



Income and Small Cap Weekly

Analysis of Oil & Gas Stocks

October 20, 2011

PDC Energy (PETD) a.k.a. Petroleum Development Corp Returning to Appalachian Roots

Summary and Recommendation

We add small cap independent producer **PDC Energy (PETD)** to our research coverage on the basis of rapid growth not fully reflected in a low McDep Ratio of 0.82. Estimated Net Present Value (NPV) of \$32 a share recognizes 24% volume growth in calendar year 2011, but not all of the additional 15-25% growth in 2012 according to management's early estimate. Recently discovered shale oil potential in the Niobrara formation on the company's producing acreage in the northeast portion of Colorado's Wattenberg field appears especially important not only for volume growth, but also for high profitability at current oil price (see slide [Core Horizontal Niobrara](#) on page 2). Having started in West Virginia as Petroleum Development before rebranding itself as PDC Energy in Denver, the venerable producer returns to Appalachia where it has two promising growth areas that were not apparent previously. First, it is drilling horizontal Marcellus shale natural gas wells on long-held lands further complemented by a \$76 million acquisition that closed on October 3 (see slide [Marcellus Focus Area](#) on page 2). Second, the first horizontal well is to be drilled soon on recently acquired lands in the liquids prone portion of the Utica shale in southeast Ohio (see slide [Utica Development and Activity](#) on page 3). Natural gas contributes most to NPV while oil contributes the most to projected cash flow (see tables [Functional Cash Flow and Present Value](#) on page 3 and [Next Twelve Months Operating and Financial Estimates](#) on page 4). PETD's rank by McDep Ratio is corroborated by its similar rank by unlevered cash flow multiple (EV/Ebitda) of 7.8 times (see [Tables 1-4](#) on pages 5-8). High debt after recent acquisitions is likely to be reduced with the proceeds of planned divestitures.

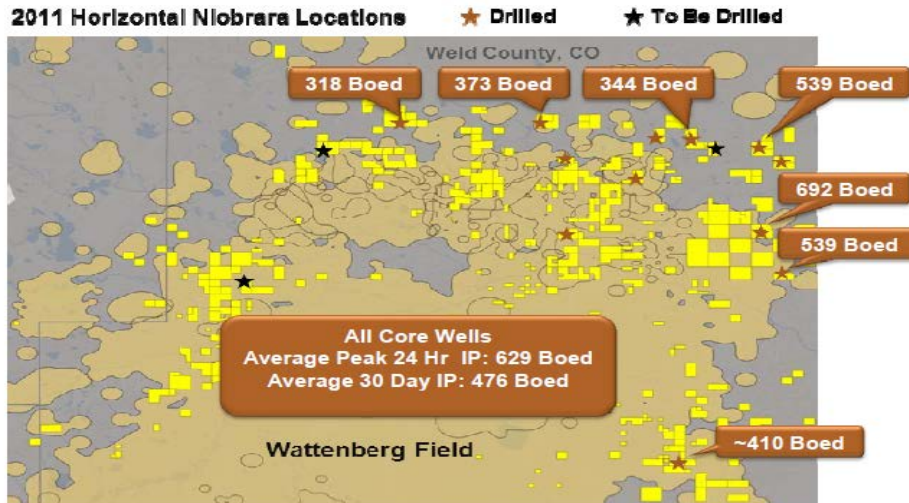
Bart Brookman, Lance Lauck and their colleagues laid out PETD's plans at an analyst meeting and field trip in West Virginia on October 19. Our interest in the stock, which was in our coverage 25 years ago, was rekindled when we had a recent chance encounter with newly named Chief Executive Jim Trimble, whom we respect from the days we knew him at Appalachian producer Cabot Oil and Gas. Mr. Trimble's knowledge is backed up by that of PDC Energy Appalachian expert, Richard Hoffman. Coincidentally, we had a profitable experience with him that included a tour of the very same area around Clarksburg some 15 years ago when Mr. Hoffman was president of small cap Appalachian producer Alamco. As a result, we like the stock, we like the management and we look forward to seeing the reward of growth unfold subject to the usual risks of investing in small cap companies.

Kurt H. Wulff, CFA

Wattenberg Core Horizontal Niobrara



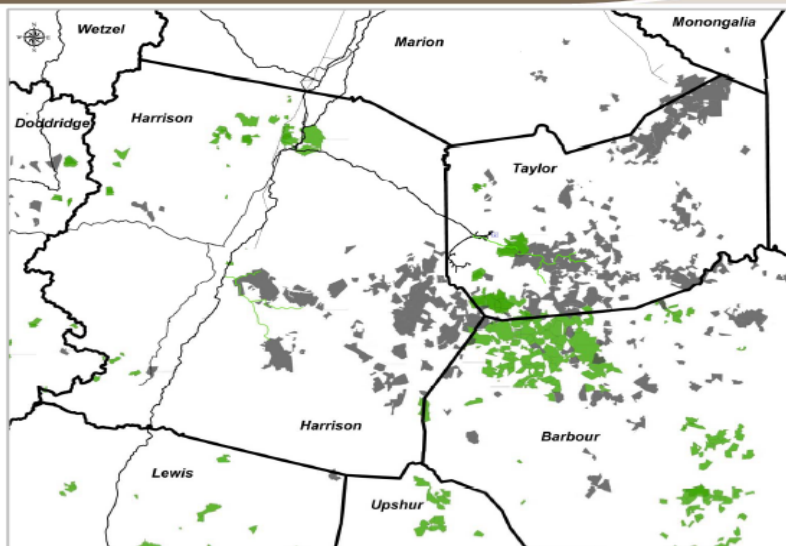
Average 30 Day IP



10/19/2011

31

Marcellus Focus Area



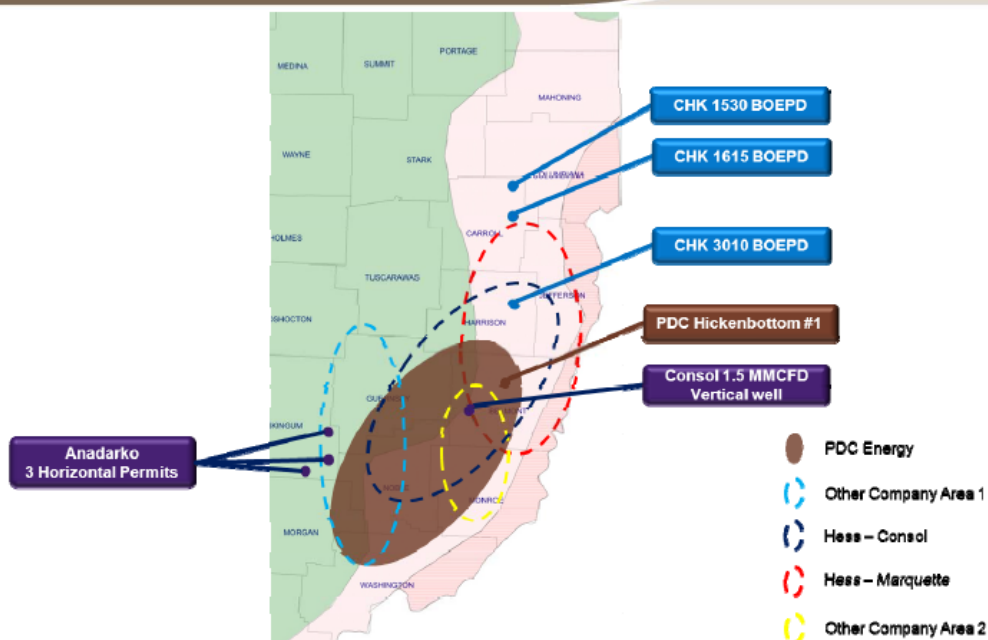
Approximate Focus Area Locations	
PDCM	172
Seneca-Upshur	185
Total	357

Outside of Focus Area	243
Total	600

10/19/2011

49

Utica Development and Activity



10/19/2011

42

Petroleum Development Corporation (Doing Business as PDC Energy)					
Functional Cash Flow and Present Value					
	<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	48	14.7	16.7	800	60%
Oil	93	3.3	5.8	540	40%
	141	7.7	9.5	1,340	100%
Debt (US\$mm)					580
Net Present Value (US\$mm)					760
Shares (mm)					24
Net Present Value - Standard Estimate (US\$/sh)					32
NPV Approximation by Cash Flow Multiple Depending on Reserve Life (US\$/sh)					34



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Petroleum Development Corporation (Doing Business as PDC Energy)									
Next Twelve Months Operating and Financial Estimates									
	Q1	Q2	Q3E	Q4E	Year	Q1E	Q2E	Q3E	Next Twelve Months
	3/31/11	6/30/11	9/30/11	12/31/11	2011E	3/31/12	6/30/12	9/30/12	9/30/12
Volume									
Natural Gas (mmcf/d)	86	83	88	88	86	88	88	88	88
Days	90	91	92	92	365	91	91	92	366
Oil (mbd)	5.9	6.3	7.0	8.2	6.9	8.2	8.2	8.2	8.2
Total (mb)	1,823	1,829	1,993	2,104	7,749	2,081	2,081	2,104	8,369
Total (mbd)	20.3	20.1	21.7	22.9	21.2	22.9	22.9	22.9	22.9
Price									
Henry Hub (\$/mmbtu)	4.11	4.32	4.19	3.77	4.10	4.04	4.04	4.15	4.00
Differential (\$/mmbtu)	1.03	0.79	0.76	0.69	0.82	0.74	0.74	0.76	0.73
Company (\$/mcf)	3.08	3.53	3.43	3.09	3.28	3.30	3.31	3.39	3.27
WTI Cushing (\$/bbl)	94.10	102.55	89.76	85.90	93.08	87.03	87.34	87.65	86.98
Differential	19.75	23.27	20.37	19.49	21.26	19.75	19.82	19.89	19.74
Company	74.35	79.28	69.39	66.41	71.82	67.28	67.52	67.76	67.24
Total (\$/bbl)	34.78	39.51	36.35	35.69	36.55	36.83	36.93	37.35	36.70
Revenue (\$mm)									
Natural Gas	24	27	28	25	103	26	26	27	105
Oil	40	46	45	50	180	50	50	51	202
Total	63	72	72	75	283	77	77	79	307
Expense									
Lease operating	21	20							-
General and administrative	14	20							-
Total	35	39	39	41	154	42	42	43	167
Ebitda	29	33	33	34	130	35	35	36	141
Exploration	2	2	3	3	10	3	3	3	12
Deprec., Deplet., & Amort.	32	33	33	33	131	33	33	33	131
Other, incl hedge	19	(23)	(15)	(15)	(35)	(15)	(15)	(15)	(60)
Ebit	(25)	22	12	14	23	14	14	15	58
Interest	9	9	9	10	37	10	10	10	40
Ebt	(34)	13	3	4	(14)	4	4	5	18
Income Tax	(14)	3	1	1	(8)	2	2	2	6
Net Income (\$mm)	(20)	9	2	2	(6)	3	3	3	12
Per Share (\$)	(0.85)	0.39	0.09	0.10	(0.27)	0.12	0.12	0.14	0.49
Shares (millions)									
Lease operating (\$/bbl)	11.52	10.77	-	-	-	-	-	-	-
General and admin (\$/bbl)	7.62	10.66	-	-	-	-	-	-	-
Deprec., D. & A (\$/bbl)	17.77	17.88	16.40	15.54	16.84	15.71	15.71	15.54	15.63
Ebitda Margin	45%	46%	46%	46%	46%	46%	46%	46%	46%
Tax rate	41%	27%	35%	35%	57%	35%	35%	35%	35%



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Table ISC-1											
McDep Income and Small Cap Energy Portfolio											
Debt, Segments, Cash Flow, Income and McDep Ratio											
			Price			Enterprise		PV(%)			
Symbol/Rating		(US\$/sh)	EV/	Market	Value	Nat	Oil	Ebitda	NTM	Yield	McDep
B = Buy	19-Oct	2011	Cap	(\$mm)	Gas			NTM	(\$/un)	(%)	Ratio
CB (see below)											
Small Cap Independent Producers											
Range Resources	RRC	B	71.28	1.17	13,310	69	31	17.5	0.16	0.2	1.02
Birchcliff Energy Ltd.	BIREF	B	13.83	1.21	2,190	56	44	13.3	-	-	0.88
Peyto Exploration and Developmen	PEYUF		20.73	1.18	3,260	76	24	10.1	0.74	3.5	0.88
PDC Energy	PETD		22.14	2.11	1,100	60	40	7.8	-	-	0.82
Berry Petroleum Company	BRY		42.62	1.64	3,820	23	77	7.5	0.30	0.7	0.72
Denbury Resources Inc.	DNR		14.81	1.39	8,340	5	95	6.9	-	-	0.61
Cimarex Energy Company	XEC	CB	63.28	1.13	6,180	46	54	5.1	0.40	0.6	0.56
Whiting Petroleum Corporation	WLL	CB	43.92	1.31	6,830	11	89	4.6	-	-	0.55
<i>Total or Median</i>					45,000			7.6			0.77
Top Line Cash Payers											
Cross Timbers Royalty Trust	CRT		46.88	1.00	280	87	13		2.90	6.2	1.04
Sabine Royalty Trust	SBR		64.70	1.00	940	51	49		4.12	6.4	0.92
Permian Basin RT	PBT		19.71	1.00	920	42	58		1.43	7.3	0.90
Dorchester Minerals, L.P.	DMLP	CB	25.17	1.00	770	61	39		1.63	6.5	0.84
Freehold Royalties Ltd.	FRHLF		17.51	1.06	1,100	18	82		1.66	9.5	0.81
<i>Total or Median</i>					4,000					6.5	0.90
Bottom Line Cash Payers											
Linn Energy, LLC	LINE		37.59	1.47	9,720	31	69	16.0	2.76	7.3	1.07
Vanguard Natural Resources, LLC	VNR		27.29	1.46	2,040	23	77	11.1	2.30	8.4	1.01
Hugoton RoyaltyTrust	HGT		21.50	1.00	860	88	13	15.1	1.28	6.0	0.98
San Juan Basin Royalty Trust	SJT	CB	23.82	1.00	1,110	100	-	14.2	1.32	5.5	0.95
Legacy Reserves L.P.	LGCY		27.91	1.47	1,780	21	79	9.7	2.16	7.7	0.95
Mesa RoyaltyTrust	MTR		42.40	1.00	79	75	25	12.0	2.98	7.0	0.80
Enerplus Corporation	ERF	CB	26.63	1.23	5,900	30	70	7.9	2.14	8.0	0.76
<i>Total or Median</i>					21,500			12.0		7.3	0.95
Composite											
<i>Enterprise Value Weighting</i>					70,500	39	61				0.78
<i>Equal Weighting</i>						48	52				0.85
<i>Equal Weighted Buys</i>						47	53				0.80

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 September 30, 2012. Enterprise Value = Market Cap and Debt.



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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>19-Oct</i>	<i>Shares</i>	<i>Cap</i>	<i>Value</i>	<i>Present</i>	<i>McDep</i>
	<i>Rating</i>		<i>2011</i>	<i>(mm)</i>	<i>(\$mm)</i>	<i>(\$/un)</i>	<i>Value</i>	<i>Ratio</i>
Small Cap Independent Producers								
Range Resources	RRC	B	71.28	159.0	11,330	70.00	0.15	1.02
Birchcliff Energy Ltd.	BIREF	B	13.83	131.0	1,810	16.00	0.15	0.88
Peyto Exploration and Development Cor	PEYUF		20.73	133.1	2,760	24.00	0.14	0.88
PDC Energy	PETD		22.14	23.7	520	32.00	0.43	0.82
Berry Petroleum Company	BRY		42.62	54.7	2,330	70.00	0.28	0.72
Denbury Resources Inc.	DNR		14.81	404.0	5,980	28.00	0.17	0.61
Cimarex Energy Company	XEC	CB	63.28	86.1	5,450	120.00	0.07	0.56
Whiting Petroleum Corporation	WLL	CB	43.92	119.0	5,230	90.00	0.13	0.55
<i>Total or Median</i>					<i>35,410</i>		<i>0.15</i>	<i>0.77</i>
Top Line Cash Payers								
Cross Timbers Royalty Trust	CRT		46.88	6.0	280	45.00	-	1.04
Sabine Royalty Trust	SBR		64.70	14.6	940	70.00	-	0.92
Permian Basin RT	PBT		19.71	46.6	920	22.00	-	0.90
Dorchester Minerals, L.P.	DMLP	CB	25.17	30.7	770	30.00	-	0.84
Freehold Royalties Ltd.	FRHLF		17.51	59.1	1,030	22.00	0.05	0.81
<i>Total or Median</i>					<i>3,940</i>			<i>0.90</i>
Bottom Line Cash Payers								
Linn Energy, LLC	LINE		37.59	176.0	6,620	34.00	0.34	1.07
Vanguard Natural Resources, LLC	VNR		27.29	51.1	1,400	27.00	0.32	1.01
Hugoton Royalty Trust	HGT		21.50	40.0	860	22.00	-	0.98
San Juan Basin Royalty Trust	SJT	CB	23.82	46.6	1,110	25.00	-	0.95
Legacy Reserves L.P.	LGCY		27.91	43.6	1,220	30.00	0.30	0.95
Mesa Royalty Trust	MTR		42.40	1.9	79	53.00	-	0.80
Enerplus Corporation	ERF	CB	26.63	179.6	4,780	37.00	0.14	0.76
<i>Total or Median</i>					<i>16,070</i>			<i>0.95</i>
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.								



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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		19-Oct 2011	Royalty (%)	Ebitda	NTM	NTM	NTM
Small Cap Independent Producers								
Range Resources	RRC	B	71.28		-	14.4	17.2	17.5
Birchcliff Energy Ltd.	BIREF	B	13.83		-	20.3	15.1	13.3
Peyto Exploration and Development Corp	PEYUF		20.73		0.35	13.6	11.4	10.1
PDC Energy	PETD		22.14		-	7.7	9.5	7.8
Berry Petroleum Company	BRY		42.62		-	11.9	10.4	7.5
Denbury Resources Inc.	DNR		14.81		-	13.4	11.2	6.9
Cimarex Energy Company	XEC	CB	63.28		-	6.8	9.1	5.1
Whiting Petroleum Corporation	WLL	CB	43.92		-	8.7	8.3	4.6
	<i>Median</i>					<i>12.6</i>	<i>10.8</i>	<i>7.6</i>
Top Line Cash Payers								
Sabine Royalty Trust	SBR		64.70	100	1.00	7.4	17.0	15.7
Cross Timbers Royalty Trust	CRT		46.88	80	0.97	13.9	15.0	15.6
Permian Basin RT	PBT		19.71	32	0.98	16.5	15.1	13.5
Dorchester Minerals, L.P.	DMLP	CB	25.17	77	0.84	6.6	15.5	13.0
Freehold Royalties Ltd.	FRHLF		17.51	71	0.94	6.6	12.5	10.1
	<i>Median</i>					<i>7.4</i>	<i>15.1</i>	<i>13.5</i>
Bottom Line Cash Payers								
Linn Energy, LLC	LINE		37.59		1.22	17.1	15.0	16.0
Hugoton RoyaltyTrust	HGT		21.50		0.90	13.9	15.5	15.1
San Juan Basin Royalty Trust	SJT	CB	23.82		0.78	8.6	14.9	14.2
Mesa RoyaltyTrust	MTR		42.40		0.84	14.5	14.9	12.0
Vanguard Natural Resources, LLC	VNR		27.29		0.93	8.8	11.0	11.1
Legacy Reserves L.P.	LGCY		27.91		0.74	10.2	10.2	9.7
Enerplus Corporation	ERF	CB	26.63		0.60	8.3	10.4	7.9
	<i>Median</i>					<i>10.2</i>	<i>14.9</i>	<i>12.0</i>
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 September 30, 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).								



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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		19-Oct 2011	52Wk High	52Wk Low	50 Day Avg.	200 Day Avg.	McDep Ratio	
Small Cap Independent Producers									
	Range Resources	RRC	B	71.28	0.93	1.76	1.13	1.24	1.02
	Birchcliff Energy Ltd.	BIREF	B	13.83	0.93	1.58	1.09	1.09	0.88
	Peyto Exploration and Development C	PEYUF		20.73	0.84	1.32	0.99	0.99	0.88
	Berry Petroleum Company	BRY		42.62	0.79	1.21	0.98	0.93	0.72
	Denbury Resources Inc.	DNR		14.81	0.65	1.29	1.04	0.82	0.61
	Whiting Petroleum Corporation	WLL	CB	43.92	0.64	1.36	1.02	0.81	0.55
	PDC Energy	PETD		22.14	0.63	1.17	0.99	0.78	0.82
	Cimarex Energy Company	XEC	CB	63.28	0.57	1.21	1.00	0.73	0.56
	<i>Median</i>				0.72	1.31	1.01	0.87	0.77
Top Line Cash Payers									
	Cross Timbers Royalty Trust	CRT		46.88	0.97	1.28	1.05	1.06	1.04
	Sabine Royalty Trust	SBR		64.70	0.92	1.36	1.05	1.02	0.92
	Dorchester Minerals, L.P.	DMLP	CB	25.17	0.84	1.21	1.04	0.94	0.84
	Permian Basin RT	PBT		19.71	0.83	1.09	0.93	0.92	0.90
	Freehold Royalties Ltd.	FRHLF		17.51	0.73	1.26	1.00	0.85	0.81
	<i>Median</i>				0.84	1.26	1.04	0.94	0.90
Bottom Line Cash Payers									
	Linn Energy, LLC	LINE		37.59	0.94	1.13	1.02	0.99	1.07
	San Juan Basin Royalty Trust	SJT	CB	23.82	0.85	1.17	1.02	0.98	0.95
	Hugoton RoyaltyTrust	HGT		21.50	0.87	1.12	0.98	0.97	0.98
	Legacy Reserves L.P.	LGCY		27.91	0.88	1.17	1.03	0.97	0.95
	Vanguard Natural Resources, LLC	VNR		27.29	0.86	1.16	1.01	0.95	1.01
	Mesa RoyaltyTrust	MTR		42.40	0.83	1.09	0.96	0.92	0.80
	Enerplus Corporation	ERF	CB	26.63	0.83	1.18	1.00	0.90	0.76
	<i>Median</i>				0.86	1.16	1.01	0.97	0.95

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



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<i>Symbol</i>	PETD	<i>Ebitda Next Twelve Months ending 9/30/12 (US\$mm)</i>	141
<i>Rating</i>		<i>North American Natural Gas/Ebitda (%)</i>	34
<i>Price (\$/sh)</i>	22.14	<i>Natural Gas and Oil Production/Ebitda (%)</i>	100
<i>Pricing Date</i>	10/19/11	<i>Adjusted Reserves/Production NTM</i>	7.7
<i>Shares (mm)</i>	24	<i>EV/Ebitda</i>	7.8
<i>Market Capitalization (\$mm)</i>	520	<i>PV/Ebitda</i>	9.5
<i>Debt (\$mm)</i>	580	<i>Undeveloped Reserves (%)</i>	57
<i>Enterprise Value (EV) (\$mm)</i>	1,100	<i>Natural Gas and Oil Ebitda (\$/boe)</i>	16.80
<i>Present Value (PV) (\$mm)</i>	1,330	<i>Present Value Proven Reserves(\$/boe)</i>	9.00
<i>Net Present Value (\$/share)</i>	32	<i>Oil and Gas Ebitda Margin (%)</i>	46
<i>Debt/Present Value</i>	0.43	<i>Earnings Next Twelve Months (US\$/sh)</i>	0.49
<i>McDep Ratio - EV/PV</i>	0.82	<i>Price/Earnings Next Twelve Months</i>	46
<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 natural gas and oil.			
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.			

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.

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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 forty 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.