McDep Associates
Independent Stock Idea
February 27, 2004

Rating: Buy
S&P 500: 1145

Berry Petroleum Company
Classic Oil Asset

Symbol	Price (US$/sh) 26-Feb 2004	Shares (mm)	Market Cap ($mm)	Net Present Value ($/sh)	Debt/ Present Value	McDep Ratio	EV/ Sales NTM	EV/ Ebitda NTM	P/E NTM	Div'd NTM (%)	PV/ Ebitda NTM
BRY	21.34	22.1	470	28.01	0.10	0.79	3.2	5.9	10.2	2.1	7.6

McDep Ratio = **M**arket **c**ap and **De**bt to **p**resent value of oil and gas and other businesses

EV = Enterprise Value = Market Cap and Debt:	US$mm	540
Ebitda = Earnings before interest, tax, depreciation and amortization:	US$mm	91
NTM = Next Twelve Months Ended March 31, 2003; P/E = Stock Price to Earnings		
PV = Present Value of energy businesses:	US$mm	687

Summary and Recommendation

We recommend current purchase of the common shares of small cap oil producer Berry Petroleum as we raise our estimate of present value to $30 a share from $22. The company is an asset jewel that could shine brightly in any further upward revaluation of oil. Berry has a concentrated position in a giant field, Midway Sunset, producing near a record rate practically a hundred years after initial discovery. Long-life reserves have long been underestimated by the conservative independent engineer, DeGolyer and MacNaughton. The company has practically no debt, applies cautious accounting that expenses dry holes and pays a strong dividend. Suffering through difficult times, honest and competent management has proven itself on the downside while positioning Berry to benefit on the upside.

Raise Present Value to $30 a Share

Volume increases and price increases boost our estimate of next twelve months cash flow, the starting point for estimating present value. Berry reported record oil volume for the fourth quarter last year that we use as our estimate for 2004 (see Table). Management expects further increases in volume to carry the 2004 average up another 10% or so. On the price side, one-year oil futures surged through $32 a barrel pointing to higher realizations for Berry's heavy California grade.

On new cash flow estimates, Berry's multiple of present value to cash flow looked out of line on the old basis. We compare peer companies regularly and occasionally publish the

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rankings (see *Meter Reader*, February 24, 2004, Table 2-3). In addition we got confirmation in management's recent disclosure that proven reserves increased enough to maintain the same long life on higher volume. To bring cash flow multiple more in line with reserve life we raised our estimate of present value.

Berry Petroleum Company
Quarterly Results

	Q1	*Q2*	*Q3*	*Q4*	*Year*	*Year*	*Next Twelve Months*
	3/31/03	*6/30/03*	*9/30/03*	*12/30/03*	*2003*	*2004E*	*3/31/05*
Volume							
Oil (mb)	1,384	1,401	1,516	1,707	**6,008**	**6,789**	**6,771**
Oil (mbd)	15.38	15.40	16.48	18.55	**16.46**	**18.55**	**18.55**
Price							
WTI Cushing ($/bbl)	34.03	29.07	30.22	31.19	**31.13**	**32.87**	**31.74**
Differential	9.80	8.00	8.15	6.51	**8.49**	**6.86**	**6.62**
Company	24.23	21.07	22.07	24.68	**22.64**	**26.00**	**25.12**
Revenue ($mm)							
Oil	34	30	33	42	**139**	**177**	**170**
Other	0	0	(0)	(3)	**(3)**	**-**	
Total	34	30	33	39	**136**	**177**	**170**
Expense							
Lease operating	13	16	17	15	**61**	**68**	**68**
General and administrative	2	2	2	3	**10**	**12**	**12**
Total	16	18	19	18	**70**	**79**	**79**
Ebitda	19	12	15	21	**66**	**97**	**91**
Exploration	3	-	-	2	**4**		**4**
Deprec., Deplet., & Amort.	5	5	5	6	**21**	**27**	**27**
Other Non Cash	2	0	(1)	0	**2**	**-**	**-**
Ebit	12	7	10	13	**42**	**66**	**60**
Interest	0	0	0	1	**1**	**2**	**2**
Ebt	12	7	10	12	**40**	**64**	**58**
Income Tax	3	0	2	1	**6**	**13**	**12**
Net Income ($mm)	9	7	8	11	**34**	**51**	**46**
Per Share ($)	0.42	0.30	0.36	0.48	**1.56**	**2.31**	**2.09**
Shares (millions)	22	22	22	22	**22**	**22**	**22**
Lease operating ($/bbl)	9.54	11.13	10.88	9.02	**10.10**	**10.00**	**10.00**
General and admin ($/bbl)	1.66	1.71	1.32	1.70	**1.60**	**1.70**	**1.70**
Deprec., D,& A ($/bbl)	3.25	3.35	3.43	3.63	**3.43**	**4.00**	**4.00**
Ebitda Margin	54%	40%	44%	53%	**48%**	**55%**	**53%**
Tax rate	22%	3%	18%	12%	**15%**	**20%**	**20%**

Engineer's Present Value Also Rises

Calculated by strict impartial criteria, Berry's present value of future cash flow increased 18% to $687 million at year end according to DeGolyer and MacNaughton (D&M). At a

time of increased scrutiny of internal estimates, Berry management points out that the same outside expert has estimated Berry's reserves since 1984.

The present value calculation mandated by the Securities and Exchange Commission necessarily makes simplifying assumptions for the sake of comparability. Though all the details are not disclosed we approximate the engineer's calculation (see Table).

Approximation of Engineer's Present Value Calculation

Volume Decline (%/yr):	5	Capex/Cash Flow (%):	8
Volume Enhancement (%/yr):	5	Price Escalation (%/yr):	0.0
Fixed Cost ($mm):	40	Discount rate (%/yr):	10.0

Year	Basic (mmb)	Volume Enhanced (mmb)	Total (mmb)	Price ($/bbl)	Revenue ($mm)	Fixed Cost ($mm)	Var Cost ($mm)	Cap Ex ($mm)	Cash Flow ($mm)	Disc Factor	Present Value ($mm)
Total 2005 through 2024; years ending on 3/31											
	87	23	110	25.77	2835	800	637	53	1344	0.51	687
2004	6.77		6.77	25.77	174	40	39	8	88	0.95	84
2005	6.43	0.34	6.77	25.77	174	40	39	8	88	0.87	76
2006	6.11	0.66	6.77	25.77	174	40	39	8	88	0.79	69
2007	5.81	0.97	6.77	25.77	174	40	39	8	88	0.72	63
2008	5.51	1.26	6.77	25.77	174	40	39	8	88	0.65	57
2009	5.24	1.53	6.77	25.77	174	40	39	8	88	0.59	52
2010	4.98	1.79	6.77	25.77	174	40	39	8	88	0.54	47
2011	4.73	1.70	6.43	25.77	166	40	37		89	0.49	43
2012	4.49	1.62	6.11	25.77	157	40	35		82	0.44	37
2013	4.27	1.54	5.81	25.77	150	40	34		76	0.40	31
2014	4.05	1.46	5.51	25.77	142	40	32		70	0.37	26
2015	3.85	1.39	5.24	25.77	135	40	30		65	0.33	22
2016	3.66	1.32	4.98	25.77	128	40	29		59	0.30	18
2017	3.48	1.25	4.73	25.77	122	40	27		54	0.28	15
2018	3.30	1.19	4.49	25.77	116	40	26		50	0.25	12
2019	3.14	1.13	4.27	25.77	110	40	25		45	0.23	10
2020	2.98	1.07	4.05	25.77	104	40	23		41	0.21	9
2021	2.83	1.02	3.85	25.77	99	40	22		37	0.19	7
2022	2.69	0.97	3.66	25.77	94	40	21		33	0.17	6
2023	2.55	0.92	3.48	25.77	90	40	20		29	0.16	5

The engineer's total, $687 million, translates to $28 a share. Rarely would we estimate a present value lower than that of D&M. Let us use the engineer's analysis as a framework for discussing factors that could be better or worse.

Berry's chief executive officer, Jerry Hoffman reminds investors that D&M assume that current production techniques will recover 65-70% of original oil in place, most of which has already been produced. Pointing to other producers who may expect to achieve 70-

75% recovery, Mr. Hoffman says on that basis Berry's remaining recoverable reserves would be 25 million barrels, or some 23% higher.

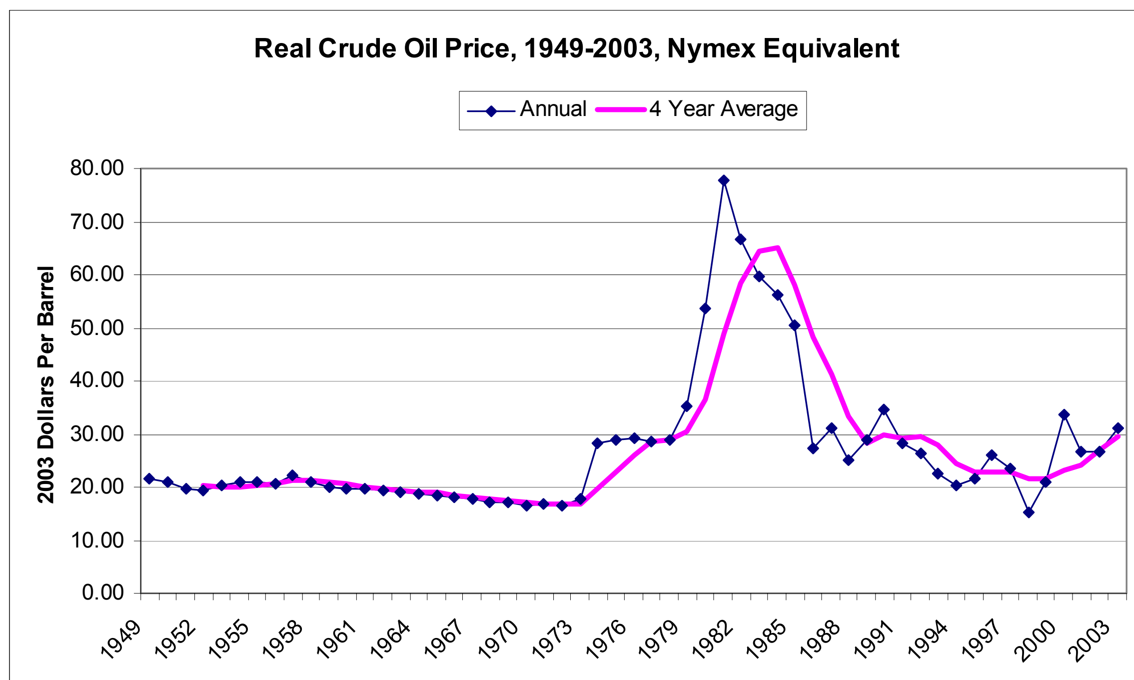
Future oil price will undoubtedly not be constant. The number used represented the actual price received at year end. Current one-year futures imply a higher price for 2004. Current six-year futures imply lower prices in the years ahead.

The ten percent a year discount rate is too high when the risk-free real rate is less than 2%. Assume a 5% real rate for example and present value increases to $927 million or $39 a share.

Of course, income taxes must be paid. Yet, the tax code encourages risk taking with rapid expensing and in Berry's case, special tax credits for enhanced oil recovery. For a company that is investing actively, the after tax rate of return might even exceed the pre-tax rate of return. Nonetheless the premise of the discounted cash flow calculation is to cover proven reserves, not new projects. As a result, leaving out taxes overstates present value, but not by as much as one might normally expect.

Pure Play on Oil Price

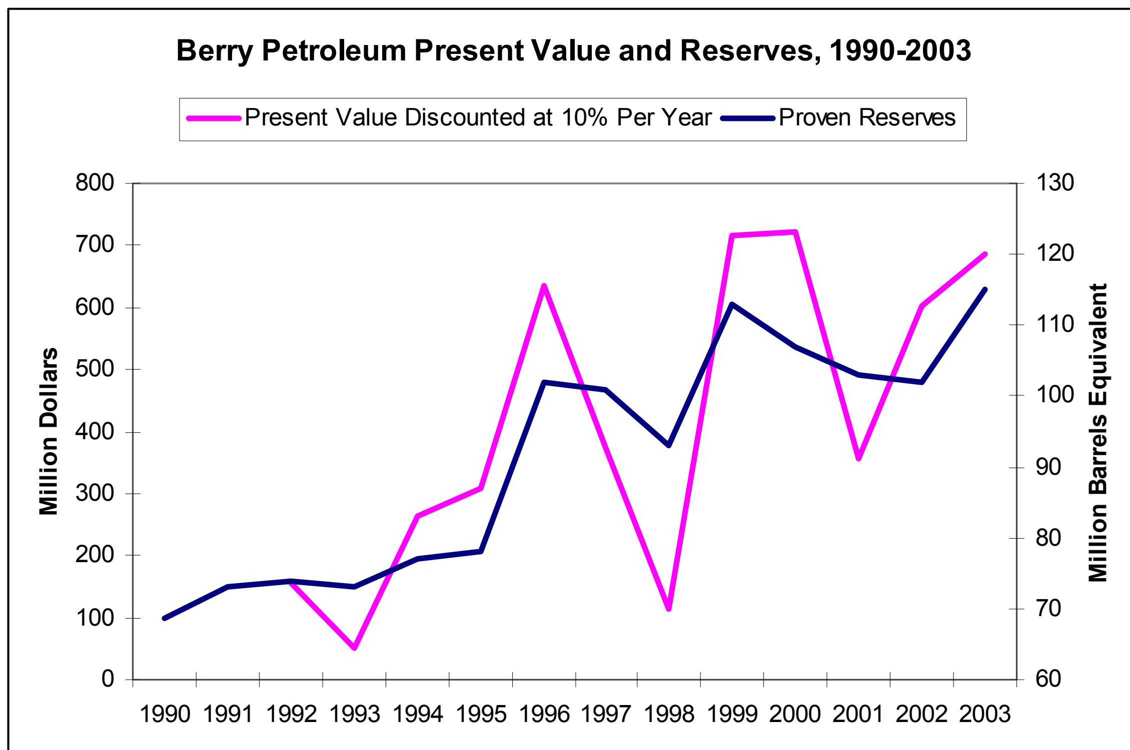
An extra reason to emphasize investment in Berry today is a sense that oil price may surprise further on the upside. We have been expressing that view in different ways including the chart below from *Meter Reader*, Oil Looks Higher, January 21, 2004.



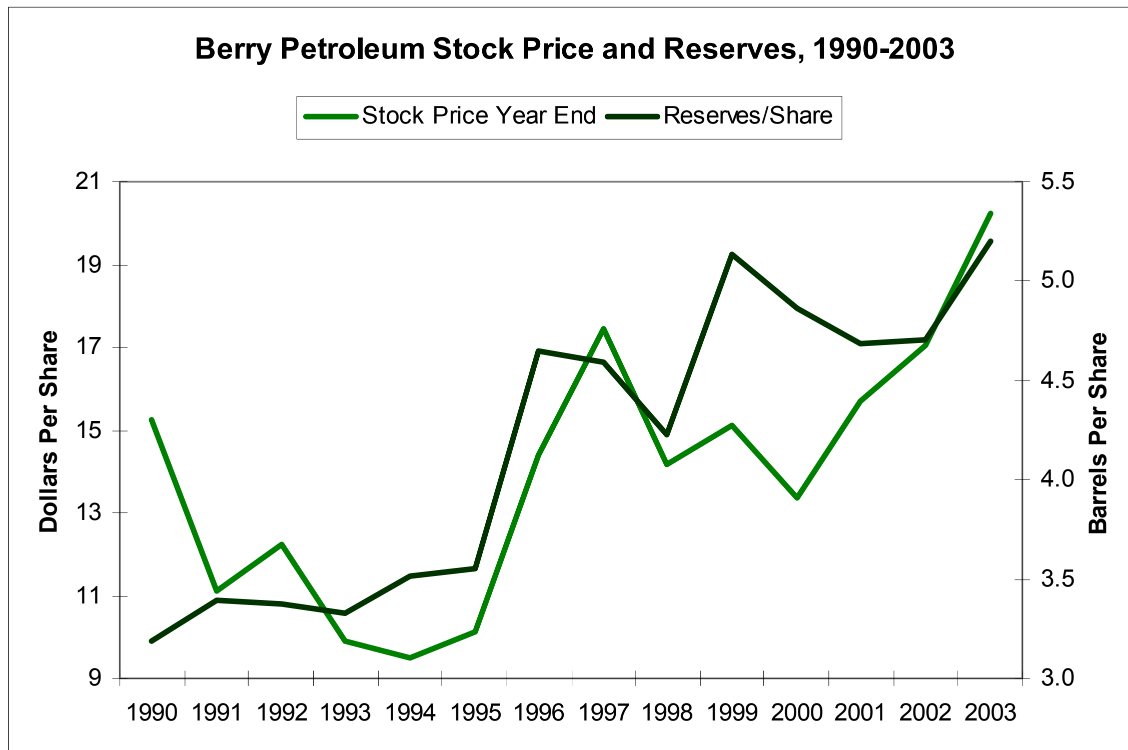
Practically the whole experience of current Berry management is in the $20 to $30 oil price band of the past 15 years. Perhaps we will remain in that band. Chances of falling much below that band for a sustained period are nil by the experience of the past fifty years. About 15% of the time for the past fifty years oil has been above the stable band. With the cycle pointing up now, the probability of oil moving higher sooner may be 50% or more. Those are good investment odds. The stock appears priced for no more than recent historical experience and the odds seem high that the future could be more favorable.

Low Oil Price Stress Test

As attractive as Berry's prospects may be there has been volatility in the past. Not only is Berry sensitive to the industry benchmark price of light, sweet crude oil, it is also sensitive to the differential between the benchmark and the California price of Berry's heavier grade. During the low oil price dips of 1993 and 1998, present value calculated on year end price vaporized (see Chart). Reserves displayed a steadier trend.



Investors were more sophisticated and Berry's stock held up reasonably well. We attribute that to a conservative financial policy of almost no debt and a responsive management that kept costs under control as best as could be expected. When we track stock price and reserves per share we see that Berry achieved real growth in the tough environment (see Chart).



California Natural Gas and Electricity Crisis Stress Test

Most of Berry's oil production is near its headquarters in Bakersfield, California. Clarence J. Berry, who founded the company in 1909, grew up on a farm down the San Joaquin Valley a little ways near Fresno. Not until after he made his first fortune finding gold in the Yukon Territory did Mr. Berry discover black gold near home.

While the San Joaquin Valley has some of the largest oil fields in the U.S., the quality of the oil is mostly heavy and the main method of production is to heat the oil underground by injecting steam. Energy to generate steam was originally supplied by the oil produced until the state passed environmental restrictions that essentially required the steam to be generated by burning natural gas. To offset some of the costs of steam, Berry generates electricity with natural gas and uses just the waste heat to generate steam used in oil recovery. As a result, Berry's profits are sensitive to the price of natural gas for fuel and the price of electricity as an offset.

In 2000-2001 Berry was hit by the double whammy of high natural gas price and bankrupt electricity purchasers. For awhile it looked like electricity price more than made up for high natural gas price until Berry got stuck holding a $25 million bag of unpaid receivables. Once again a conservative financial structure and adaptive

management carried the company through the crisis. Natural gas price receded and Berry eventually collected much of what was owed to it for electricity.

Today Berry remains vulnerable to natural gas price. The extreme conditions of natural gas relative to oil and electricity relative to oil may not be repeated. Yet we do expect natural gas price to trend higher relative to oil. We further expect that the price of electricity will cover the price of natural gas. Berry will also be careful to sell to electricity buyers who are more likely to remain solvent.

On balance, the capacity to generate electricity offsets natural gas exposure. Hopefully, the next time the situation goes extreme Berry makes a lot of money generating electricity and actually gets paid for it. Our projections treat electricity revenues as a reduction of the cost of oil production taking no explicit credit for any extra profits that may accrue.

Stock Price Lagging Growth Record

Despite the ups and downs of the past decade, Berry has managed to increase reserves per share by about 5% per year. That is real growth as we are measuring those reserves in barrels. In addition Berry stock has paid about 4% per year in dividends for a total 9% per year in real growth or real return.

At the same time, the value of reserves has increased in dollars per barrel. The price derived from D&M numbers more than doubled in ten years for a rough escalation rate of 7% per year. As a result, dollars of reserves per share compounded at about 12% per year.

Yet stock price only tracked real growth at about 5% per year without any recognition of price gains. Undoubtedly part of that reflects skepticism that last year's oil price will be sustained. Nonetheless, stock price seems to be lagging and ought to be closer to our present value of $30 per share.

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