## Thrive and Survive in Oil and Gas Investments

## Summary and Recommendation

In the face of an uncertain future, we like oil and gas investments for the combination of growth with inflation protection and deflation resistance. Portfolios with those characteristics can thrive in good times and survive in bad times. After a good 2000s for oil, the 2010s still look good if not as great for oil, better from here for natural gas, surprisingly better for U.S. refining, great for North American consumers of natural gas and positive for North American oil security. Solid European companies are likely to continue to make money in global markets. Producers in developing countries may share the stronger growth prospects of less mature, lower debt economies. Buy recommendations tap into all those trends to some degree while priced at low McDep Ratios ranging from 0.42 to 0.89 (see Table 1 on page 2).

## McDep Ratios Illustrate Investment Growth Potential

Stocks priced at a McDep Ratio below 1.00 offer better than a 7\% a year unlevered return above inflation by our estimates. Stocks priced at McDep Ratios above 1.00 offer less than a $7 \%$ a year unlevered return above inflation. The quantitative analysis concentrates on prospects related to proven reserves independent of quality of management. Qualitative considerations of unusual volume growth potential or unusual management quality need to be weighed in addition to McDep Ratio in deciding to invest.

The ability to withstand surprise deflation of economic conditions is greater for companies with lower ratios of Debt to Present Value (see Table 2 on page 3). In addition, energy meets basic needs that consumers try to satisfy even if times are too difficult to buy a new house, car or appliance.

## Oil is a "Hard Asset"

Real assets like oil reserves, refineries and manufacturing facilities that companies own get priced higher and higher in monetary terms to offset inflation when there is a continuing need for those assets. During the 2000s, oil, measured by the average of future prices for the next six years, increased more than four-fold to the recent quote of $\$ 92$ a barrel (see chart (Oil Six-Year Futures Strip on page 6). The price may soon cross above the 40 -week average of $\$ 92$ to restart an uptrend (see chart Six-Year Commodity Price Meter on page 6). During the 2000s natural gas peaked and then continued to decline with the unexpected bounty of shale gas (see chart Natural Gas Futures on page 7). In a hopeful sign, one-year natural gas futures have been trading above the 40 -week average for 11 weeks (see chart Natural Gas One-Year Futures Strip on page 7).

Kurt H. Wulff, CFA

A Weekly Analysis of Large Cap Oil and Gas Stocks
September 11, 2012

| Table 1 |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| McDep Large Cap Energy Stocks |  |  |  |  |  |  |  |  |  |  |
| Geographic Domicile and Business Segments |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  | Present | Value by | Segment | $t$ (\%) |  |
|  |  |  | Price |  |  | North | Rest |  |  |  |
|  |  |  | (US\$/sh) | EV/ | Enterprise | Amer. | of World |  |  |  |
| Symbol/Rating |  |  | 10-Sep | Market | Value | Natural | Natural | Oil | Down- | McDep |
| $\mathrm{B}=$ Buy, CB (see below) |  |  | 2012 | Cap | (\$mm) | Gas | Gas | Prod'n | stream | Ratio |
| U.S. and Europe Integrated |  |  |  |  |  |  |  |  |  |  |
| BG Group | BRGYY |  | 20.38 | 1.24 | 86,000 |  | 24 | 42 | 34 | 0.98 |
| Exxon Mobil Corporation | XOM | B | 89.48 | 1.17 | 486,000 | 7 | 20 | 56 | 16 | 0.84 |
| Royal Dutch Shell ple | RDS-A | B | 70.98 | 1.26 | 281,000 | 3 | 22 | 56 | 19 | 0.74 |
| Chevron Corporation | CVX | B | 113.96 | 1.12 | 251,000 | 3 | 11 | 76 | 10 | 0.70 |
| Statoil ASA (33\%) | STO | B | 25.69 | 1.49 | 40,200 |  | 34 | 66 | - | 0.68 |
| BP plc | BP |  | 42.04 | 1.64 | 222,000 | 4 | 8 | 63 | 25 | 0.62 |
| Total S.A. | TOT | B | 51.37 | 1.37 | 160,000 |  | 22 | 64 | 14 | 0.59 |
| Total or Median |  |  |  |  | 1,526,000 |  |  | 63 |  | 0.70 |
| Brazil/Russia/Australia/China |  |  |  |  |  |  |  |  |  |  |
| Woodside Petroleum Ltd. | WOPEY |  | 36.27 | 1.25 | 37,000 |  | 68 | 32 | - | 0.84 |
| CNOOC Limited (36\%) | CEO |  | 183.40 | 1.01 | 30,000 |  | 9 | 91 | - | 0.74 |
| PetroChina Company Ltd (14\%) | PTR | CB | 119.67 | 1.39 | 42,700 |  | 15 | 77 | 9 | 0.65 |
| Petrobras | PBR | CB | 21.74 | 1.54 | 218,000 |  | 5 | 81 | 14 | 0.59 |
| Gazprom (50\%) | OGZPY | CB | 10.27 | 1.28 | 75,000 |  | 11 | 13 | 76 | 0.43 |
| Lukoil Oil Company | LUKOY | B | 60.41 | 1.06 | 50,000 |  |  | 71 | 29 | 0.42 |
| Total or Median |  |  |  |  | 453,000 |  |  | 74 |  | 0.62 |
| U.S. Independent |  |  |  |  |  |  |  |  |  |  |
| EOG Resources, Inc. | EOG | B | 112.40 | 1.19 | 36,200 | 32 | 4 | 64 | - | 0.88 |
| Chesapeake Energy Corp. | CHK |  | 19.57 | 2.41 | 35,400 | 56 |  | 44 | - | 0.86 |
| Southwestern Energy Company | SWN |  | 32.50 | 1.16 | 13,100 | 100 |  |  | - | 0.83 |
| Anadarko Petroleum Corp. | APC |  | 70.40 | 1.48 | 52,000 | 34 |  | 63 | 3 | 0.78 |
| Occidental Petroleum Corp. | OXY | CB | 86.32 | 1.13 | 79,000 | 8 | 1 | 81 | 10 | 0.74 |
| ConocoPhillips | COP | B | 56.18 | 1.56 | 108,000 | 13 | 13 | 74 | - | 0.69 |
| Devon Energy Corporation | DVN | CB | 59.37 | 1.35 | 32,400 | 46 |  | 54 | - | 0.65 |
| Marathon Oil Corporation | MRO | CB | 28.47 | 1.44 | 29,100 | 7 | 3 | 90 | - | 0.62 |
| Total or Median |  |  |  |  | 385,000 |  |  | 64 |  | 0.76 |
| Canada |  |  |  |  |  |  |  |  |  |  |
| Penn West Exploration | PWE |  | 15.01 | 1.62 | 11,500 | 18 |  | 82 | - | 0.83 |
| Imperial Oil Limited (30\%) | IMO | B | 48.13 | 1.17 | 14,400 | 2 |  | 84 | 14 | 0.80 |
| Cenovus Energy Inc. | CVE | B | 34.71 | 1.28 | 33,700 | 11 |  | 73 | 16 | 0.77 |
| EnCana Corporation | ECA | B | 22.59 | 1.51 | 25,000 | 86 |  | 14 | - | 0.70 |
| Suncor Energy | SU | B | 33.26 | 1.28 | 66,100 | 2 |  | 80 | 18 | 0.58 |
| Canadian Oil Sands Limited | COSWF | B | 21.96 | 1.22 | 13,000 |  |  | 100 | - | 0.54 |
| Total or Median |  |  |  |  | 164,000 |  |  | 81 |  | 0.74 |
|  |  |  |  |  |  |  |  |  |  |  |
| Composite |  |  |  |  | 2,528,000 | 8 | 14 | 63 | 16 | 0.69 |
|  |  |  |  |  |  |  |  |  |  |  |
| $\mathrm{CB}=$ Contrarian Buy, Stock Price may be in downtrend compared to 200-day average. |  |  |  |  |  |  |  |  |  |  |

A Weekly Analysis of Large Cap Oil and Gas Stocks September 11, 2012

Table 2

| McDep Large Cap Energy Stocks |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Net Present Value and McDep Ratio |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  | Price |  |  | Net |  |  |
|  |  |  | (US\$/sh) |  | Market | Present | Debt/ |  |
| Symbol/Rating |  |  | 10-Sep | Shares | Cap | Value | Present | McDep |
| $\mathrm{B}=$ Buy, CB (see below) |  |  | 2012 | (mm) | (USSmm) | (USS/sh) | Value | Ratio |
|  |  |  |  |  |  |  |  |  |
| U.S. and Europe Integrated |  |  |  |  |  |  |  |  |
| BG Group ple | BRGYY |  | 20.38 | 3,415 | 69,600 | 21.00 | 0.19 | 0.98 |
| Exxon Mobil Corporation | XOM | B | 89.48 | 4,657 | 417,000 | 110.00 | 0.12 | 0.84 |
| Royal Dutch Shell ple | RDS-A | B | 70.98 | 3,133 | 222,000 | 102.00 | 0.15 | 0.74 |
| Chevron Corporation | CVX | B | 113.96 | 1,968 | 224,000 | 170.00 | 0.07 | 0.70 |
| Statoil ASA (33\%) | STO | B | 25.69 | 1,050 | 27,000 | 44.00 | 0.22 | 0.68 |
| BP plc | BP |  | 42.04 | 3,214 | 135,000 | 84.00 | 0.24 | 0.62 |
| Total S.A. | TOT | B | 51.37 | 2,264 | 116,000 | 100.00 | 0.16 | 0.59 |
| Total or Median |  |  |  |  | 1,211,000 |  | 0.16 | 0.70 |
| Brazil/Russia/Australia/China |  |  |  |  |  |  |  |  |
| Woodside Petroleum Ltd. | WOPEY |  | 36.27 | 808 | 29,300 | 45.00 | 0.17 | 0.84 |
| CNOOC Limited (36\%) | CEO |  | 183.40 | 161 | 29,600 | 250.00 | 0.01 | 0.74 |
| PetroChina Company Ltd (14\%) | PTR | CB | 119.67 | 256 | 30,700 | 210.00 | 0.18 | 0.65 |
| Petrobras | PBR | CB | 21.74 | 6,522 | 141,800 | 45.00 | 0.21 | 0.59 |
| Gazprom (50\%) | OGZPY | CB | 10.27 | 5,735 | 58,900 | 28.00 | 0.09 | 0.43 |
| Lukoil Oil Company | LUKOY | B | 60.41 | 780 | 47,100 | 150.00 | 0.02 | 0.42 |
| Total or Median |  |  |  |  | 337,000 |  | 0.13 | 0.62 |
| U.S. Independent |  |  |  |  |  |  |  |  |
| EOG Resources, Inc. | EOG | B | 112.40 | 270 | 30,400 | 130.00 | 0.14 | 0.88 |
| Chesapeake Energy Corp. | CHK |  | 19.57 | 751 | 14,700 | 27.00 | 0.50 | 0.86 |
| Southwestern Energy Company | SWN |  | 32.50 | 348 | 11,300 | 40.00 | 0.11 | 0.83 |
| Anadarko Petroleum Corp. | APC |  | 70.40 | 500 | 35,200 | 100.00 | 0.25 | 0.78 |
| Occidental Petroleum Corp. | OXY | CB | 86.32 | 811 | 70,000 | 120.00 | 0.08 | 0.74 |
| ConocoPhillips | COP | B | 56.18 | 1,230 | 69,000 | 96.00 | 0.25 | 0.69 |
| Devon Energy Corporation | DVN | CB | 59.37 | 405 | 24,000 | 102.00 | 0.17 | 0.65 |
| Marathon Oil Corporation | MRO | CB | 28.47 | 709 | 20,190 | 54.00 | 0.19 | 0.62 |
| Total or Median |  |  |  |  | 274,800 |  | 0.18 | 0.76 |
| Canada |  |  |  |  |  |  |  |  |
| Penn West Exploration | PWE |  | 15.01 | 474 | 7,100 | 20.00 | 0.32 | 0.83 |
| Imperial Oil Limited (30\%) | IMO | B | 48.13 | 256 | 12,300 | 62.00 | 0.12 | 0.80 |
| Cenovus Energy Inc. | CVE | B | 34.71 | 758 | 26,300 | 48.00 | 0.17 | 0.77 |
| EnCana Corporation | ECA | B | 22.59 | 736 | 16,600 | 37.00 | 0.24 | 0.70 |
| Suncor Energy | SU | B | 33.26 | 1,558 | 51,800 | 64.00 | 0.13 | 0.58 |
| Canadian Oil Sands Limited | CoswF | B | 21.96 | 485 | 10,700 | 45.00 | 0.10 | 0.54 |
| Total or Median |  |  |  |  | 125,000 |  | 0.15 | 0.74 |
|  |  |  |  |  |  |  |  |  |
| $\mathrm{CB}=$ Contrarian Buy, Stock Price may in downtrend compared to 200-day average. |  |  |  |  |  |  |  |  |
| McDep Ratio = Market cap and Debt to present value of oil and gas and other businesses |  |  |  |  |  |  |  |  |
| Estimated present value presumes a long-term price for oil of US\$100 a barrel and natural gas, \$6 a million btu. |  |  |  |  |  |  |  |  |

A Weekly Analysis of Large Cap Oil and Gas Stocks
September 11, 2012

Table 3

| able |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| McDep Large Cap Energy Stocks |  |  |  |  |  |  |  |  |
| Value Multiples and Dividend Yield |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  | Price | Adjustd |  |  |  |  |
|  |  |  | (US\$/sh) | Resrvs/ | PV/ | EV/ |  | Dividend |
| Symbol/Rating <br> $\mathrm{B}=$ Buy, CB (see below) |  |  | 10-Sep | Prod | Ebitda | Ebitda | P/E | NTM |
|  |  |  | 2012 | NTM | NTM | NTM | NTM | (\%) |
| U.S. and Europe Integrated |  |  |  |  |  |  |  |  |
| BG Group plc | BRGYY |  | 20.38 | 8.6 | 7.5 | 7.3 | 13 | 1.2 |
| Exxon Mobil Corporation | XOM | B | 89.48 | 13.1 | 7.7 | 6.5 | 11 | 2.5 |
| Royal Dutch Shell ple | RDS-A | B | 70.98 | 10.1 | 6.9 | 5.2 | 10 | 4.8 |
| BP plc | BP |  | 42.04 | 11.4 | 8.2 | 5.1 | 7 | 4.6 |
| Chevron Corporation | CVX | B | 113.96 | 9.2 | 7.1 | 4.9 | 10 | 3.2 |
| Total S.A. | TOT | B | 51.37 | 10.2 | 7.7 | 4.6 | 8 | 5.9 |
| Statoil ASA (33\%) | STO | B | 25.69 | 6.3 | 6.2 | 4.2 | 8 | 4.2 |
| Median |  |  |  | 10.1 | 7.5 | 5.1 | 10 | 4.2 |
| Brazil/Russia/Australia/China |  |  |  |  |  |  |  |  |
| Woodside Petroleum Ltd. | WOPEY |  | 36.27 | 12.7 | 8.7 | 7.3 | 11 | 3.6 |
| Petrobras | PBR | CB | 21.74 | 13.1 | 8.0 | 4.7 | 7 | 4.8 |
| PetroChina Company Ltd (14\%) | PTR | CB | 119.67 | 13.0 | 6.8 | 4.4 | 8 | 4.2 |
| CNOOC Limited (36\%) | CEO |  | 183.40 | 6.6 | 5.2 | 3.9 | 7 | 3.0 |
| Lukoil Oil Company | LUKOY | B | 60.41 | 16.5 | 6.0 | 2.5 | 5 | 3.9 |
| Gazprom (50\%) | OGZPY | CB | 10.27 | 31.2 | 5.5 | 2.3 | 3 | 5.5 |
| Median |  |  |  | 13.0 | 6.4 | 4.1 | 7 | 4.1 |
| U.S. Independent |  |  |  |  |  |  |  |  |
| Southwestern Energy Company | SWN |  | 32.50 | 7.2 | 14.8 | 12.4 | 27 | - |
| Chesapeake Energy Corp. | CHK |  | 19.57 | 10.0 | 11.6 | 10.0 | 29 | 1.8 |
| EOG Resources, Inc. | EOG | B | 112.40 | 9.3 | 7.3 | 6.5 | 24 | 0.6 |
| Anadarko Petroleum Corp. | APC |  | 70.40 | 8.3 | 7.7 | 6.0 | 19 | 0.5 |
| ConocoPhillips | COP | B | 56.18 | 12.7 | 8.2 | 5.6 | 10 | 4.7 |
| Occidental Petroleum Corp. | OXY | CB | 86.32 | 10.0 | 7.5 | 5.6 | 11 | 2.5 |
| Devon Energy Corporation | DVN | CB | 59.37 | 9.7 | 8.3 | 5.4 | 16 | 1.3 |
| Marathon Oil Corporation | MRO | CB | 28.47 | 9.7 | 6.6 | 4.1 | 8 | 2.4 |
| Median |  |  |  | 9.7 | 7.9 | 5.8 | 18 | 1.6 |
| Canada |  |  |  |  |  |  |  |  |
| EnCana Corporation | ECA | B | 22.59 | 8.4 | 14.2 | 10.0 |  | 3.5 |
| Imperial Oil Limited (30\%) | IMO | B | 48.13 | 19.3 | 10.8 | 8.7 | 11 | 1.0 |
| Penn West Exploration | PWE |  | 15.01 | 7.5 | 9.1 | 7.5 | 13 | 7.4 |
| Cenovus Energy Inc. | CVE | B | 34.71 | 12.8 | 8.7 | 6.7 | 16 | 2.6 |
| Canadian Oil Sands Limited | COSWF | B | 21.96 | 19.0 | 10.8 | 5.8 | 9 | 6.5 |
| Suncor Energy | SU | B | 33.26 | 17.1 | 9.3 | 5.4 | 14 | 1.6 |
| Median |  |  |  | 15.0 | 10.0 | 7.1 | 13 | 3.1 |
|  |  |  |  |  |  |  |  |  |
| $\mathrm{CB}=$ Contrarian Buy, Stock Price may be 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, 2013; P/E = Stock Price to |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
| Earnings; PV = Present Value of oil and gas and other businesses |  |  |  |  |  |  |  |  |

A Weekly Analysis of Large Cap Oil and Gas Stocks
September 11, 2012

Table 4
McDep Large Cap Energy Stocks Rank by Enterprise Value to 200 Day Average

$C B=$ Contrarian Buy, Stock Price may be in downtrend compared to 200-day average.

A Weekly Analysis of Large Cap Oil and Gas Stocks September 11, 2012



A Weekly Analysis of Large Cap Oil and Gas Stocks September 11, 2012



A Weekly Analysis of Large Cap Oil and Gas Stocks September 11, 2012

| Index of Recent Research |  |  |  |
| :---: | :---: | :---: | :---: |
|  |  |  |  |
| Stock Ideas |  |  |  |
|  |  |  |  |
| Date | Symbol | Subject | Theme |
| 7-Sep | PEYUF | Peyto Exploration and Develo | Canada Deep Basin Fracker (Income and Small Cap Weekly) |
| 4-Sep | LUKOY | Lukoil | Proven Competitor, Uncommon Value (Meter Reader) |
| 28-Aug | PTR | PetroChina | Pent-Up Profits (Meter Reader) |
| 24-Aug | HGT | Hugoton Royalty Trust | Highest Return for the Next Year (Income and Small Cap Weekly) |
| 21-Aug | TOT | Total | Buy \$100 NPV for \$50 Stock Price (Meter Reader) |
| 17-Aug | HK | Halcón Resources | Billion Barrel Resource Potential (Income and Small Cap Weekly) |
| 14-Aug | APC | Anadarko Petroleum | Raise NPV to \$100 as Growth Trumps Legal Issues (Meter Reader |
| 10-Aug | CLR | Continental Resources | Bakken Billions (ISCW) |
| 7-Aug | SU | Suncor Energy | New CEO, New Focus on Shareholder Return (Meter Reader) |
| 3-Aug | XEC | Cimarex Energy | West Texas Wolfcamp Shale Oil (ISCW) |
| 31-Jul | OXY | Occidental Petroleum | California Oil Growth Accelerates (Meter Reader) |
| 30-Jul | coswF | Canadian Oil Sands Limited | Robust Volume Outlook |
| 27-Jul | RRC | Range Resources | Oil-Enhanced Natural Gas Growth (ISCW) |
| 24-Jul | CEO | CNOOC Ltd. | 60\% Premium in \$21 Billion Deal (Meter Reader) |
| 20-Jul | BRY | Berry Petroleum | Momentum Resuming (Income and Small Cap Weekly) |
| 17-Jul | XOM | Exxon Mobil | Low U.S. Energy Price Outperformer (Meter Reader) |
| 10-Jul | MRO | Marathon Oil | Shale Growth, Dollar Hedge (Meter Reader) |
| 3-Jul | OGZPY | Gazprom | Dividend Double Approved (Meter Reader) |
| 26-Jun | STO | Statoil | Financially Strong Norse Explorers (Meter Reader) |
| 19-Jun | CVE | Cenovus | Deep Oil Sands Growth at Lower Price (Meter Reader) |
| 12-Jun | PBR | Petrobras | Deep Water Oil Growth, Lower NPVto \$45 (Meter Reader) |
| 12-Jun | BRGYY | BG Group | Lower NPVto \$21 (6/12/12 Meter Reader, page 2) |
| 13-Jun | ERF | Enerplus Corporation | Dividend Reduced by Half |
| 8-Jun | SJT | San Juan Basin Royalty Trust | Price Decline Action in SJT and Royalty Trusts (ISCW) |
| 5-Jun | WOPEY | Woodside Petroleum Ltd. | Pluto LNG Delivering (Meter Reader) |
| 25-May | HGT | Hugoton RoyaltyTrust | HGT Bargain (Income and Small Cap Weekly) |
| 18-May | BIREF | Birchcliff Energy | Contrarian Buy at Lower NPV (Income and Small Cap Weekly) |
| 15-May | EOG | EOG Resources | Raise NPV to \$130 a Share on Oil Volume (Meter Reader) |
| 11-May | DMLP | Dorchester Minerals, L.P. | Rising Oil Production (Income and Small Cap Wkly) |
| 8-May | ECA | Encana | Long-Term Natural Gas Appeal (Meter Reader) |
| 4-May | WLL | Whiting Petroleum | Oil Price Discount Narrows (Income and Small Cap Weekly) |
| 1-May | RDS | Royal Dutch Shell | LNG and GTL Profit Gains (Meter Reader) |
| 17-Apr | COP | ConocoPhillips | Largest North American Independent Producer Debut (MR) |
| 10-Apr | DVN | Devon Energy | Shale Oil Excitement at a Favorite Value Stock (Meter Reader) |

For historical research by stock, go to mcdep.com, click on Stock Ideas, click on stock by name.

| Meter Reader |  |  |  |
| :--- | :--- | :--- | :--- |
| 4-Sep | LUKOY | Lukoil | Proven Competitor, Uncommon Value |
| 28-Aug | PTR | PetroChina | Pent-Up Profits |
| 21-Aug | TOT | Total | Buy $\$ 100$ NPV for $\$ 50$ Stock Price |
| 14-Aug | APC | Anadarko Petroleum | Raise NPV to $\$ 100$ as Growth Trumps Legal Issues |

For earlier editions, go to mcdep.com, click on Meter Reader.

## Income and Small Cap Weekly

| 7-Sep | PEYUF | Peyto Exploration and Developmer Canada Deep Basin Fracker |  |
| :--- | :--- | :--- | :--- |
| 31-Aug |  |  | Royalty Trust McDep Opportunities |
| 24-Aug | HGT | Hugoton Royalty Trust | Highest Return for the Next Year |
| 17-Aug | HK | Halcón Resources | Billion Barrel Resource Potential |

A Weekly Analysis of Large Cap Oil and Gas Stocks
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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.

