

Top Line Premium and Bottom Line Upside CRT, DMLP, PBT, SBR, SJT

	Symbol/Rating	Price		Market	Enterprise	EV/ Market	EV/ Cap	PV/ Ebitda	Oil Prod'n/ PV	Dist. Yield	McDep Ratio
		(US\$/sh)	19-Dec								
			2017	Cap	Value	Cap	NTM	Ebitda	(%)	(%)	(EV/PV)
				(US\$m)	(\$mm)						
San Juan Basin Royalty Trust	SJT	7.80		360	360	1.00	14.0	14.4	-	7.1	0.98
Permian Basin RT	PBT	8.83		410	410	1.00	12.9	16.1	78	7.3	0.80
Sabine Royalty Trust	SBR	43.90		640	640	1.00	17.2	23.5	66	5.8	0.73
Dorchester Minerals, L.P.	DMLP B	14.45		470	470	1.00	9.7	16.1	77	9.9	0.60
Cross Timbers Royalty Trust	CRT B	14.13		90	90	1.00	9.7	19.8	28	8.0	0.49
<i>Total or Median</i>				2,000	2,000	1.00	12.9	16.1	66	7.3	0.73

Summary and Recommendation

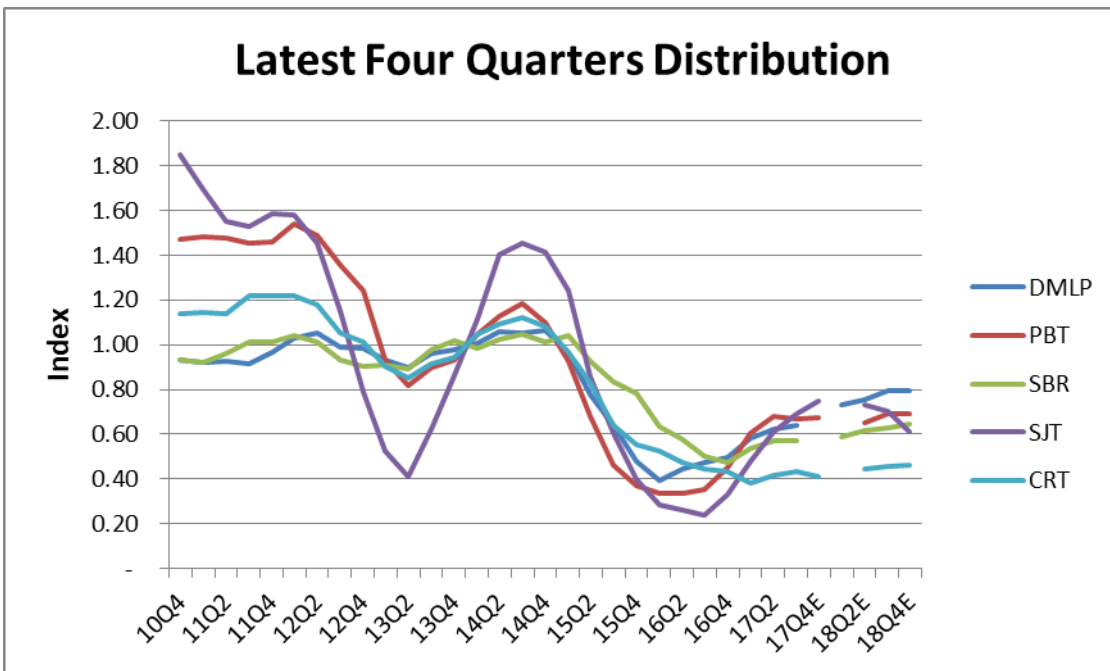
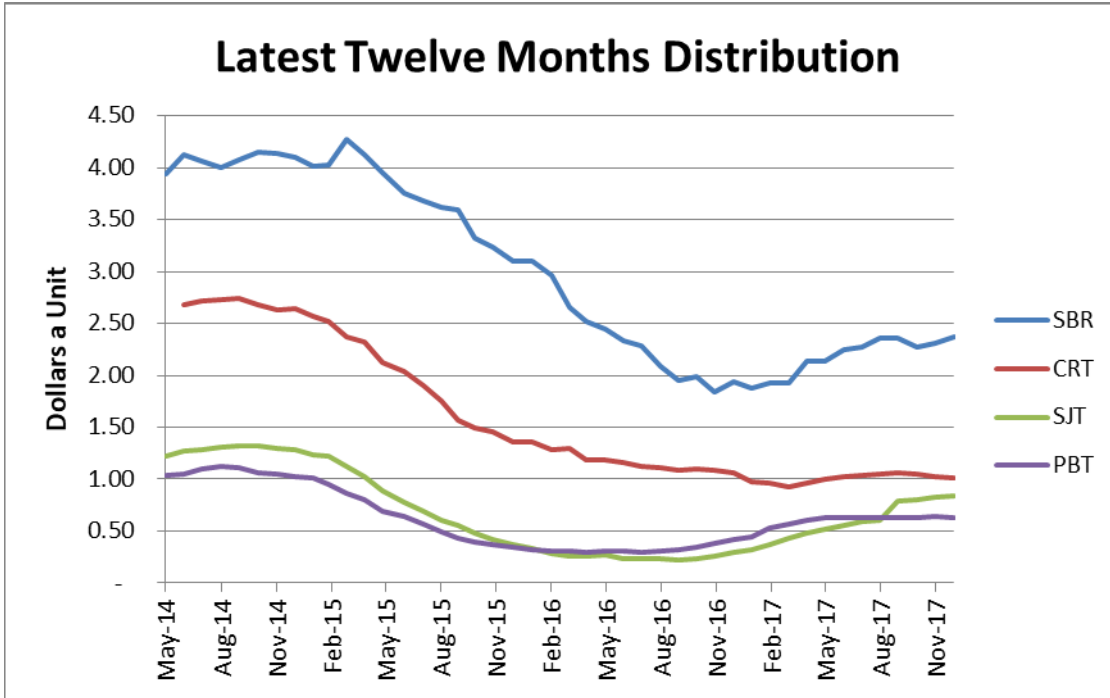
Higher economic growth accompanying landmark tax cuts may propel cash distributions higher for McDep Income Payers including Buy recommendations **Dorchester Minerals, L.P. (DMLP)** and **Cross Timbers Royalty Trust (CRT)** (see charts [Distribution](#) on page 2). The five issues in our coverage would pay a median 7.3% in tax advantaged cash distributions over the next twelve months, we estimate. Top Line distributions would range from 72% to 83% of oil and gas revenue while Bottom Line distributions would range from 0 to 43% (see table [Distribution % of Revenue](#) on page 3). Top Line royalty arrangements attract premium valuation and are the most prized for four of the five payers (see table [Royalty Structure](#) on page 3). Bottom Line net profits arrangements have more upside from rising commodity price as well as temporary downside when operators expand investment. The interaction among revenues, deductions and distributions are detailed in quarterly models (see tables [Operating and Financial Estimates](#) for five stocks on pages 4-8). Latest monthly results for three stocks disclosed on December 18 fully define quarterly and yearly results for **Permian Basin Royalty Trust (PBT)** and partially for **San Juan Basin Royalty Trust (SJT)** and CRT. Additional models capitalize cash flow at higher multiples for Top Line and for natural gas to derive Net Present Value (NPV) (see tables [Present Value](#) on pages 9-10). Necessarily, estimates of NPV are more subjective than of distribution yield. Testing different assumptions, we find that the ranking by McDep Ratio remains intact under a range of approximations. The distinguishing feature of future performance is likely to be relative volume trend after 2018. For example, we give little credit for any success SJT's new partner, private company Hilcorp, may have in implementing ambitious plans for speeding development. The fracking revolution is still in the early stages in the San Juan Basin. Most of the value in CRT is also in the San Juan Basin. Nor can we know how successful the fracking boom in the Permian Basin will be for **Sabine Royalty Trust (SBR)**, PBT and DMLP. As a result, we think all five stocks can be useful contributors to a diversified portfolio seeking natural resource growth, inflation protection and high tax-advantaged income with low, no-debt financial risk (see [Tables 1-4](#) on pages 11-14).

Kurt H. Wulff, CFA



Industry Idea

Analysis of Oil and Gas Stocks
December 20, 2017



McDep Income Payers						
Distribution % of Revenue, Twelve Months Ended December 31, 2018						
		<i>CRT</i>	<i>DMLP</i>	<i>PBT</i>	<i>SBR</i>	<i>SJT</i>
Top Line						
	Revenue	9.4	50.4	16.0	44.6	
	Tax			1.6	5.0	
	Royalty Interest Owner			0.7		
	Administration			0.8	2.4	
	Distribution	6.8	42.4	12.8	37.2	
	Distribution % of Revenue	72%	84%	80%	83%	
Bottom Line						
	Revenue	6.9	17.8	46.0		59.8
	Operating and tax			19.5		23.6
	Capital			2.5		0.0
	Working Interest Owner			6.0		9.0
	Administration			0.8		1.2
	Distribution	0.0	3.8	17.2		25.9
	Distribution % of Revenue	0%	21%	37%		43%
Combined						
	Distribution % of Revenue	41%	68%	49%	83%	43%

Income Payer Royalty Structure					
Percent of Net Present Value					
		<i>Top Line</i>		<i>Bottom Line</i>	
		<i>Nat Gas</i>	<i>Oil</i>	<i>Nat Gas</i>	<i>Oil</i>
Sabine Royalty Trust	SBR	34%	66%		
Dorchester Minerals, L.P.	DMLP	21%	71%	3%	5%
Cross Timbers RT	CRT	72%	17%		10%
Permian Basin RT	PBT	6%	41%	16%	37%
San Juan Basin RT	SJT			100%	



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Analysis of Oil and Gas Stocks
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Cross Timbers Royalty Trust										
Next Twelve Months Operating and Financial Performance										
	Q4	Year	Q3	Q4E	Year	Q1E	Q2E	Q3E	Q4E	Next Twelve Months
	12/31/16	2016	9/30/17	12/31/17	2017	3/31/18	6/30/18	9/30/18	12/31/18	12/31/18
Volume										
Natural Gas (bcf)	0.51	2.05	0.39	0.34	1.54	0.36	0.35	0.35	0.35	1.40
Natural Gas (mmcf/d)	5.5	5.6	4.3	3.7	4.2	3.9	3.9	3.8	3.8	3.8
Days	92	366	91	92	365	92	90	91	92	365
Oil (mb)	53	225	50	57	211	54	53	55	56	219
Oil (mbd)	0.58	0.61	0.54	0.62	0.58	0.59	0.60	0.60	0.61	0.60
Days	92	366	92	92	365	92	89	92	92	365
Total (bcf)	0.83	3.40	0.69	0.68	2.80	0.68	0.67	0.68	0.68	2.71
Price										
Natural Gas (HH lagged three months)										
Henry Hub (\$/mmbtu)	2.81	2.28	3.18	2.99	3.12	2.93	2.62	2.59	2.66	2.70
Differential (%)	(22)	(55)	(31)	(37)	(33)	(33)	(33)	(33)	(33)	(33)
CRT (\$/mcf)	3.44	3.54	4.16	4.11	4.14	3.90	3.48	3.44	3.53	3.59
Oil (\$/bbl) (WTI lagged two months)										
WTI Cushing	46.60	41.85	46.78	49.85	49.54	57.09	57.23	56.75	55.91	56.74
CRT	42.23	38.12	43.75	44.01	45.16	52.04	52.17	51.73	50.96	51.72
Total (\$/mcf)	4.82	4.66	5.52	5.72	5.67	6.17	5.97	5.97	5.97	6.02
Revenue (\$mm)										
Natural Gas	1.76	7.25	1.62	1.41	6.36	1.40	1.21	1.20	1.23	5.04
Oil	2.24	8.58	2.19	2.51	9.53	2.82	2.77	2.86	2.85	11.31
Total	3.99	15.83	3.81	3.92	15.89	4.22	3.98	4.06	4.08	16.34
Cost (\$mm)										
Tax, transport & other	0.56	2.33	0.58	0.59	2.43	0.63	0.60	0.61	0.61	2.45
Production	1.11	4.46	1.22	1.20	4.53	1.11	1.08	1.10	1.11	4.39
Total	1.67	6.79	1.80	1.79	6.96	1.74	1.67	1.71	1.72	6.84
Cash flow (\$mm)										
Development	0.24	1.00	0.33	0.33	1.40	0.33	0.33	0.33	0.33	1.32
Excess or other	(0.06)	(0.38)	(0.17)	(0.17)	0.11					-
Net proceeds (\$mm)										
	2.15	8.42	1.86	1.96	7.42	2.15	1.97	2.02	2.03	8.18
Royalty income (\$mm)										
Royalty/Net proceeds	88%	90%	90%	89%	90%	89%	89%	89%	89%	89%
Administration & reserve	0.11	1.19	0.15	0.13	0.63	0.13	0.13	0.13	0.13	0.52
Distributable income (\$mm)										
	1.91	6.36	1.53	1.62	6.06	1.79	1.63	1.67	1.68	6.78
Units (millions)										
	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Royalty income (\$/unit)										
Natural Gas										
TL TX	0.03	0.10	0.03							
TL OK	0.03	0.10	0.02							
TL NM	0.14	0.63	0.12							
BL TX	-	-	-							
BL OK	-	-	-							
Oil										
TL TX	0.08	0.28	0.07							
TL OK	0.03	0.12	0.03							
TL NM	0.01	0.03	0.01							
BL TX	-	-	-							
BL OK	-	-	-							
Administration	0.01	0.06	0.03							
Reserve and other	(0.00)	0.12	(0.00)							
Distribution (\$/unit)										
	0.32	1.06	0.25	0.27	1.01	0.30	0.27	0.28	0.28	1.13



Industry Idea

Analysis of Oil and Gas Stocks
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Dorchester Minerals, L.P.										
Operating and Financial Performance										
	Q4	Year	Q3	Q4E	Year	Q1E	Q2E	Q3E	Q4E	Next Twelve Months
	12/31/16	2016	9/30/17	12/13/17	2017	3/31/18	6/30/18	9/30/18	12/31/18	12/31/18
TOP LINE										
Volume										
Natural Gas (mmcf)	8.8	8.9	10.5	10.4	10.0	10.3	10.2	10.1	10.0	10.1
Oil (mbd)	1.84	1.69	2.25	2.25	2.13	2.25	2.25	2.25	2.25	2.25
Price										
Henry Hub (\$/mmbtu)	2.98	2.46	2.99	2.93	3.11	2.62	2.59	2.66	2.77	2.66
WTI Cushing (\$/bbl)	49.21	43.31	48.20	55.19	50.89	57.29	56.95	56.20	55.32	56.44
Natural Gas (\$/mcf)	2.39	2.05	2.63	2.57	2.84	2.30	2.27	2.33	2.43	2.33
Oil (\$/bbl)	41.84	37.18	43.32	49.61	45.10	51.56	51.26	50.58	49.79	50.80
Revenue (\$mm)										
Natural Gas	1.9	6.7	2.5	2.5	10.3	2.2	2.1	2.2	2.2	8.7
Oil	7.1	23.1	9.0	10.3	35.0	10.4	10.5	10.5	10.3	41.7
Total Revenue	9.0	29.8	11.5	12.7	45.3	12.6	12.6	12.6	12.5	50.4
Expense (allocated)	1.4	5.3	2.2	2.2	8.4	2.2	2.2	2.2	2.2	8.7
Ebitda	7.6	24.4	9.3	10.5	37.0	10.4	10.4	10.4	10.3	41.6
BOTTOM LINE										
Volume										
Natural Gas (mmcf)	8.8	7.7	6.9	6.9	6.7	6.9	6.9	6.9	6.9	6.9
Oil (mbd)	0.80	1.04	0.65	0.68	0.72	0.71	0.74	0.78	0.81	0.76
Price										
Natural Gas (\$/mcf)	2.10	2.08	2.34	2.29	2.53	2.05	2.02	2.08	2.16	2.08
Oil (\$/bbl)	38.74	34.64	41.51	47.53	42.02	45.83	45.56	44.96	44.26	45.15
Revenue (\$mm)										
Natural Gas	1.7	5.8	1.5	1.4	6.1	1.3	1.3	1.3	1.4	5.2
Oil	2.9	13.2	2.5	3.0	11.0	2.9	3.1	3.2	3.3	12.5
Total Revenue	4.6	19.0	4.0	4.4	17.2	4.2	4.3	4.5	4.7	17.8
Expense (allocated)										
Partnership	0.7	3.5	0.6	0.6	2.4	0.6	0.6	0.6	0.6	2.5
Net Profits Interests	2.3	9.5	2.0	2.2	8.6	2.1	2.2	2.3	2.3	8.9
Total Expense	3.0	12.9	2.5	2.8	11.0	2.7	2.8	2.9	3.0	11.4
Ebitda	1.6	6.1	1.4	1.7	6.2	1.5	1.6	1.6	1.7	6.4
Development (estimated)	0.8	4.8	0.6	0.7	2.4	0.6	0.7	0.7	0.7	2.7
NET INCOME										
Top Line	7.6	24.4	9.3	10.5	37.0	10.4	10.4	10.4	10.3	41.6
Bottom Line	0.8	1.4	0.8	1.0	3.8	0.9	0.9	1.0	1.0	3.7
Lease Bonus and residual	(0.0)	(3.0)	0.3		(0.6)					-
Deprec., Deplet., & Amort.	1.9	8.5	2.8	2.8	9.2	2.8	2.8	2.8	2.8	11.2
Total Net Income	6.4	20.2	7.1	8.7	32.1	8.5	8.6	8.6	8.5	34.2
Units (mm)	30.7	30.7	32.3	32.3	31.5	32.3	32.3	32.3	32.3	32.3
Net Income Per Unit (\$)	0.21	0.66	0.22	0.27	1.02	0.26	0.27	0.27	0.26	1.06
DISTRIBUTION										
Top Line Revenue	8.1	26.2	10.0	12.2	42.4	12.1	12.1	12.1	12.0	48.4
Bottom Line Net Revenue	0.9	5.6	1.1	1.5	4.2	1.5	1.5	1.6	1.6	6.2
Lease Bonus and Other	0.2	2.8	0.2	0.1	2.3	0.1	0.1	0.1	0.1	0.4
Cash Expense	(1.8)	(7.1)	(2.1)	(2.2)	(8.3)	(2.2)	(2.2)	(2.2)	(2.2)	(8.8)
Distribution	7.4	27.5	9.2	11.7	40.7	11.5	11.5	11.6	11.6	46.2
Distribution Per Unit (\$)	0.24	0.90	0.28	0.36	1.28	0.36	0.36	0.36	0.36	1.43



Industry Idea

Analysis of Oil and Gas Stocks

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Permian Basin Royalty Trust										
Next Twelve Months Operating and Financial Estimates										
	Q4	Year	Q3	Q4	Year	Q1E	Q2E	Q3E	Q4E	Next Twelve Months
	12/31/16	2016	9/30/17	12/31/17	2017	3/31/18	6/30/18	9/30/18	12/31/18	12/31/18
TOP LINE										
Volume										
Natural Gas (mmcf)	1.0	1.0	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
Oil (mbd)	0.81	0.82	0.79	0.75	0.77	0.76	0.75	0.74	0.74	0.75
Price (cash lagged two months)										
Natural Gas (\$/mcf)	4.23	3.66	4.95	5.70	5.22	5.41	5.01	5.03	5.13	5.14
Oil (\$/bbl)	41.46	37.86	44.30	45.93	45.80	52.60	52.73	52.28	51.51	52.28
Revenue (\$mm)										
Natural Gas	0.4	1.3	0.4	0.5	1.6	0.4	0.4	0.4	0.4	1.7
Oil	3.1	11.4	3.2	3.2	12.9	3.7	3.5	3.6	3.5	14.3
Total Revenue	3.5	12.7	3.6	3.6	14.6	4.1	3.9	4.0	3.9	16.0
Expense										
Operating		-			-					
Production & Property taxes	0.6	1.9	0.5	0.5	1.2	0.4	0.4	0.4	0.4	1.6
Total Expense	0.6	1.9	0.5	0.5	1.2	0.4	0.4	0.4	0.4	1.6
Ebitda	2.9	10.9	3.1	3.1	13.4	3.7	3.5	3.6	3.5	14.4
Ebitda times 95%	2.8	10.3	2.9	3.0	12.7	3.5	3.4	3.4	3.3	13.6
BOTTOM LINE										
Volume	2.8									
Volume										
Natural Gas (mmcf)	12.9	14.1	10.9	10.7	10.9	10.6	10.5	10.4	10.3	10.4
Oil (mbd)	2.20	2.37	1.78	1.97	1.89	1.85	1.83	1.81	1.80	1.82
Price (cash lagged two months)										
Natural Gas (\$/mcf)	2.75	2.19	3.02	3.12	3.04	2.96	2.74	2.76	2.81	2.82
Oil (\$/bbl)	42.53	37.92	43.46	46.53	45.92	53.29	53.42	52.97	52.18	52.96
Revenue (\$mm)										
Natural Gas	3.3	11.3	3.0	3.1	12.1	2.9	2.6	2.6	2.7	10.7
Oil	8.6	32.9	7.1	8.4	31.6	9.1	8.7	8.8	8.6	35.2
Total Revenue	11.8	44.2	10.1	11.5	43.7	12.0	11.3	11.5	11.3	46.0
Expense										
Operating	3.9	19.8	4.8	4.2	16.3	4.2	4.2	4.2	4.2	16.7
Production taxes	1.1	4.2	0.6	0.8	1.8	0.7	0.7	0.7	0.7	2.8
Total Expense	5.0	24.0	5.3	4.9	18.1	4.9	4.9	4.9	4.9	19.5
Ebitda	6.9	20.2	4.8	6.6	25.7	7.1	6.4	6.6	6.4	26.5
Development	0.7	4.0	0.6	0.6	1.8	0.6	0.6	0.6	0.6	2.5
(Ebitda-Dvlpmt) times 75%	4.6	12.1	3.2	4.5	17.9	4.9	4.3	4.5	4.3	18.0
Excess Costs		0.9			-					-
CASH DISTRIBUTION										
Royalty Income (\$mm)										
Top Line	2.8	10.3	2.9	3.0	12.7	3.5	3.4	3.4	3.3	13.6
Bottom Line	4.6	11.3	3.2	4.5	17.9	4.9	4.3	4.5	4.3	18.0
Administration	0.3	2.3	0.2	0.2	1.3	0.4	0.4	0.4	0.4	1.6
Distributable Income (\$mm)	7.1	19.3	5.9	7.3	29.3	8.0	7.3	7.5	7.3	30.1
Units (millions)	47	47	47	47	47	47	47	47	47	47
Distribution (\$/unit)	0.15	0.42	0.13	0.16	0.63	0.17	0.16	0.16	0.16	0.65



Industry Idea

Analysis of Oil and Gas Stocks

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Sabine Royalty Trust										
Next Twelve Months Operating and Financial Performance										
	Q4	Year	Q3	Q4E	Year	Q1E	Q2E	Q3E	Q4E	Next Twelve Months
	12/31/16	2016	9/30/17	12/31/17	2017	3/31/18	6/30/18	9/30/18	12/31/18	12/31/18
Volume										
Natural Gas (bcf)	1.49	6.37	1.25	1.26	5.40	1.36	1.33	1.35	1.36	5.40
Natural Gas (mmcf)	16.2	17.4	13.7	13.7	14.8	14.8	14.8	14.8	14.8	14.8
Days	92	366	91	92	365	92	90	91	92	365
Oil (mmb)	0.128	0.512	0.135	0.135	0.535	0.138	0.135	0.137	0.138	0.548
Oil (mbd)	1.39	1.40	1.47	1.47	1.47	1.50	1.50	1.50	1.50	1.50
Days	92	365	92	92	365	92	89	92	92	365
Total (bcfe)	2.26	9.44	2.06	2.07	8.61	2.19	2.14	2.17	2.19	8.69
Total (mmcf)	24.5	25.8	22.5	22.5	23.6	23.8	23.8	23.8	23.8	23.8
Price (Henry Hub natural gas lagged three months; WTI Cushing oil, two months)										
Henry Hub (\$/mmbtu)	2.81	2.28	3.18	2.99	3.12	2.93	2.62	2.59	2.66	2.70
Differential (%)	1	(2)	(3)	-	4	-	-	-	-	(0)
Trust (\$/mcf)	2.78	2.33	3.29	2.99	3.00	2.93	2.62	2.59	2.66	2.70
WTI Cushing (\$/bbl)	46.60	41.85	46.78	49.85	49.54	57.09	57.23	56.75	55.91	56.74
Differential	2.23	2.27	1.62	1.73	2.36	1.98	1.99	1.97	1.94	1.97
Trust (\$/bbl)	44.37	39.58	45.16	48.12	47.18	55.11	55.24	54.78	53.97	54.77
Total (\$/bcfe)	4.35	3.72	4.96	4.96	4.81	5.30	5.11	5.06	5.05	5.13
Revenue (\$mm)										
Natural Gas	4.1	14.8	4.1	3.8	16.2	4.0	3.5	3.5	3.6	14.6
Oil	5.7	20.3	6.1	6.5	25.2	7.6	7.5	7.5	7.4	30.0
Total	9.8	35.1	10.2	10.3	41.4	11.6	10.9	11.0	11.1	44.6
Expense										
Tax and other	2.3	5.3	1.1	2.0	5.0	1.0	1.0	1.0	2.0	5.0
General and administrative	0.6	2.6	0.6	0.6	2.5	0.6	0.6	0.6	0.6	2.4
Total	2.9	7.8	1.7	2.6	7.5	1.6	1.6	1.6	2.6	7.4
Ebitda	6.9	27.3	8.5	7.7	33.9	10.0	9.4	9.4	8.5	37.2
Ebit	6.9	27.3	8.5	7.7	33.9	10.0	9.4	9.4	8.5	37.2
Ebt	6.9	27.3	8.5	7.7	33.9	10.0	9.4	9.4	8.5	37.2
Distributable Income (\$mm)	6.9	27.3	8.5	7.7	33.9	10.0	9.4	9.4	8.5	37.2
Units (millions)	14.6	14.6	14.6	14.6	14.6	14.6	14.6	14.6	14.6	14.6
Distributable Income/Unit (\$)	0.47	1.87	0.58	0.53	2.32	0.68	0.64	0.64	0.58	2.55



Industry Idea

Analysis of Oil and Gas Stocks

December 20, 2017

San Juan Basin Royalty Trust										
Next Twelve Months Operating and Financial Estimates										
	Q4	Year	Q3	Q4E	Year	Q1E	Q2E	Q3E	Q4E	Next Twelve Months
	12/31/16	2016	9/30/17	12/31/17	2017	3/31/18	6/30/18	9/30/18	12/31/18	12/31/18
Volume										
Natural gas (mmbtu)	8.0	31.1	7.2	7.2	28.8	7.1	6.8	7.0	6.9	27.8
Heat Content(btu/cf)	1,112	1,109	1,120	1,111	1,117	1,111	1,111	1,111	1,111	1,111
Natural gas (bcf)	7.2	28.0	6.5	6.5	25.8	6.4	6.1	6.3	6.2	25.0
Natural Gas (mmcf)	78.1	76.5	70.3	70.3	70.6	69.6	68.9	68.2	67.5	68.5
Days	92	366	92	92	365	92	89	92	92	365
Oil (mb)	0.02	0.07	0.02	0.02	0.06	0.02	0.02	0.02	0.02	0.07
Oil (mbd)	0.20	0.20	0.18	0.18	0.17	0.18	0.18	0.18	0.18	0.18
Total gas & oil (bcf)	7.3	28.4	6.6	6.6	26.2	6.5	6.2	6.4	6.3	25.4
Price										
Natural gas (\$/mmbtu) (Henry Hub lagged two months)										
Henry Hub (\$/mmbtu)	2.82	2.32	3.15	2.96	3.12	2.81	2.60	2.62	2.66	2.67
Differential (%)	22	26	28	21	23	23	23	23	23	23
Net to SJT (\$/mmbtu)	2.20	1.71	2.27	2.34	2.40	2.16	2.00	2.01	2.05	2.05
Natural gas (\$/mcf)	2.44	1.89	2.55	2.60	2.68	2.40	2.22	2.23	2.27	2.28
Oil (\$/bbl) (WTI Cushing lagged two months)										
WTI Cushing	46.60	41.85	46.78	49.85	49.54	57.09	57.23	56.75	55.91	56.74
SJT	34.47	30.01	35.09	37.39	36.75	42.35	42.45	42.09	41.47	42.09
Total gas & oil (\$/mcf)	2.49	1.94	2.60	2.66	2.73	2.47	2.29	2.31	2.34	2.35
Revenue (\$mm)										
Natural Gas	17.5	53.0	16.5	16.8	69.0	15.3	13.6	14.0	14.1	57.1
Oil	0.6	2.2	0.6	0.6	2.3	0.7	0.7	0.7	0.7	2.7
Total	18.2	55.3	17.1	17.4	71.3	16.0	14.3	14.7	14.8	59.8
Cost (\$mm)										
Severance tax	2.0	6.4	1.9	1.8	7.6	1.7	1.5	1.5	1.5	6.3
Operating	6.6	26.1	5.9	4.3	22.8	4.3	4.3	4.3	4.3	17.4
Total	8.6	32.5	7.8	6.2	30.4	6.0	5.8	5.9	5.9	23.6
Cash flow (\$mm)										
Development	0.4	1.4	(0.6)	0.0	(0.4)	0.0	0.0	0.0	0.0	0.0
Net proceeds (\$mm)	9.2	21.4	9.9	11.3	41.2	10.0	8.5	8.8	8.9	36.2
Royalty income (\$mm)										
Royalty/Net proceeds	75%	75%	75%	75%	75%	75%	75%	75%	75%	75%
Administration	(0.8)	2.2	0.3	(1.7)	(0.4)	0.3	0.3	0.3	0.3	1.2
One-time		-	(7.7)		(7.7)					-
Distributable income (\$mm)	7.7	13.9	14.8	10.2	39.1	7.2	6.0	6.3	6.4	25.9
Units (millions)										
Per unit	0.16	0.30	0.32	0.22	0.84	0.15	0.13	0.14	0.14	0.56



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Cross Timbers Royalty Trust					
Functional Cash Flow and Present Value					
				<i>Present</i>	
	<i>NTM Ebitda</i>	<i>Adjusted</i>	<i>PV/</i>	<i>Value</i>	
	<i>(US\$mm)</i>	<i>R/P</i>	<i>Ebitda</i>	<i>(US\$mm)</i>	
Top Line Natural Gas	5	12.3	24.5	126	72%
Top Line Oil	2	6.8	18.4	30	17%
Bottom Line Oil	2	5.0	9.0	18	10%
	9	9.1	19.8	174	100%
Debt (US\$mm)					-
Net Present Value (US\$mm)					174
Shares (mm)					6
Net Present Value (US\$/sh)					29
NPV Approximation by Cash Flow Multiple Depending on Reserve Life (US\$/sh)					27
Top Line Approximation at 1.5 times Cash Flow Multiple Depending on Reserve Life					

Dorchester Minerals, L.P.					
Functional Cash Flow and Present Value					
				<i>Present</i>	
	<i>NTM Ebitda</i>	<i>Adjusted</i>	<i>PV/</i>	<i>Value</i>	
	<i>(US\$mm)</i>	<i>R/P</i>	<i>Ebitda</i>	<i>(US\$mm)</i>	
<u>Top Line - Royalty Interests</u>					
North American Natural Gas	7	6.2	22.3	160	21%
Oil	34	6.9	16.0	550	71%
<u>Bottom Line - Net Profits Interests</u>					
North American Natural Gas	2	7.3	10.7	20	3%
Oil	5	5.2	8.9	40	5%
<u>Total Top and Bottom</u>					
North American Natural Gas	9	6.6	19.9	180	23%
Oil	39	6.4	15.1	590	77%
	48	6.5	16.0	770	100%
Debt (US\$mm)					-
Net Present Value (US\$mm)					770
Shares (mm)					32
Net Present Value - Standard Estimate (US\$/sh)					24
NPV Approximation by Cash Flow Multiple Depending on Reserve Life (US\$/sh)					27
Top Line Approximation at 1.8 times Cash Flow Multiple Depending on Reserve Life					

Permian Basin Royalty Trust					
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>
Top Line - Royalty Interests (95% Underlying)					
North American Natural Gas	1	7.2	21.7	30	6%
Oil	12	12.3	17.9	210	41%
	13	11.4	18.3	240	47%
Bottom Line - Working Interests (75% Underlying)					
North American Natural Gas	4	7.8	18.2	80	16%
Oil	14	9.8	13.2	190	37%
	19	8.8	14.4	270	53%
Total Top and Bottom					
North American Natural Gas	6	7.7	19.0	110	22%
Oil	26	10.7	15.3	400	78%
	32	9.5	16.0	510	100%
Debt (US\$mm)					-
Net Present Value (US\$mm)					510
Shares (mm)					46.6
Net Present Value (US\$/sh)					11
NPV Approximation by Cash Flow Multiple Depending on Reserve Life (US\$/sh)					10
Top Line Approximation at 1.5 times Cash Flow Multiple Depending on Reserve Life					

Sabine Royalty Trust					
Net 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	12	9.5	24.7	300	34%
Oil	25	14.3	22.8	570	66%
	37	11.5	23.4	870	100%
Debt (US\$mm)					-
Net Present Value (US\$mm)					870
Shares (mm)					14.6
Net Present Value (US\$/sh)					60
Top Line Approximation at 1.5 times Cash Flow Multiple Depending on Reserve Life					52

San Juan Basin Royalty Trust					
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	26	10.2	14.2	370	100%
	26	10.2	14.2	370	100%
Debt (US\$mm)					-
Net Present Value (US\$mm)					370
Shares (mm)					47
Net Present Value - Standard Estimate (US\$/sh)					8
NPV Approximation by Cash Flow Multiple Depending on Reserve Life (US\$/sh)					8



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Table 1
McDep Energy Stocks
Ranked by McDep Ratio

			Price (US\$/sh)	Market Cap (US\$m)	Enterprise Value (\$mm)	EV/ Market Cap	EV/ Ebitda NTM	PV/ Ebitda NTM	Oil Prod'n/ PV (%)	Dist. Yield NTM (%)	McDep Ratio (EV/PV)
	Symbol/Rating		19-Dec 2017								
Global Integrated											
	Chevron Corporation	CVX	119.84	227,000	292,000	1.28	8.3	9.1	62	3.6	0.91
	Exxon Mobil Corporation	XOM	82.44	352,000	444,000	1.26	8.8	10.3	53	3.7	0.86
	Royal Dutch Shell	RDS-A B	64.90	270,000	395,000	1.46	6.9	8.0	47	5.8	0.86
	Total S.A.	TOT B	54.57	141,000	198,000	1.40	5.9	8.6	51	5.3	0.68
	<i>Total or Median</i>			990,000	1,329,000	1.34	7.6	8.9	52	4.5	0.86
Large Independent											
	EOG Resources, Inc.	EOG	101.43	58,700	65,900	1.12	10.4	8.9	89	0.7	1.17
	Pioneer Natural Resources	PXD	160.20	27,200	29,200	1.07	8.8	8.3	87	0.0	1.06
	Occidental Petroleum Corp.	OXY	70.90	54,300	67,800	1.25	10.1	10.6	81	4.3	0.96
	Devon Energy Corporation	DVN	38.70	20,500	28,200	1.38	7.2	8.0	62	0.6	0.90
	Marathon Oil Corporation	MRO B	16.02	13,620	20,700	1.52	7.5	8.4	79	1.2	0.89
	ConocoPhillips	COP B	52.68	64,000	87,000	1.37	8.3	10.1	69	2.0	0.82
	<i>Total or Median</i>			238,300	299,000	1.31	8.6	8.7	80	1.0	0.93
Small Independent											
	Cimarex Energy Company	XEC	113.05	10,600	12,100	1.14	9.0	9.5	70	0.3	0.95
	Continental Resources (32%)	CLR B	48.35	5,800	7,900	1.37	8.6	9.6	75	-	0.90
	California Resources	CRC	16.25	700	6,800	9.8	8.7	10.6	89	-	0.82
	Whiting Petroleum Corporation	WLL	23.70	2,200	5,400	2.51	5.6	10.2	92	-	0.55
	Range Resources	RRC B	15.70	3,900	8,400	2.19	7.7	16.7	32	0.5	0.46
	<i>Total or Median</i>			23,000	41,000	2.19	8.6	10.2	75	-	0.82
Income											
	San Juan Basin Royalty Trust	SJT	7.80	360	360	1.00	14.0	14.4	-	7.1	0.98
	Permian Basin RT	PBT	8.83	410	410	1.00	12.9	16.1	78	7.3	0.80
	Sabine Royalty Trust	SBR	43.90	640	640	1.00	17.2	23.5	66	5.8	0.73
	Dorchester Minerals, L.P.	DMLP B	14.45	470	470	1.00	9.7	16.1	77	9.9	0.60
	Cross Timbers Royalty Trust	CRT B	14.13	90	90	1.00	9.7	19.8	28	8.0	0.49
	<i>Total or Median</i>			2,000	2,000	1.00	12.9	16.1	66	7.3	0.73
Canada											
	EnCana Corporation	ECA	11.19	10,900	17,200	1.58	9.7	10.2	67	0.5	0.96
	Imperial Oil Limited (30%)	IMO	30.00	7,600	9,500	1.25	6.6	8.0	67	1.7	0.83
	Suncor Energy	SU B	34.39	57,200	74,700	1.30	7.2	8.7	84	2.9	0.82
	Cenovus Energy Inc.	CVE	8.53	10,500	20,300	1.93	4.7	8.5	85	1.8	0.55
	Birchcliff Energy Ltd.	BIREF B	3.19	900	1,500	1.69	5.6	12.6	30	2.4	0.44
	<i>Total or Median</i>			87,000	123,000	1.58	6.6	8.7	67	1.8	0.82

EV = Enterprise Value = Market Cap and Debt; Ebitda = Earnings before interest, tax, depreciation, amort.

Estimated Ebitda (cash flow) tied to NTM futures prices for oil and natural gas. NTM = Next Twelve Months ending 12/31/18.

Estimated Present Value (PV) presumes a long-term price for oil of US\$70 a barrel and natural gas, \$4.00 a million btu.

McDep Ratio = Market cap and Debt to present value of oil and gas and other businesses. For historical research see www.mcdep.com

			Price (US\$/sh)		Oil Equiv. Price (\$/boe)	Operating Expense Fixed Var. (\$/boe) (%)	Ebitda NTM (\$/boe)	Ebitda NTM (\$mm)	Oper Lev Ebitda chg/ Price chg	McDep Ratio
	Symbol/Rating		19-Dec 2017	Volume (mmboe)						
	B = Buy									
Global Integrated (excl. Downstream)										
Chevron Corporation	CVX		119.84	1,026	43.53	11 14	26.40	27,090	1.42	0.91
Exxon Mobil Corporation	XOM		82.44	1,488	41.82	4 38	22.00	32,742	1.18	0.86
Royal Dutch Shell	RDS-A	B	64.90	1,374	40.22	6 15	28.30	38,871	1.21	0.86
Total S.A.	TOT	B	54.57	909	41.87	0 39	25.70	23,363	1.00	0.68
	<i>Total or Median</i>								<i>1.20</i>	<i>0.86</i>
Large Independent (excl. Downstream)										
EOG Resources, Inc.	EOG		101.43	239	39.11	11 4	26.40	6,318	1.42	1.17
Pioneer Natural Resources	PXD		160.20	124	38.83	11 3	26.60	3,308	1.41	1.06
Occidental Petroleum Corp.	OXY		70.90	232	39.77	12 10	23.80	5,520	1.50	0.96
Devon Energy Corporation	DVN		38.70	191	29.94	10 5	18.50	3,524	1.54	0.90
Marathon Oil Corporation	MRO	B	16.02	149	31.53	11 6	18.50	2,750	1.59	0.89
ConocoPhillips	COP	B	52.68	420	40.84	8 19	25.00	10,511	1.32	0.82
	<i>Total or Median</i>								<i>1.46</i>	<i>0.93</i>
Small Independent										
Cimarex Energy Company	XEC		113.05	74	28.17	6 15	18.00	1,336	1.33	0.95
Continental Resources (32%)	CLR	B	48.35	33	35.45	3 13	27.70	918	1.11	0.90
California Resources	CRC		16.25	47	43.40	15 27	16.60	776	1.90	0.82
Whiting Petroleum Corporation	WLL		23.70	45	36.21	9 16	21.50	960	1.42	0.55
Range Resources	RRC	B	15.70	133	17.29	8 6	8.20	1,092	1.98	0.46
	<i>Total or Median</i>								<i>1.42</i>	<i>0.82</i>
Income										
San Juan Basin Royalty Trust	SJT		7.80	3	14.12	5 4	8.55	26	1.58	0.98
Permian Basin RT	PBT		8.83	1	38.05	10 9	24.53	32	1.41	0.80
Sabine Royalty Trust	SBR		43.90	1	30.78	2 10	25.66	37	1.08	0.73
Dorchester Minerals, L.P.	DMLP	B	14.45	2	31.84	7 8	22.44	48	1.31	0.60
Cross Timbers Royalty Trust	CRT	B	14.13	0	36.13	8 20	21.00	9	1.38	0.49
	<i>Total or Median</i>								<i>1.38</i>	<i>0.73</i>
Canada (excl. Downstream)										
EnCana Corporation	ECA		11.19	113	28.64	12 3	15.64	1,765	1.77	0.96
Imperial Oil Limited (30%)	IMO		30.00	40	40.35	17 4	21.70	878	1.78	0.83
Suncor Energy	SU	B	34.39	277	53.25	22 3	29.72	8,244	1.74	0.82
Cenovus Energy Inc.	CVE		8.53	208	31.18	11 3	19.37	4,025	1.57	0.55
Birchcliff Energy Ltd.	BIREF	B	3.19	23	16.74	4 9	11.20	259	1.36	0.44
	<i>Total or Median</i>								<i>1.74</i>	<i>0.82</i>

For historical research see www.mcdep.com



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			Price (US\$/sh)	Shares	Debt	Dividend	P/E	Down- stream/ PV	Proven Undev. Resrvs	Adjustd Resrvs/ Prod NTM	Net Present Value (US\$/sh)
	Symbol/Rating		19-Dec 2017	(mm)	(\$mm)	NTM (\$/sh)	NTM	(%)	(%)		
	B = Buy										
Global Integrated											
Exxon Mobil Corporation	XOM		82.44	4,271	91,771	3.08	19	24	31	11.3	100.00
Total S.A.	TOT	B	54.57	2,583	57,015	2.91	11	26	42	9.5	90.00
Chevron Corporation	CVX		119.84	1,896	64,410	4.32	25	18	32	9.1	135.00
Royal Dutch Shell	RDS-A	B	64.90	4,163	124,534	3.76	16	28	25	8.3	80.00
	<i>Median</i>									9.3	
Large Independent											
ConocoPhillips	COP	B	52.68	1,215	23,479	1.06		-	20	10.9	68.00
Occidental Petroleum Corp.	OXY		70.90	766	13,500	3.08	37	14	23	9.2	75.00
Devon Energy Corporation	DVN		38.70	529	7,746	0.24	64	10	20	8.7	45.00
Marathon Oil Corporation	MRO	B	16.02	850	7,044	0.20		-	39	7.6	19.00
EOG Resources, Inc.	EOG		101.43	579	7,214	0.67		-	30	6.8	85.00
Pioneer Natural Resources	PXD		160.20	170	2,000	0.08	34	-	7	5.6	150.00
	<i>Median</i>									8.2	
Small Independent											
Whiting Petroleum Corporation	WLL		23.70	91	3,242	-		-	53	12.5	72.00
Range Resources	RRC	B	15.70	245	4,575	0.08	21	-	44	11.8	56.00
Continental Resources (32%)	CLR	B	48.35	119	2,134	-		-	59	11.4	56.00
California Resources	CRC		16.25	43	6,100	-		-	29	10.4	50.00
Cimarex Energy Company	XEC		113.05	94	1,483	0.32	20	-	21	5.8	120.00
	<i>Median</i>									11.4	
Income											
Sabine Royalty Trust	SBR		43.90	15	-	2.55	17	-	4	11.5	60.00
San Juan Basin Royalty Trust	SJT		7.80	47	-	0.56	14	-	-	10.2	8.00
Permian Basin RT	PBT		8.83	47	-	0.65	14	-	12	9.5	11.00
Cross Timbers Royalty Trust	CRT	B	14.13	6	-	1.13	13	-	-	9.1	29.00
Dorchester Minerals, L.P.	DMLP	B	14.45	32	-	1.43	14	-	-	6.5	24.00
	<i>Median</i>									9.5	
Canada											
Suncor Energy	SU	B	34.39	1,663	17,443	1.00	13	16	44	13.8	44.00
Cenovus Energy Inc.	CVE		8.53	1,229	9,798	0.16		5	55	12.9	22.00
Birchcliff Energy Ltd.	BIREF	B	3.19	268	591	0.08	18	-	69	12.5	10.00
Imperial Oil Limited (30%)	IMO		30.00	254	1,935	0.50	10	32	23	9.1	38.00
EnCana Corporation	ECA		11.19	973	6,290	0.06		-	43	5.5	12.00
	<i>Median</i>									12.5	
P/E = Stock Price to Earnings. For historical research see www.mcdep.com .											



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Table 4										
McDep Energy Stocks										
Total Return Year-to-Date 2017										
Ranked by Unlevered Total Return										
			Price	Price			Equity	Unlevered		
			(\$/sh)	(\$/sh)	Price	Cash	Total	Debt	Return	McDep
	Symbol/Rati		19-Dec	30-Dec	Change	Distrib.	Return	(\$/sh)	(%)	Ratio
			2017	2016	(%)	(%)	(%)			
Global Integrated										
	Royal Dutch Shell	RDS-A B	64.90	54.38	19	7	26	30	17	0.86
	Total S.A.	TOT B	54.57	50.97	7	5	12	22	9	0.68
	Chevron Corporation	CVX	119.84	117.70	2	4	5	34	4	0.91
	Exxon Mobil Corporation	XOM	82.44	90.26	(9)	3	(5)	21	(4)	0.86
	<i>Median</i>				4		9		6	0.86
Large Independent										
	ConocoPhillips	COP B	52.68	50.14	5	2	7	19	5	0.82
	Occidental Petroleum Corp.	OXY	70.90	71.23	(0)	4	4	18	3	0.96
	EOG Resources, Inc.	EOG	101.43	101.10	0	1	1	12	1	1.17
	Marathon Oil Corporation	MRO B	16.02	17.31	(7)	1	(6)	8	(4)	0.89
	Pioneer Natural Resources	PXD	160.20	180.00	(11)	0	(11)	12	(10)	1.06
	Devon Energy Corporation	DVN	38.70	45.67	(15)	1	(15)	15	(11)	0.90
	<i>Median</i>				(4)		(3)		(2)	0.93
Small Independent										
	California Resources	CRC	16.25	21.29	(24)	-	(24)	143	(3)	0.82
	Continental Resources (32%)	CLR B	48.35	51.54	(6)	-	(6)	18	(5)	0.90
	Cimarex Energy Company	XEC	113.05	135.90	(17)	0	(17)	16	(15)	0.95
	Whiting Petroleum Corporation	WLL	23.70	48.08	(51)	-	(51)	36	(29)	0.55
	Range Resources	RRC B	15.70	34.36	(54)	0	(54)	19	(35)	0.46
	<i>Median</i>				(24)		(24)		(15)	0.82
Income										
	Sabine Royalty Trust	SBR	43.90	35.15	25	7	31	-	31	0.73
	San Juan Basin Royalty Trust	SJT	7.80	6.62	18	12	30	-	30	0.98
	Permian Basin RT	PBT	8.83	7.71	15	8	23	-	23	0.80
	Dorchester Minerals, L.P.	DMLP B	14.45	17.55	(18)	7	(11)	-	(11)	0.60
	Cross Timbers Royalty Trust	CRT B	14.13	17.97	(21)	6	(16)	-	(16)	0.49
	<i>Median</i>				15		23		23	0.73
Canada										
	Suncor Energy	SU B	34.39	32.69	5	3	8	10	6	0.82
	EnCana Corporation	ECA	11.19	11.74	(5)	1	(4)	6	(3)	0.96
	Imperial Oil Limited (30%)	IMO	30.00	34.76	(14)	1	(12)	8	(10)	0.83
	Cenovus Energy Inc.	CVE	8.53	15.13	(44)	1	(43)	8	(28)	0.55
	Birchcliff Energy Ltd.	BIREF B	3.19	7.01	(54)	1	(53)	2	(41)	0.44
	<i>Median</i>				(14)		(12)		(10)	0.82
	<i>Grand Median</i>				(7)		(6)		(4)	0.83
	Natural Gas (\$/mmbtu)		2.71	3.74	(28)					
	Oil - West Texas Intermediate (\$/bbl)		57.46	53.72	7					
	Total Stock Market - U.S.	VTI	137.94	115.32	20					
	Developed Markets - ex US	VEA	44.80	36.54	23					
	Emerging Markets	VVO	44.77	35.78	25					

Source: McDep LLC, Yahoo, CME Group, Bloomberg

For historical research see www.mcdep.com



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