energy Corporation (HK) Raise NPV to \$34 from \$24 on Eagle Ford

<i>Symbol</i>	HK	<i>Ebitda Next Twelve Months ending 3/31/12 (US\$m)</i>	1,619
<i>Rating</i>	Buy	<i>North American Natural Gas/Ebitda (%)</i>	66
<i>Price (\$/sh)</i>	25.97	<i>Natural Gas and Oil Production/Ebitda (%)</i>	100
<i>Pricing Date</i>	6/2/11	<i>Adjusted Reserves/Production NTM</i>	6.0
<i>Shares (mm)</i>	305	<i>EV/Ebitda</i>	7.3
<i>Market Capitalization (\$mm)</i>	7,920	<i>PV/Ebitda</i>	8.9
<i>Debt (\$mm)</i>	3,970	<i>Undeveloped Reserves (%)</i>	65
<i>Enterprise Value (EV) (\$mm)</i>	11,890	<i>Natural Gas and Oil Ebitda (\$/boe)</i>	25.50
<i>Present Value (PV) (\$mm)</i>	14,340	<i>Present Value Proven Reserves(\$/boe)</i>	25.40
<i>Net Present Value (\$/share)</i>	34	<i>Oil and Gas Ebitda Margin (%)</i>	74
<i>Debt/Present Value</i>	0.28	<i>Earnings Next Twelve Months (US\$/sh)</i>	1.54
<i>McDep Ratio - EV/PV</i>	0.83	<i>Price/Earnings Next Twelve Months</i>	17
<i>Dividend Yield (%/year)</i>	0.0	<i>Indicated Annual Dividend (US\$/sh)</i>	0.00
Note: Estimated cash flow and earnings tied to one-year futures prices for oil and natural gas.			
Reported results may vary widely from estimates. Estimated present value per share revised only infrequently.			
Estimated present value presumes a long-term price for oil of US\$100 a barrel and natural gas, \$8 a million btu.			

### Summary and Recommendation

Marathon Oil's June 1 deal to pay \$3.5 billion for Eagle Ford shale assets forces a \$3.7 billion increase in Net Present Value (NPV) for buy-recommended **Petrohawk Energy Corp. (HK)**. Petrohawk, which drilled industry's first well in the Eagle Ford shale, has about 300,000 net acres and about 2.2 billion barrels equivalent (Bboe) of non-proved resource potential on trend with the Hilcorp properties bought by Marathon (see slides by Petrohawk and Marathon on page 4). Marathon acquires 141,000 net acres with up to a half billion barrels resource potential. With HK having twice the acreage and perhaps more than twice the Eagle Ford potential, we are comfortable with taking our present value for HK's Eagle Ford to \$6 billion from \$2.3, the approximate amount in our previous estimate.

Boosting NPV to \$34 a share takes McDep Ratio down to the low end of the range at 0.83 making HK an attractive commitment from a quantitative as well as qualitative perspective (see [Tables 1-2](#) on pages 5-6). Attesting to the reasonableness of the higher NPV, HK's unlevered cash flow multiple on a present value basis (PV/Ebitda) at 8.9 ranks lower than the median for independent producer peers (see [Table 3](#) on page 7). HK stock price is in a strong uptrend and it reacted positively with the Marathon announcement (see [Table 4](#) on page 8).

The higher NPV looks justified on the basis of cash flow and reserve life after we give the company credit for the rapid volume growth management projects for the rest of 2011(see [tables Functional Cash Flow and Present Value](#) on page 2 and [Next Twelve Months Operating and Financial Performance](#) on page 3). Nonetheless, rapid volume growth carries added risk that it may not be achieved and if achieved may not be sustained. Similarly, values for acreage have



# Income and Small Cap Weekly

Analysis of Oil & Gas Stocks

June 3, 2011

higher risk than for flowing production even if the values are paid by a strong buyer like Marathon.

The seemingly high price paid for Eagle Ford acreage reminds us of the important role of innovative independent producers in creating value for the industry and the economy. When small caps sell out to large caps for a large value gain it proves part of the attraction of including small cap investments in a diversified portfolio. Twice before, Chief Executive Floyd Wilson has sold his small cap company to a larger buyer and it may happen again. Mr. Wilson believes HK has created an amount of drilling opportunity that would be better suited to a larger, well-capitalized buyer.

Kurt H. Wulff, CFA

<b>Petrohawk Energy Corporation</b>					
<b>Functional Cash Flow and Present Value</b>					
	<i>NTM Ebitda</i>	<i>Adjusted</i>	<i>PV/</i>	<i>Present</i>	
	<i>(US\$mm)</i>	<i>R/P</i>	<i>Ebitda</i>	<i>Value</i>	
				<i>(US\$mm)</i>	
North American Natural Gas	1,067	6.5	10.2	10,840	76%
Oil	551	3.0	6.3	3,500	24%
	1,619	6.0	8.9	14,340	100%
Debt (US\$mm)					3,970
Net Present Value (US\$mm)					10,370
Shares (mm)					305
Net Present Value - Standard Estimate (US\$/sh)					34
NPV Approximation by Cash Flow Multiple Depending on Reserve Life (US\$/sh)					34



# Income and Small Cap Weekly

Analysis of Oil & Gas Stocks

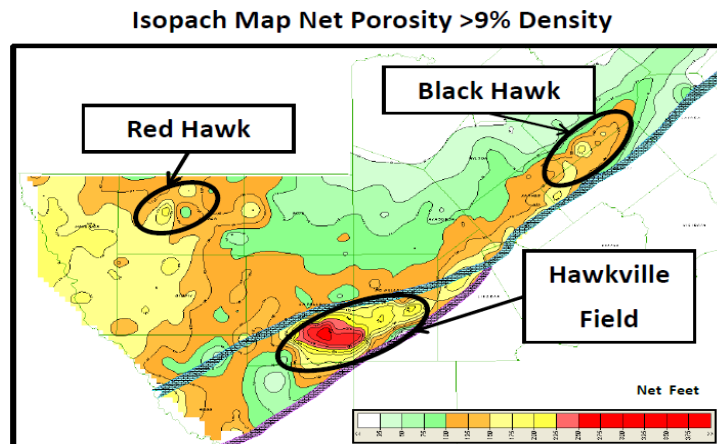
June 3, 2011

Petrohawk Energy Corporation									
Next Twelve Months Operating and Financial Estimates									
									<i>Next</i>
	<i>Q2</i>	<i>Year</i>	<i>Q1</i>	<i>Q2E</i>	<i>Q3E</i>	<i>Q4E</i>	<i>Year</i>	<i>Q1E</i>	<i>Twelve</i>
	<i>6/30/10</i>	<i>2010</i>	<i>3/31/11</i>	<i>6/30/11</i>	<i>9/30/11</i>	<i>12/31/11</i>	<i>2011E</i>	<i>3/31/12</i>	<i>Months</i>
									<i>3/31/12</i>
<b>Volume</b>									
Natural Gas (mmcf)	599	<b>643</b>	743	795	851	911	<b>826</b>	974	<b>883</b>
Oil (mbd)	4.4	<b>5.3</b>	13.8	17.7	22.6	29.0	<b>20.8</b>	37.1	<b>26.6</b>
Total (mb)	9.5	<b>41</b>	12.4	13.7	15.1	16.6	<b>58</b>	18.2	<b>64</b>
Total (mmcf)	626	<b>675</b>	826	901	987	1,084	<b>950</b>	1,197	<b>1,042</b>
<b>Price</b>	3,753	4,048	4,957	5,408	5,921	6,506	5,703	7,181	6,254
Henry Hub (\$/mmbtu)	4.09	<b>4.40</b>	4.11	4.42	4.68	4.88	<b>4.52</b>	4.66	<b>4.66</b>
Company (\$/mcf)	3.97	<b>4.19</b>	3.93	4.23	4.47	4.67	<b>4.35</b>	4.46	<b>4.46</b>
WTI Cushing (\$/bbl)	77.85	<b>79.43</b>	94.10	104.64	103.07	104.14	<b>101.49</b>	102.74	<b>103.65</b>
Company (\$/bbl)	57.60	<b>63.48</b>	69.60	77.40	76.24	77.03	<b>75.67</b>	76.00	<b>76.56</b>
Total (\$/bbl)	25.26	<b>26.93</b>	28.20	31.50	33.63	35.86	<b>32.60</b>	35.90	<b>34.40</b>
<b>Revenue (\$mm)</b>									
Natural Gas	216	<b>982</b>	263	306	350	391	<b>1,310</b>	395	<b>1,442</b>
Oil	23	<b>123</b>	87	125	159	205	<b>575</b>	256	<b>745</b>
Total	240	<b>1,105</b>	349	431	509	596	<b>1,885</b>	652	<b>2,187</b>
<b>Expense</b>									
Lease operating	18	<b>84</b>	18						
Production taxes	5	<b>10</b>	12						
General and administrative	37	<b>142</b>	33						
Total	60	<b>236</b>	63	112	132	155	<b>462</b>	169	<b>569</b>
<b>Ebitda</b>	180	<b>869</b>	286	319	376	441	<b>1,423</b>	482	<b>1,619</b>
Deprec., Deplet., & Amort.	101	<b>461</b>	157	157	157	157	<b>628</b>	157	<b>628</b>
Other	(25)	<b>(64)</b>	62				<b>62</b>		<b>-</b>
<b>Ebit</b>	104	<b>472</b>	67	162	219	284	<b>732</b>	325	<b>991</b>
Interest	62	<b>258</b>	67	67	67	67	<b>268</b>	67	<b>268</b>
<b>Ebt</b>	42	<b>214</b>	-	95	152	217	<b>464</b>	258	<b>723</b>
Income Tax	15	<b>75</b>	-	33	53	76	<b>163</b>	90	<b>253</b>
<b>Net Income (\$mm)</b>	27	<b>139</b>	-	62	99	141	<b>302</b>	168	<b>470</b>
Per Share (\$)	0.09	<b>0.46</b>	-	0.20	0.32	0.46	<b>0.99</b>	0.55	<b>1.54</b>
<b>Shares (millions)</b>	303	<b>302</b>	305	305	305	305	<b>305</b>	305	<b>305</b>
Ebitda Margin	75%	<b>79%</b>	82%	74%	74%	74%	<b>75%</b>	74%	<b>74%</b>
Tax rate	35%	<b>35%</b>		35%	35%	35%	<b>35%</b>	35%	<b>35%</b>

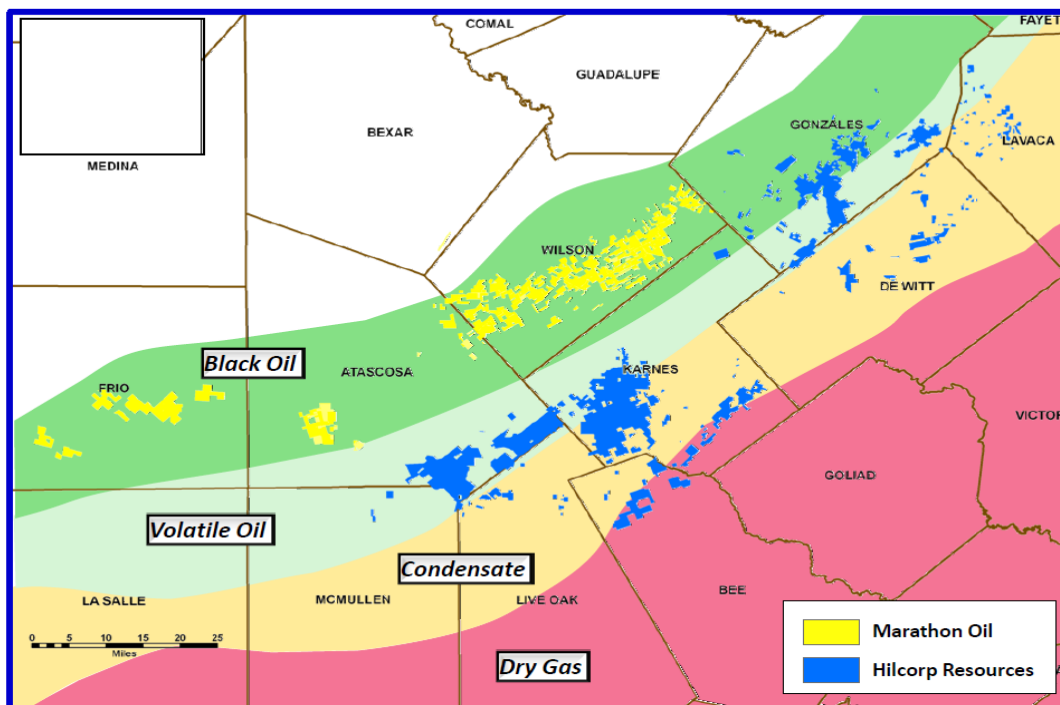
## Eagle Ford Shale Overview



- ~332,300 risked net commercially productive acres
- Plan for 12 rigs 1<sup>st</sup> half 2011 and 15 rigs 2<sup>nd</sup> half 2011
- Net operated production ~125 Mmcfe/d at 12/31/10
- YE 2010 Proved Reserves 457 Bcf + 19 Mmbo + 27 Mmbngl <sup>(1)</sup>
- Non-Proved Resource Potential 7.3 Tcf + 531 Mmbo + 495 Mmbngl <sup>(2)</sup>



## Eagle Ford Trends





# Income and Small Cap Weekly

Analysis of Oil & Gas Stocks

June 3, 2011

Table ISC-1											
McDep Income and Small Cap Energy Portfolio											
Debt, Segments, Cash Flow, Income and McDep Ratio											
			Price		Enterprise	PV(%)		EV/	Dist.	Dist.	
Symbol/Rating	(US\$/sh)	EV/	Market	Value	Nat	Oil	Ebitda	NTM	Yield	McDep	
CB (see below)	2011	Cap	(\$mm)	Gas			(\$/un)		(%)	Ratio	
<b>Small Cap Independent Producers</b>											
Peyto Exploration and Development	PEYUF		21.99	1.14	3,330	76	24	11.6	0.74	3.4	0.93
Range Resources	RRC	B	53.97	1.21	10,290	76	24	14.7	0.16	0.3	0.92
Berry Petroleum Company	BRY		50.55	1.52	4,150	26	74	8.4	0.30	0.6	0.89
Birchcliff Energy Ltd.	BIREF	B	13.63	1.22	2,160	55	45	12.1	-	-	0.87
Denbury Resources Inc.	DNR		20.90	1.28	10,630	6	94	7.8	-	-	0.87
Petrohawk Energy Corporation	HK	B	25.97	1.50	11,890	76	24	7.3	-	-	0.83
Ultra Petroleum	UPL		47.65	1.24	9,110	92	8	11.1	-	-	0.83
Cimarex Energy Company	XEC	B	93.74	1.09	8,790	44	56	6.3	0.30	0.3	0.80
Whiting Petroleum Corporation	WLL	B	64.50	1.21	9,200	11	89	6.6	-	-	0.75
<i>Total or Median</i>					69,600			8.4			0.87
<b>Top Line Cash Payers</b>											
Freehold Royalties Ltd.	FRHLF		21.77	1.07	1,360	18	82		1.72	7.9	0.99
Permian Basin RT	PBT		20.83	1.00	970	42	58		1.77	8.5	0.95
Sabine Royalty Trust	SBR		64.98	1.00	950	51	49		4.98	7.7	0.93
Cross Timbers Royalty Trust	CRT		41.66	1.00	250	87	13		3.09	7.4	0.93
Dorchester Minerals, L.P.	DMLP	B	27.01	1.00	830	61	39		1.84	6.8	0.90
<i>Total or Median</i>					4,400					7.7	0.93
<b>Bottom Line Cash Payers</b>											
Linn Energy, LLC	LINE		38.27	1.41	8,820	35	65	12.5	2.64	6.9	1.09
Legacy Reserves L.P.	LGCY		30.56	1.41	1,870	19	81	10.4	2.12	6.9	1.06
Hugoton Royalty Trust	HGT	B	22.93	1.00	920	88	13	13.6	1.46	6.4	1.04
Vanguard Natural Resources, LLC	VNR		28.44	1.69	1,640	26	74	12.1	2.28	8.0	1.03
San Juan Basin Royalty Trust	SJT		23.90	1.00	1,110	100	-	13.5	1.50	6.3	0.96
Encore Energy Partners, L.P.	ENP		21.31	1.31	1,260	17	83	9.5	1.96	9.2	0.94
Pengrowth Energy Corporation	PGH		12.78	1.41	5,900	30	70	8.3	0.86	6.7	0.94
Enerplus Corporation	ERF	B	31.60	1.27	7,200	33	67	8.3	2.21	7.0	0.88
Mesa Royalty Trust	MTR		45.25	1.00	84	75	25	12.1	3.01	6.7	0.85
<i>Total or Median</i>					28,800			12.1		6.9	0.96
<b>Composite</b>											
<i>Enterprise Value Weighting</i>					102,700	46	54				0.88
<i>Equal Weighting</i>						50	50				0.92
<i>Equal Weighted Buys</i>						52	48				0.87
CB=Contrarian Buy, Stock Price apparently in downtrend compared to 200-day average.											
McDep Ratio = Market cap and Debt to present value of oil and gas and other businesses.											
Present Value (PV) presumes long-term prices of \$100 a barrel for oil and \$8 a million btu for natural gas.											
Dist. = Income distribution. NTM = Next Twelve Months Ended March 31, 2012. Enterprise Value = Market Cap and Debt.											



# Income and Small Cap Weekly

Analysis of Oil & Gas Stocks

June 3, 2011

Table ISC-2								
McDep Income and Small Cap Energy Portfolio								
Net Present Value and McDep Ratio								
			<i>Price</i>			<i>Net</i>		
			<i>(\$/sh)</i>		<i>Market</i>	<i>Present</i>	<i>Debt/</i>	
	<i>Symbol/</i>		<i>2-Jun</i>	<i>Shares</i>	<i>Cap</i>	<i>Value</i>	<i>Present</i>	
	<i>Rating</i>		<i>2011</i>	<i>(mm)</i>	<i>(\$mm)</i>	<i>(\$/un)</i>	<i>Value</i>	
							<i>McDep</i>	
							<i>Ratio</i>	
<b>Small Cap Independent Producers</b>								
Peyto Exploration and Development Cor	PEYUF		21.99	132.7	2,920	24.00	0.11	0.93
Range Resources	RRC	B	53.97	158.0	8,530	60.00	0.16	0.92
Berry Petroleum Company	BRY		50.55	54.0	2,730	60.00	0.30	0.89
Birchcliff Energy Ltd.	BIREF	B	13.63	130.0	1,770	16.00	0.16	0.87
Denbury Resources Inc.	DNR		20.90	397.0	8,300	25.00	0.19	0.87
Petrohawk Energy Corporation	HK	B	25.97	305.0	7,920	34.00	0.28	0.83
Ultra Petroleum	UPL		47.65	154.0	7,340	60.00	0.16	0.83
Cimarex Energy Company	XEC	B	93.74	86.1	8,070	120.00	0.06	0.80
Whiting Petroleum Corporation	WLL	B	64.50	118.0	7,610	90.00	0.13	0.75
	<i>Total or Median</i>				55,190		0.16	0.87
<b>Top Line Cash Payers</b>								
Freehold Royalties Ltd.	FRHLF		21.77	58.4	1,270	22.00	0.06	0.99
Permian Basin RT	PBT		20.83	46.6	970	22.00	-	0.95
Sabine Royalty Trust	SBR		64.98	14.6	950	70.00	-	0.93
Cross Timbers Royalty Trust	CRT		41.66	6.0	250	45.00	-	0.93
Dorchester Minerals, L.P.	DMLP	B	27.01	30.7	830	30.00	-	0.90
	<i>Total or Median</i>				4,270			0.93
<b>Bottom Line Cash Payers</b>								
Linn Energy, LLC	LINE		38.27	163.0	6,240	34.00	0.32	1.09
Legacy Reserves L.P.	LGCY		30.56	43.5	1,330	28.00	0.31	1.06
Hugoton Royalty Trust	HGT	B	22.93	40.0	920	22.00	-	1.04
Vanguard Natural Resources, LLC	VNR		28.44	34.2	970	27.00	0.42	1.03
San Juan Basin Royalty Trust	SJT		23.90	46.6	1,110	25.00	-	0.96
Encore Energy Partners, L.P.	ENP		21.31	45.0	960	23.00	0.22	0.94
Pengrowth Energy Corporation	PGH		12.78	326.0	4,170	14.00	0.27	0.94
Enerplus Corporation	ERF	B	31.60	179.5	5,670	37.00	0.19	0.88
Mesa Royalty Trust	MTR		45.25	1.9	84	53.00	-	0.85
	<i>Total or Median</i>				21,450			0.96
B=Buy; CB=Contrarian Buy, Stock Price apparently in downtrend compared to 200-day average.								
McDep Ratio = Market cap and Debt to present value of oil and gas and other businesses								
Present Value presumes long-term prices of \$100 a barrel for oil and \$8 a million btu for natural gas.								



# Income and Small Cap Weekly

Analysis of Oil & Gas Stocks

June 3, 2011

Table ISC-3								
McDep Income and Small Cap Energy Portfolio								
Value Multiples - Rank by EV/Ebitda								
			Price (\$/sh)	Revenue	Dist/ Equity	Adjstd Resrvs/ Prod	PV/ Ebitda	EV/ Ebitda
	Symbol/ Rating		2-Jun 2011	Royalty (%)	Ebitda	NTM	NTM	NTM
<b>Small Cap Independent Producers</b>								
Range Resources	RRC	B	53.97		-	17.4	16.0	14.7
Birchcliff Energy Ltd.	BIREF	B	13.63		-	20.1	13.8	12.1
Peyto Exploration and Development Corp	PEYUF		21.99		0.39	17.2	12.5	11.6
Ultra Petroleum	UPL		47.65		-	27.2	13.5	11.1
Berry Petroleum Company	BRY		50.55		-	12.0	9.4	8.4
Denbury Resources Inc.	DNR		20.90		-	13.6	9.0	7.8
Petrohawk Energy Corporation	HK	B	25.97		-	6.0	8.9	7.3
Whiting Petroleum Corporation	WLL	B	64.50		-	9.6	8.8	6.6
Cimarex Energy Company	XEC	B	93.74		-	7.2	7.9	6.3
	<i>Median</i>					13.6	9.4	8.4
<b>Top Line Cash Payers</b>								
Cross Timbers Royalty Trust	CRT		41.66	80	0.97	14.5	14.1	13.1
Sabine Royalty Trust	SBR		64.98	100	1.00	7.0	14.1	13.0
Dorchester Minerals, L.P.	DMLP	B	27.01	77	0.84	7.1	13.8	12.4
Permian Basin RT	PBT		20.83	32	0.94	15.6	11.7	11.1
Freehold Royalties Ltd.	FRHLF		21.77	71	0.78	6.4	10.0	9.9
	<i>Median</i>					7.1	13.8	12.4
<b>Bottom Line Cash Payers</b>								
Hugoton Royalty Trust	HGT	B	22.93		0.87	13.6	13.0	13.6
San Juan Basin Royalty Trust	SJT		23.90		0.85	9.1	14.1	13.5
Linn Energy, LLC	LINE		38.27		0.90	17.5	11.6	12.5
Vanguard Natural Resources, LLC	VNR		28.44		0.99	13.2	11.7	12.1
Mesa Royalty Trust	MTR		45.25		0.81	14.3	14.2	12.1
Legacy Reserves L.P.	LGCY		30.56		0.74	12.0	9.8	10.4
Encore Energy Partners, L.P.	ENP		21.31		0.86	13.0	10.1	9.5
Enerplus Corporation	ERF	B	31.60		0.57	8.4	9.4	8.3
Pengrowth Energy Corporation	PGH		12.78		0.54	9.2	8.9	8.3
	<i>Median</i>					13.0	11.6	12.1
B=Buy; CB=Contrarian Buy, Stock Price apparently in downtrend compared to 200-day average.								
EV = Enterprise Value = Market Cap and Debt; Ebitda = Earnings before interest, tax, depreciation and amortization; NTM = Next Twelve Months Ended March 31, 2012; P/E = Stock Price to Earnings; PV = Present Value of oil and gas and other businesses								
Top Line Cash Payers defined as those having Revenue Royalty (see fifth column from right).								



# Income and Small Cap Weekly

Analysis of Oil & Gas Stocks

June 3, 2011

Table ISC-4									
Oil and Gas Income and Small Cap Stocks									
Rank by Enterprise Value to 200 Day Average									
			Price (\$/sh)	Enterprise Value/					
	Symbol/ Rating		2-Jun 2011	52Wk High	52Wk Low	50 Day Avg.	200 Day Avg.	McDep Ratio	
<b>Small Cap Independent Producers</b>									
	BIRCLIFF Energy Ltd.	BIREF	B	13.63	0.95	1.56	1.04	1.22	0.87
	Peyto Exploration and Development C	PEYUF		21.99	0.98	1.59	1.05	1.19	0.93
	Petrohawk Energy Corporation	HK	B	25.97	0.96	1.43	1.03	1.18	0.83
	Range Resources	RRC	B	53.97	0.92	1.50	0.99	1.15	0.92
	Berry Petroleum Company	BRY		50.55	0.96	1.52	1.01	1.13	0.89
	Whiting Petroleum Corporation	WLL	B	64.50	0.87	1.55	0.95	1.09	0.75
	Denbury Resources Inc.	DNR		20.90	0.84	1.35	0.95	1.05	0.87
	Ultra Petroleum	UPL		47.65	0.91	1.22	1.00	1.04	0.83
	Cimarex Energy Company	XEC	B	93.74	0.81	1.43	0.91	1.03	0.80
	<i>Median</i>				<i>0.92</i>	<i>1.50</i>	<i>1.00</i>	<i>1.13</i>	<i>0.87</i>
<b>Top Line Cash Payers</b>									
	Sabine Royalty Trust	SBR		64.98	0.92	1.41	1.00	1.09	0.93
	Freehold Royalties Ltd.	FRHLF		21.77	0.90	1.45	0.95	1.07	0.99
	Cross Timbers Royalty Trust	CRT		41.66	0.86	1.26	0.95	1.01	0.93
	Dorchester Minerals, L.P.	DMLP	B	27.01	0.90	1.14	0.96	0.99	0.90
	Permian Basin RT	PBT		20.83	0.88	1.23	0.97	0.99	0.95
	<i>Median</i>				<i>0.90</i>	<i>1.26</i>	<i>0.96</i>	<i>1.01</i>	<i>0.93</i>
<b>Bottom Line Cash Payers</b>									
	Hugoton RoyaltyTrust	HGT	B	22.93	0.93	1.27	0.99	1.08	1.04
	Enerplus Corporation	ERF	B	31.60	0.96	1.36	1.00	1.06	0.88
	Legacy Reserves L.P.	LGCY		30.56	0.93	1.29	0.98	1.06	1.06
	Linn Energy, LLC	LINE		38.27	0.96	1.35	0.99	1.04	1.09
	Pengrowth Energy Corporation	PGH		12.78	0.91	1.28	0.96	1.02	0.94
	Encore Energy Partners, L.P.	ENP		21.31	0.87	1.29	0.93	1.00	0.94
	Vanguard Natural Resources, LLC	VNR		28.44	0.90	1.24	0.95	1.00	1.03
	San Juan Basin Royalty Trust	SJT		23.90	0.84	1.15	0.95	0.98	0.96
	Mesa RoyaltyTrust	MTR		45.25	0.88	1.14	0.95	0.95	0.85
	<i>Median</i>				<i>0.91</i>	<i>1.28</i>	<i>0.96</i>	<i>1.02</i>	<i>0.96</i>

CB=Contrarian Buy, Stock Price apparently in downtrend compared to 200-day average.

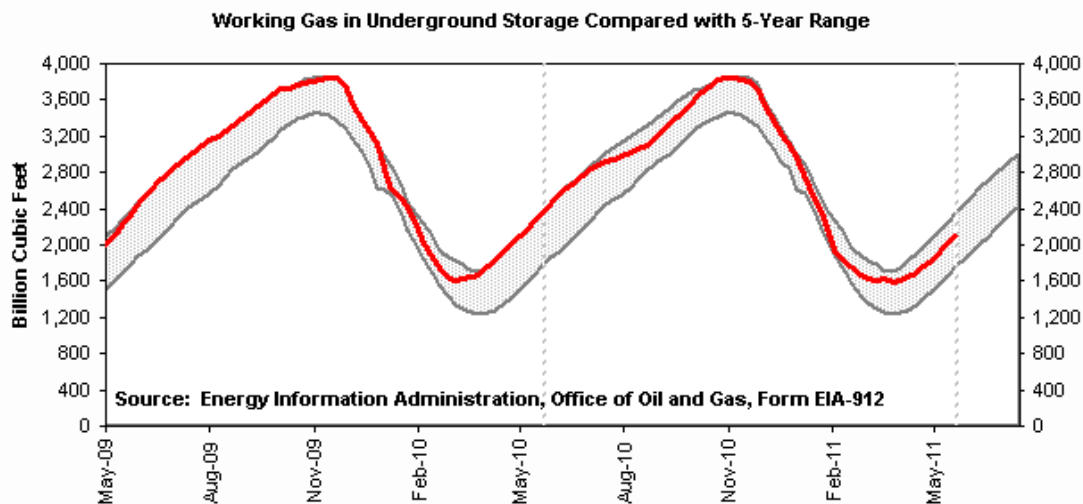




# Income and Small Cap Weekly

Analysis of Oil & Gas Stocks

June 3, 2011



**Disclaimer:** This analysis was prepared by Kurt Wulff, Manager of McDep LLC. The firm used sources and data believed to be reliable, but makes no representation as to their accuracy or completeness. This analysis is intended for informational purposes and is not a solicitation to buy or sell a security. Past performance is no guarantee of future results.

McDep or its employees may take positions in stocks the firm covers for research purposes. No trades in a subject stock shall be made within a week before or after a change in recommendation.

**Certification:** I, Kurt H. Wulff, certify that the views expressed in this research analysis accurately reflect my personal views about the subject securities and issuers. No part of my compensation was, is, or will be directly or indirectly related to the specific recommendations or views contained in this research analysis.

**Research Methodology/Ratings Description:** McDep LLC is an independent research originator focused on oil and gas stocks exclusively. The firm applies the thirty years of experience of its analyst to estimate a present value of the oil and gas resources and other businesses of covered companies. That value is compared with a company's stock market capitalization and debt. Stocks with low market cap and debt relative to present value tend to outperform stocks with high market cap and debt relative to present value. Buy recommendations are expected to deliver a total return better than 7% per year above inflation. Hold recommendations assume the attributes of the underlying business are reflected in the current price of the stock. Sell recommendations are expected to deliver a total return less than inflation.