MUSINGS FROM THE OIL PATCH
December 26, 2007

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Note*: Musings from the Oil Patch reflects an eclectic collection of stories and analyses dealing with issues and developments within the energy industry that I feel have potentially significant implications for executives operating oilfield service companies. The newsletter currently anticipates a semi-monthly publishing schedule, but periodically the event and news flow may dictate a more frequent schedule. As always, I welcome your comments and observations.* Allen Brooks

A Changing Oil Service Industry: Only 2008 or Forever?

Do these events foreshadow a wave of further industry restructuring moves?

The wheels of change are at work in the oilfield service industry. The pre-Christmas week brought lots of news, events and surprises that signal potentially significant changes are underway for this industry. The question for investors and industry players is: Do these events foreshadow a wave of further industry restructuring moves, or do the events of last week merely marking a year-end peak in deals?

Whenever a long-standing oilfield service CEO of the caliber of Shel Erickson steps aside to elevate a younger leader, it is real news

On Friday, December 14, Cameron International (CAM-NYSE) announced a new senior management lineup to run the company beginning in April of next year. On the surface, one would not necessarily make much of a management change. Generally, it just reflects the natural evolution of corporations. However, whenever a long-standing oilfield service CEO of the caliber of Shel Erickson steps aside to elevate a younger leader, it is real news. Cameron announced not only that Jack Moore, currently president and chief operating officer, would assume the CEO's position April 1, 2008, but also that Charles Sledge would step up from his VP and controller role to become the new chief financial officer. That latter step was not a total surprise as it reflects a typical pattern of a new boss wanting his "own" CFO, but the change was probably helped along by the incumbent CFO seeking a change of pace. Both Mr. Erickson and CFO Franklin Myers will see Cameron through its year-end reporting requirements before ending their terms of responsibility. Mr. Erickson will stay on as chairman and Mr. Myers will become a senior advisor on financial matters and M&A.

Possibly of greater significance for the evolution of the oilfield service industry were two major acquisition announcements last week. The first, and larger transaction, was the acquisition by National Oilwell Varco (NOV-NYSE) of Grant Prideco (GRP-NYSE). The other was the agreement for the private equity firm, First Reserve Corporation, to acquire the Abbot Group plc (ABG-LSE), a significant land and platform drilling contractor, based in Aberdeen, Scotland. Outside of understanding the terms of these deals, understanding the implications for the oilfield service industry's future as a result of them becomes critically important.

NOV will buy GRP for $58 per share in cash and stock, which represented a 22% premium over GRP's closing stock price of $47.46 per share the prior Friday

The blockbuster deal involving NOV and GRP was announced last Monday morning. It combines the leading drilling equipment manufacturer with the dominant drill pipe supplier to create a powerhouse oilfield service company with a combined market capitalization of $32 billion. In the transaction, NOV will buy GRP for $58 per share in cash and stock, which represented a 22% premium over GRP's closing stock price of $47.46 per share the prior Friday. GRP shareholders will receive $23.20 in cash and $34.80 in NOV stock (0.4498 of a share) for their shares. This will give GRP shareholders a 14% equity ownership in the combined company. NOV will issue a total of 57 million new shares worth roughly $4.4 billion, along with paying $3 billion of cash. The transaction will be treated as a tax-free exchange for GRP shareholders. Based on the assumption of $40 million in annual cost savings due primarily to the elimination of the corporate office and public company expenses, GRP's earnings should make the transaction immediately accretive to NOV's financial results.

We were quite intrigued with certain of the comments attributed to GRP's Chairman and CEO Mike McShane

We were quite intrigued with certain comments attributed to GRP's Chairman and CEO Mike McShane in the press release announcing the transaction with NOV and echoed later that morning by him in a conference call with investors and analysts to discuss the terms of the deal. Mr. McShane was quoted in the press release as saying, "This is a great transaction for our shareholders in which they realize a significant premium and have the opportunity to participate in a larger, more diverse company. We are looking forward to a successful combination with National Oilwell Varco. The combination with a world class organization such as National Oilwell Varco will provide better opportunities for continued growth of our product lines and for our employees."

Our interest was drawn particularly to the phrases "opportunity to participate in a larger, more diverse company" and "will provide better opportunities for continued growth of our product line and for our employees"

Our interest was drawn particularly to the phrases "opportunity to participate in a larger, more diverse company" when describing one of the benefits of the deal for GRP shareholders, and "will provide better opportunities for continued growth of our product line and for our employees." We know, based on his response to an analyst's question on the conference call, Mr. McShane is expecting some "near-term" business softness, or "headwinds" as others describe the outlook. In that light, we were wondering if Mr. McShane's statements mean that for GRP, even though it had a $6 billion market capitalization before the transaction was announced, in order to grow and prosper in the future it needed to be a much larger enterprise.

The earnings per share growth rates for 2008 over 2007 projected by Lehman were 11% for GRP and 32% for NOV, almost a three-to-one ratio

GRP, based on the latest analyst report from Lehman Bros. and the closing stock price on the Friday before the announcement, was trading at a multiple of 11.5x the company's estimated 2007 earnings per share (EPS) of $4.11. It was at 10.4x Lehman's 2008 EPS estimate of $4.55. At the same time, NOV was trading at 20.4x its 2007 EPS estimate ($3.80) and 15.5x the 2008 EPS estimate ($5.00). The ratio of these multiples is 1.77 and 1.49 for 2007 and 2008, respectively. The earnings per share growth rates for 2008 over 2007 projected by Lehman were 11% for GRP and 32% for NOV, almost a three-to-one ratio. Looked at on the measure of enterprise value to earnings before interest, depreciation and amortization (EV/EBITDA) in 2008, GRP was trading at 6.9x and NOV at 8.7x before the deal was announced. Both valuations are healthy. Based on all these valuation measures, we can understand why Mr. McShane was waxing eloquently about this transaction. Of course, based on his comments about near-term headwinds, one might wonder what shade of lipstick Mr. McShane was employing during his negotiating.

While the last statement may be considered a harsh judgment, we have known Mr. McShane for many of his 30 years in the oil patch. He is acknowledged, and we certainly concur with the judgment, to be one of the top managers in this highly cyclical energy sector. He has been through numerous industry cycles during his career, and he knows what it takes to survive and be positioned to fight again another day. Now, if our interpretation of Mr. McShane's observation about the need to be a bigger and more diverse oilfield service company going forward is correct, we wonder the meaning for the rest of the industry?

His justification for more mergers is that oilfield service companies need to acquire more technology and strengthen their balance sheets in order to compete in the future oilfield market he foresees

Only a few days before the deal was announced, Chad Deaton, Chairman and CEO of Baker Hughes (BHI-NYSE), speaking at the Deloitte Oil & Gas Conference, said that oilfield service companies will have to consolidate in order to win more business from state-owned oil companies in the Middle East and elsewhere. His justification for more mergers is that oilfield service companies need to acquire more technology and strengthen their balance sheets in order to compete in the future oilfield market he foresees. His vision of the future assumes a greater role for Middle Eastern national oil companies, who prefer to contract with oilfield service companies rather than with international oil companies for help in developing their indigenous oil and gas resources. Since these countries have the bulk of the world's yet-to-be-produced hydrocarbons, how best to develop them while still retaining control over the pace has become a challenge. By going with service companies over international producers, the natural conflict over the pace of development is eliminated. But the technological demands in developing these massive fields is dictating that service companies possess a wider range of products and services plus have larger balance sheets in order to finance the working capital and R&D the projects are consuming. Given the timing of Mr. Deaton's statement and the GRP/NOV deal, one wonders whether he suspected something was about to happen – or maybe he had looked at GRP beforehand.

We believe there are a number of smaller acquisition candidates that would tuck neatly into Halliburton, expanding both its product and service offerings and geographic scope

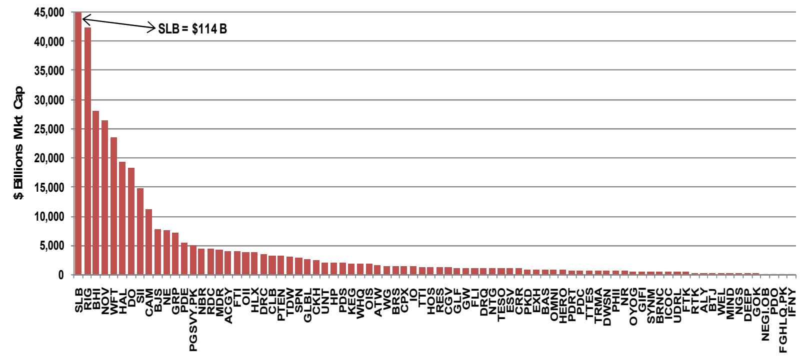
Mr. Deaton's company, Baker Hughes, has been rumored as a take-over candidate for a good part of this year. The supposed buyer is Halliburton (HAL-NYSE), but we wonder why Dave Lesar, Halliburton's chairman and CEO, would want to go through another re-shuffling of his company's business portfolio such as occurred following the acquisition of Dresser Industries. While Halliburton's oilfield and Brown & Root businesses ultimately benefited from the Dresser acquisition, the internal turmoil in deciding which of the competing oilfield service divisions to keep and how to meld Kellogg into B&R took its toll on management. It also didn't help that Dresser was tainted by asbestos, which nearly destroyed Halliburton. (We are not suggesting that Baker Hughes might have any toxic businesses.) We believe there are a number of smaller acquisition candidates that would tuck neatly into Halliburton, expanding both its product and service offerings and geographic scope. With Halliburton's new management lineup moving into place at the start of 2008, we'd suggest standing back and waiting to see what happens.

However, a wait-and-see strategy could be more difficult for many of the smaller companies. In the 1970s the oilfield service industry was dominated by two giants – Schlumberger (SLB-NYSE) and Halliburton – and a raft of much smaller companies. As Baker Oil Tools and Dresser Industries, to name a few, grew through acquisitions, the shape of the industry was restructured. It evolved into an industry dominated by four large, diversified companies and a slew of smaller, more narrowly-focused companies. When Halliburton swallowed up Dresser, one of its large peers, the door was opened for one or more smaller companies to expand into the top tier of the industry. While Smith International (SII-NYSE) grew by acquisitions, the company that leapfrogged all the others as a result of its aggressive growth strategy developed and executed by former management consultant Bernard Duroc-Danner was Weatherford International (WFT-NYSE).

Today, the oilfield service industry is dominated by one giant firm, Schlumberger, with $114 billion in market cap

Today, the oilfield service industry, comprised of 82 public companies, is dominated by one giant firm, Schlumberger, with $114 billion in market cap. Transocean (RIG-NYSE), after its GlobalSantaFe merger is second with $42 billion, followed by seven companies in the $10-$30 billion range. There are five companies with $5-$10 billion market caps with the rest of the industry evenly split between $1-$5 billion and sub-$1 billion market caps. Many of these small companies, we affectionately refer to as "pygmies" because they have only a few hundred million in revenues and market caps and usually possess limited product and service lines and/or regional footprints. With international markets driving future market growth opportunities, small, narrowly-focused oilfield service companies will need to grow and expand in order to play in this dynamic international marketplace. Additionally, there is increased competition from foreign oilfield service companies that will make the bottom segment of the industry population of companies much more competitive than in the past. In our view, mergers and acquisitions are destined to become a more dominant trend in the industry.

Exhibit 1. Oil Service Industry Dominated By A Few Large Caps



Source: Yahoo Finance, PPHB

First Reserve sees Abbot, with its international presence, as a solid platform company upon which to build a global land drilling company

In that light, late last week the oldest and largest private equity fund, First Reserve Corporation, announced an offer to purchase the UK-based land and offshore platform drilling contractor, Abbot Group for $1.82 billion plus the assumption of $1.1 billion in liabilities. The founder of the Abbot, Alasdair Locke, is putting $50 million of equity into the First Reserve acquisition vehicle, which suggests he wants to stay actively involved in the company but probably was tired of running a publicly-traded company. Several of the principals of First Reserve indicated that their vision of the future growth for the energy industry is outside of the Americas and heavily dependent upon the drill bit. They see Abbot, with its international presence, as a solid platform company upon which to build a global land drilling company, and First Reserve is committing funds to enable Abbot to grow in international markets such as Russia, the Caspian area, the Middle East and North and West Africa. At the present time, Abbot operates platform rigs in the North Sea, the Caspian and offshore Sakhalin. It has land rigs in Europe, Russia, North and West Africa and Asia/Pacific. It also operates mobile drilling units in the Middle East, West Africa, Mexico, Pakistan and Asia/Pacific.

According to information from Capital IQ, an investment data source, the implied EV/EBITDA ratio is 15.4x

What are astounding about the Abbot deal are the transaction parameters. According to information from Capital IQ, an investment data source, the implied EV/EBITDA ratio is 15.4x. That is almost exactly two times the mid-point of the range of EV/EBITDA values at which GRP and NOV were trading before their deal was announced. One caveat to this information is that Abbot, like most UK-listed companies, only provides financial results twice a year. Therefore, the latest financial information about Abbot is based on its June 30, 2007 results. For the first half of 2007, Abbot reported revenue of $686 million and EBITDA of $97 million. Both measures were up about 55% over the comparable period in 2006. With more rigs working and higher day rates, it is reasonable to expect Abbot's revenue and earnings to continue to grow over the next several years.

The GRP/NOV and Abbot transactions boost the 2007 oilfield service industry mergers and acquisitions totals and make for

The GRP/NOV and Abbot deals would boost the adjusted industry M&A transaction value by over 40%

another active banking year. Prior to these deals, according to a December 6th report from CIBC World Markets, there had been 49 oilfield service transactions of over $10 million in value announced in 2007 year-to-date, totaling $40.1 billion. If the Transocean/GlobalSantaFe (RIG-NYSE) deal is excluded, the deal total falls to 48 with the monetary value of the transactions about $22.7 billion. The GRP/NOV and Abbot deals would boost the adjusted industry M&A transaction value by over 40%. The CIBC report highlights that 2007 has been an active year for M&A deals in the oilfield service industry. Although the total number of deals in both 2006 and 2005 were greater than this year, 56 and 51 transactions, respectively, the value of the transactions was considerably less at $8.8 billion and $2.5 billion. The $64-question is: Will 2007's transaction dollar value represent a peak or will 2008 continue these mega-deals?

The GRP/NOV deal follows on the heels of the recently closed merger involving Transocean and GlobalSantaFe that created the world's largest offshore drilling contractor with a fleet of 146 mobile rigs, 20,000 employees and sufficiently strong enough to payout $15 billion in the form of a share repurchase. Like the most recent deal, the justification for that earlier transaction was strategic. In virtually every offshore rig combination, the only costs that can be eliminated are corporate overhead, which represents a relatively small savings. The Transocean deal is projected to generate between $100-150 million in annual cost savings by 2010 for a company with $5.9 billion in trailing 12 month revenues and an enterprise value of $41 billion. Likewise, the GRP/NOV deal will only save $40 million.

An article discussing the GRP/NOV deal suggested that the $40 million of cost savings was worth about $300 million to shareholders today, which means that NOV shareholders were overpaying by $1.1 billion

An online financial commentary article discussing the GRP/NOV deal suggested that the $40 million of cost savings was worth about $300 million to shareholders today, which means that NOV shareholders were overpaying by $1.1 billion when they agreed to a 22% premium over Grant's share price. However, this may be one of those deals where the resulting future value of the combined company may be substantially greater than presently imagined. Of course, if global oil prices fall next year, as some people think, many NOV shareholders may wind up questioning the judgment of Pete Miller, the chairman and CEO of NOV, in making this deal now.

If this industry cycle will last for many more years, can anyone truly over-pay for an asset acquisition?

At the end of the day, the overarching issue is whether Pete Miller and the principals at First Reserve are visionaries or drinking the same kool-aid. After a string of extremely strong years, fundamentally, stretching from 2002 to through 2006, this year has produced a mixed environment. If, as the perma-bulls believe, this industry cycle will last for at least another five years and maybe ten or more, then the question becomes how to position your company for the shift in industry focus from North America to international markets. Moreover, if this industry cycle will last for many more years, can anyone truly over-pay for an asset acquisition? If healthy long-term growth is locked in, then strategic buys outweigh the need for strict pricing discipline in acquisitions. On the other hand, maybe the current corporate buyers are demonstrating the optimism that was rampant in 1981-1982, just prior to the downturn in the industry.

Many people forget that crude oil prices started to decline in 1982 and equipment utilization started to weaken as the surge in newly built drilling rigs and service equipment began arriving in the marketplace

We think about the 1980s industry scenario every time we hear comments about "headwinds" in 2008. Many people forget that crude oil prices started to decline in 1982 and equipment utilization started to weaken as the surge in newly built drilling rigs and service equipment began arriving in the marketplace. The oilfield service industry, especially the offshore sector, received a shot in the arm in 1983 when the first ever area-wide Gulf of Mexico lease sales occurred resulting in a surge in lease acquisitions. While activity picked up in 1984 due to this pickup in spending, the underlying crude oil fundamentals were falling apart and by 1985 a full-scale oil price war within OPEC was underway. As global oil prices collapsed during 1985, the equivalent of the Great Depression engulfed the petroleum industry. Many of the optimists in the early 1980s ultimately disappeared from the industry. So could the headwinds of 2008 be the equivalent of the early years of the 1980s? We don't know. But our long tenure in this business makes us cautious about embracing the idea that we have entered a "new era."

Global Oil Prices in 2008: Triple Digit or Bust?

From a global perspective – energy, economic and political – the price of crude oil is the more important commodity forecast

The turn of the New Year is the time forecasters dust off their crystal balls to tell us what will happen next year in every imaginable field of interest. For energy, the forecasts that matter the most are: What will be the price of crude oil and natural gas? Since natural gas remains largely a regional fuel, its price trend has implications for oilfield activity in certain geographic markets, but not necessarily the worldwide. True, natural gas is very important for the North American oilfield market, but from a global perspective – energy, economic and political – the price of crude oil is the more important commodity forecast.

A recent article in *The Wall Street Journal* highlighted the growing consensus view that global oil prices will be higher in 2008 and that consumers will face rising gasoline prices at the pump, too. The consensus forecast concludes that higher crude oil prices will come despite a likely slowing in economic activity in 2008. And we all know why that is the case: the growing populations and economies of India and China! According to the article, the most recent months' price trends have demonstrated just how decoupled the oil market has become from the economic ups and downs of the U.S.

Oil forecasters are issuing new price forecasts calling for higher average oil prices in 2008

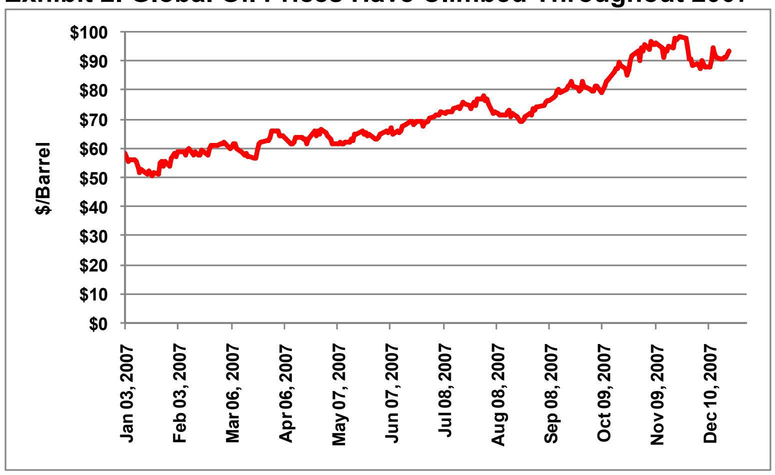
Oil forecasters are issuing new price forecasts calling for higher average oil prices in 2008. This follows on a year marked by a spectacular rise in crude oil prices. In fact, 2007 may have been one of the most spectacular years for crude oil price increases since the 1970s. The year started with the near-month crude oil futures contract priced at $58.32 per barrel at the end of the first day of 2007. By the end of last week, the same futures contract's price closed at $93.31. In between, the contract's price sank to a low of $50.04 in mid January and reached a closing high of $98.18 on

November 23. Crude oil traded at an all-time high of $99.29 intraday in electronic trading on November 21.

“We think $100 per barrel oil is on the horizon in 2008, perhaps in spring”

Brian Hicks, the co-manager of the Global Resources Fund says, “We think $100 per barrel oil is on the horizon in 2008, perhaps in spring.” The fascination of predicting when crude oil futures prices will crack that triple-digit barrier is taking hold over many forecasters. About 54% of the 150 commodity investors surveyed by Barclays expect an average price for oil over the next five years to top $100 per barrel, with 27% expecting prices to be in the $80-$100 range. Since crude oil prices will average somewhere in the low to mid $70s this year, over 80% of commodity investors are looking for sustained higher crude oil prices.

Exhibit 2. Global Oil Prices Have Climbed Throughout 2007



Source: NYMEX, EIA, PPHB

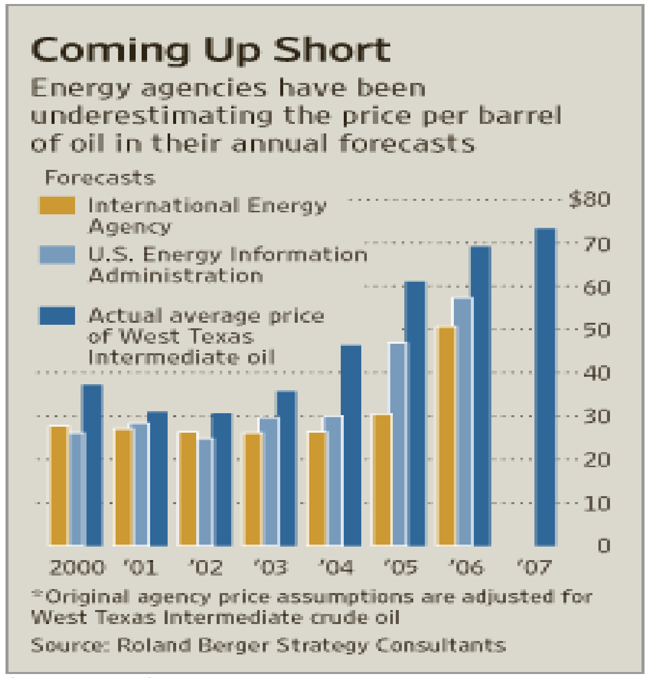
Goldman Sachs Group recently increased its average price forecast and called for oil prices to hit $105 per barrel by the end of 2008

Recently, the U.S. Energy Information Agency (EIA) raised its forecast for oil prices to an average of $84.93, up from its earlier view of $80. The Goldman Sachs Group (GS-NYSE), who seems to have started the global oil price bull market several years ago with its shocking call that prices could spike above $100 per barrel, recently increased its average price forecast and called for oil prices to hit $105 per barrel by the end of 2008. Lehman Brothers (LEH-NYSE) has also boosted its price forecast to an average of $84 a barrel.

The consultants felt that after adjusting for the historic conservatism in the oil price forecasts underlying the Saudi Arabian national budget, as forecasters they were the closest being only off by 12%

The *WSJ* article highlighted research by Roland Berger Strategy Consultants of Munich, Germany that showed the consistent underestimating by the International Energy Agency (IEA) and the EIA of crude oil prices in their forecasts since 1999. According to the research, the IEA missed the actual crude oil price by 27% on average since 1999, while the EIA was on average off the actual price by 22%. The consultants felt that after adjusting for the historic conservatism in the oil price forecasts underlying the Saudi Arabian national budget, as forecasters they were the closest being only off by 12% from the actual price. Based on that methodology, Saudi Arabia appears to be forecasting an average price for its oil of $68 per barrel in 2008, which equates to about $75 a barrel for West Texas Intermediate oil.

Exhibit 3. Oil Price Forecasts Well Off The Mark



Source: ***Wall Street Journal***

Eric Bolling sees oil pricing being very volatile this year with prices ranging from $60 to $120 a barrel, with spikes that could take prices as high as $130

Eric Bolling, an independent oil trader at the NYMEX, was quoted in a news article as saying that the market drivers that propelled oil prices to their record-breaking levels this year would persist for the next 12 months. He said. "It's a weak dollar, it's a strong global economy, it's China growing quickly at 13%. It's been a perfect storm for a commodity bull run. That's going to continue to go. There's no sign of its slowing down, by any means." He sees oil pricing being very volatile this year with prices ranging from $60 to $120 a barrel, with spikes that could take prices as high as $130 a barrel or more in the case of a geopolitical event or supply disruption.

Phil Flynn, a long-time oil price bull, announced to his readers in an early December email that "I am bearish on oil"

In the midst of all this bullishness, we were surprised to see one of the most long-standing bullish crude oil price analysts turn bearish. Phil Flynn, a researcher and oil trader with Alaron Trading, announced to his readers in an early December email that "I am bearish on oil." He followed that statement up with additional emails expounding on his view to his shocked followers. In those emails he reiterated that he remains bullish on crude oil prices for the long term because of all the reasons we know: increases in demand; oil is getting harder to find and increasingly more expensive to deliver to the market; and the possibility that we may be running out of oil. But he cautioned his followers that one has to be a student of oil prices and what has driven them and what will drive them in the future.

In his view, crude oil is due for a bear market, if only for one year – but it will be a "whopper" of a correction

He pointed out that the one thing that has not changed about the oil market is that it is a market of booms and busts. Mr. Flynn pointed out that oil prices will never go in one direction forever. In his view, crude oil is due for a bear market, if only for one year. As he said, for die-hard crude oil bulls, this bear market will be only a correction, but it will be a "whopper" of a correction.

Mr. Flynn went on to discuss how strong the 2007 oil market had been. He pointed out that the price dropped in early January by almost $10 per barrel to about $50 when investors thought that winter was over due to the mild weather. He felt that the oil price drop had made it undervalued at that time. Likewise, late in the year, oil prices soared by roughly $10 per barrel to the upper $90s, which in his view made it overvalued given the weak U.S. housing market, the Federal Reserve interest rate cuts and the weaker U.S. dollar. Now, Mr. Flynn believes that the global economic outlook is the most uncertain it has been at any time since immediately following the events of September 11, 2001.

Possibly the most important consideration underlying his bearish oil market view is the fact we are winning the War on Terror

He went on to state that the outlook for oil demand growth and the increase in global production is the tightest it has been in many years, meaning that OPEC's surplus capacity could grow significantly after several years of decline to the lowest level since the 1970s. The weakening in global oil demand is becoming more likely as U.S. and now European economic forecasts for 2008 are being revised lower consistently, and in some case significantly lower. (OECD growth has recently been slashed by over a third from 3% to less than 2%.) Moreover, Mr. Flynn sees the current U.S. dollar weakness ending to be followed by a rebound in the dollar's value during 2008. But possibly the most important consideration underlying his bearish oil market view is the fact we are winning the War on Terror. This war has added a risk premium to crude oil prices that has helped oil prices triple since 9/11. (If you have been paying attention, Iraqi oil exports are now above where they were before the war began.) In Mr. Flynn's view, the high for crude oil prices we experienced in 2007 will be the high we will see in 2008.

What seismic shifts in energy demand as a result of consistently high crude oil prices may be underway that we do not appreciate or even understand?

Our good friend Adam Sieminski, chief energy economist for Deutsche Bank (DB-NYSE), was quoted in the *WSJ* article with an observation about the recent history of oil price forecasters and forecasting. He is quoted as saying, "The graveyard is littered with analysts who have tried and failed so far to call the top in this market." So his tip to forecasters is to "Take the average of everyone's best guess and add 30%." We have always respected Mr. Sieminski's opinion, but in this case, we are tending to side with Mr. Flynn. We think he may be on to the shifts underway in investor psychology that may overwhelm the fundamentals of the crude oil trading market. We also think his view that the crude oil bear market may only last a year could prove correct, as the global population and economic drivers will make demand and supply forces self-correcting. Our real concern, however, is what seismic shifts in energy demand as a result of consistently high crude oil prices may be underway that we do not appreciate or even understand today, i.e., the Black Swan.

2007 Energy Bill Requires A New Smithsonian Wing

The shoot-out at the Capitol Hill Corral over our energy future is over

The shoot-out at the Capitol Hill Corral over our energy future is over. You can all come out from hiding. Those dirty, taxing Democrats bit the dust! Only a few innocent bystanders got hurt, but we haven't checked all the bystanders yet. One unintended consequence, however, is that the nation will need to add on to the Smithsonian Institute in order to preserve all those relics from our profligate energy days – the Lincoln Town Car, the incandescent light bulb and the private business jet, just to name a few. Taking their place in our everyday lives will be small hybrid cars such as the Toyota Prius, compact fluorescent light bulbs and telecommuting executives. By 2020 there could be other energy consuming items consigned to the museum as this new legislation will likely drive energy and food costs higher, along with mandating changes in our energy consuming patterns that we probably do not fully comprehend today.

New CAFE standards dictate that auto fleets achieve an average of 35 miles per gallon by 2020 for passenger cars, SUVs and small trucks, up roughly 40%

The principle changes in U.S. energy consumption will come as a result of mandated conservation requirements for light bulbs, appliances and vehicles and boosting our use of renewable fuels. One of the major mandates in the legislation is an increase in the Corporate Average Fuel Economy (CAFÉ) standards dictating that auto fleets achieve an average of 35 miles per gallon (mpg) by 2020 for passenger cars, SUVs and small trucks, up roughly 40% from the average of today's passenger car standard of 27.5 mpg and the 22.2 mpg standard for trucks and SUVs.

The legislation mandates that refiners use at least 36 billion gallons of "biofuels" by 2022, six times the current consumption level and a fivefold increase over the current fuel mandate created barely two years ago

The Renewable Fuel Standard in the legislation mandates that refiners use at least 36 billion gallons of "biofuels" by 2022, six times the current consumption level and a fivefold increase over the current fuel mandate created barely two years ago. An additional requirement of the biofuel mandate is that at least 21 billion gallons of this fuel are to come from feedstocks other than corn. It is believed that this portion of the mandate will spur the development of ethanol from cellulosic feedstocks such as prairie grass (also known as switchgrass) and wood chips, along with a greater use of biodiesel made from cooking and rendering fats.

So while the Bush Administration's threat to veto the draft legislation, which included revoking tax breaks for oil companies and included new taxes on the oil industry with all the funds being used to subsidize wind and solar energy projects and a mandate that electric utilities produce 15% of their electricity from renewable sources, proved successful in eliminating these actions from the final bill, it seems this legislation will do little to meaningfully address the country's energy self-sufficiency needs. What the legislation is likely to do is boost the cost of energy and food in the U.S., which may or may not help reduce our carbon emissions and our efforts to control global warming.

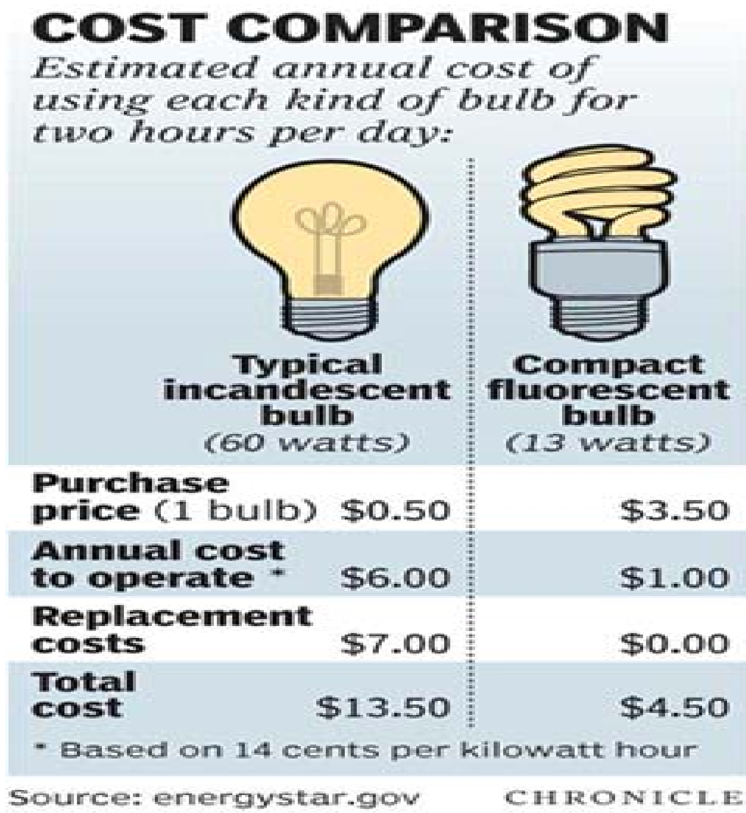
One of the major thrusts of the energy bill is to push conservation as the primary solution to control our ever increasing desire for more energy

One of the major thrusts of the energy bill is to push conservation as the primary solution to control our ever increasing desire for more energy. A principle step in this conservation effort is the banning of the incandescent light bulb that is to be replaced by compact fluoresce lightbulbs (CFLs). We have written quite a bit during the past year about CFLs, based on the science and our own experience with them. Under the law, the incandescent light bulb, which has been the mainstay of the electric power industry since Thomas Edison first produced light using a carbonized thread from his wife's sewing box in 1879, will be replaced by the cone-shaped, spiral CFL beginning in 2012 and completely eliminated by 2014. The benefits of this switch are estimated to be cutting consumers' electricity costs by $13 billion a year by 2020, eliminating the need for 60 mid-size power plants and reducing carbon dioxide emissions by 100 million tons a year.

Consumers remain uncertain about the benefits of the CFL

Consumers remain uncertain about the benefits of the CFL. When these light bulbs are purchased, consumers are faced with sharply higher expenditures – about six times the cost of the traditional light bulb. However, CFLs are projected to last at least five years as compared to a few months for incandescent bulbs. Thus, over the life of the CFL it should save consumers anywhere from $15 to $45 in total electricity expenditures depending on the cost of electricity.

Exhibit 4. CFLs Are More Economical Than Incandescent Bulbs



	Typical incandescent bulb (60 watts)	Compact fluorescent bulb (13 watts)
Purchase price (1 bulb)	$0.50	$3.50
Annual cost to operate *	$6.00	$1.00
Replacement costs	$7.00	$0.00
Total cost	$13.50	$4.50

Source: ***Houston Chronicle***

The electricity savings from CFLs are all in the future and may not materialize if electricity rates continue to rise

There are two problems with CFLs. First, the electricity savings are all in the future and may not materialize if electricity rates continue to rise. Secondly, the range of CFL choices for the multitude of consumer applications is limited just as is the sheer volume of CFLs available. You must use specially made CFLs for lights that have dimmers or photo controls, and there are a number of specific bulb applications for which the CFL manufacturers have not produced alternatives. Additionally, based on our experience, CFLs don't perform well in recessed lights in homes, unless one opts for lower wattage bulbs. Lastly, consumers are still not enamored by the quality of the light produced by CFLs, although the light-quality is slowly improving.

The easiest way for the auto industry to achieve the new CAFE standards is to make smaller and lighter vehicles, not something that Americans will necessarily embrace

One of the fallouts of the new energy legislation will be its impact on the automobile industry and the choices of vehicles we will be offered in the future. The easiest way for the auto industry to achieve the new CAFE standards is to make smaller and lighter vehicles, not something that Americans will necessarily embrace. In contrast to Europe, Americans drive greater distances, more miles a year and haul more people and things. These driving patterns and needs are behind our desire for larger and thus heavier vehicles. According to automobile engineers, reducing the weight of a vehicle by 10% should translate into a 6% fuel economy gain. Obviously, it will be difficult to get a 70% weight reduction in order to achieve a 40% fuel efficiency gain. Thus, we will need to see new engine technologies that are likely to include the greater use of hybrid fuel and combined fuel vehicles, although diesel engines will gain a greater share of the vehicle market, in our estimation. Diesel engines get about 30% greater fuel-economy than do gasoline-powered engines. Notice also that all the top fuel-efficient cars sold in the U.S. this year are made by foreign manufacturers.

Exhibit 5. 2007 Top 10 Fuel Efficient Cars

1. Toyota Prius
2. Honda Civic Hybrid
3. Toyota Camry Hybrid
4. Toyota Yaris
5. Honda Fit
6. Toyota Corolla
7. Mini Cooper
8. Hyundai Accent/Kia Rio
9. Honda Civic
10. Nissan Versa

Source: Edmunds.com, PPHB

One impact of the new CAFÉ standards will be reduced use of conventional steel in vehicles as the auto industry works to get the weight down. Steel accounts for about 60% of a vehicle's weight. For passenger cars, the use of steel has been trending lower for

Expect to see a greater use of high-strength steel as the material's ability to achieve a 25% weight reduction is "cost neutral" for the vehicle manufacturer

many years, but due to the growing popularity of trucks, minivans and SUVs, the average vehicle weight has climbed by 25% over the past 20 years to 4,100 pounds. Ford Motor Company (F-NYSE) says that greater use of aluminum and high-strength steel will help shed 250-750 pounds of weight from vehicles. Expect to see a greater use of high-strength steel as the material's ability to achieve a 25% weight reduction is "cost neutral" for the vehicle manufacturer. By using a similar amount of aluminum, the manufacturer could reduce weight by 45% compared to 10 years ago, but at a higher cost, and with magnesium and carbon fiber materials, weight reductions of up to 60% could be achieved but at substantially higher material costs.

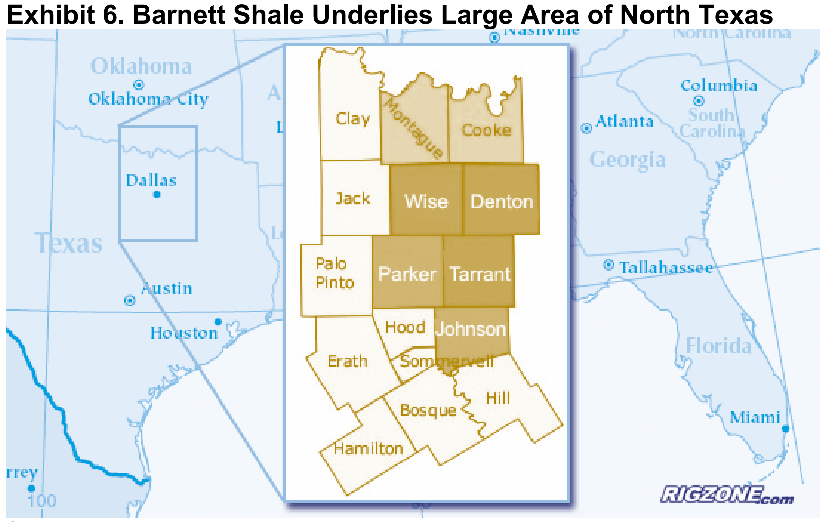
We have yet to see what all the unintended consequences of this new energy legislation will be, but we feel safe in saying that there will be many, but just how significant each will be is unknown. The creation of new mandates and the sponsoring of new industries that produce products current markets would not otherwise support (ethanol for example) will create economic distortions. Once again we will be looking at forces that will alter Americans' energy consumption patterns. To assume that past energy consumption trends will remain a good predictor of future trends could be folly.

Barnett Shale Mixed Views Reflected in Ft. Worth Carols

Seeing a number of rigs at work in the Barnett Shale is always an impressive sight to behold

As we drove to Ft. Worth to spend Christmas with our daughter and her family, once over the rise near Waxahachie on US 287, we saw a number of drilling rigs actively at work drilling holes to extract natural gas contained in the Barnett Shale sands that underlie the Ft. Worth basin. We have experienced this view before (and written about it), but it is always an impressive sight to behold, especially at night.

Exhibit 6. Barnett Shale Underlies Large Area of North Texas



Source: Rigzone.com

In the December 23 edition of Ft. Worth's *Star-Telegram*, the paper ran a section with the lyrics of parodies of Christmas carols and seasonal songs based on local business and national news trends including the subprime crisis, home foreclosures, Senator Hillary Clinton (D-NY) and Senator Kay Bailey Hutcheson (R-TX). On the paper's web site there were audios of three of these parody songs sung by the Rotary Club Chorale at the Rotary Club of Ft. Worth's December 14 meeting. One of the three songs is entitled Barnett Shale and is sung to the tune of Jingle Bells. Unfortunately, the paper did not print the lyrics to this song. Hopefully the link to the web site is still active when you receive this newsletter because the song is cute and reflects the positive mood of the many locals who are benefitting from this drilling boom. (http://www.star-telegram.com/245/story/374674.html)

Exhibit 7. Not Everyone in Ft. Worth Likes Barnett Shale

Source: *Star-Telegram*

The paper printed the lyrics to the other songs including the two songs that reflect a sour mood toward the Barnett Shale drilling boom

At the same time it listed these audios, the paper printed the lyrics to the other songs including the two songs that reflect a sour mood toward the Barnett Shale drilling boom. The lyrics to these songs are listed below. It is clear that the U.S. oilfield service industry is excited about the drilling boom that has been kicked off all across North America for the unconventional gas resources that are contained in trends such as the Barnett Shale. What remains less clear is whether the producers will actually make money from drilling all these unconventional gas shales. Only time and future natural gas prices will confirm whether this effort is a success or not.

Barnett Shale Wonderland*, to the tune of *Winter Wonderland

Money talks, It's so thrillin'
Watch your toes -- we're a-drillin'

With hardly a fight, and no oversight
We're pumpin' out the gas beneath your land.

Safety talk is distractin'
So we just keep on fractin'
If you see a flame, we'll just shift the blame
We're pumpin' out the gas beneath your land.

You're lucky that an oilman is your may-or
Permits can be granted with such ease.
We don't care about any nay-sayer.
We won't stop until your town's Swiss cheese.

Pretty soon, we'll come callin'
Down your street, we'll be haulin'
Your water away, Oh well what the hey
There's money in the gas beneath your land.

On your hiking trail we'll build a well site.
Sorry but the council said we could.
When we're done it'll be a swell site.
We'll chop your trees and you can have the wood.

If it blows, don't come cryin'
Here's a lease - now just sign.
We promise to pay, when we can't say,
There's money in the gas beneath your land.

-- Dan Stachura, Fort Worth

Dang Gas Wells*, to the tune of *Silver Bells

City landscapes, pretty landscapes
Are now choked with debris
As the drillers set up their equipment.
Ugly towers at all hours,
Clang and rattle and wheeze,
And the lights keep the family awake.

Barnett Shale's dang gas wells
Popping up too close to my house.
Hope the dough's worth the woe
People go through every day.

What's that roaring? Water's pouring
From the tankers that roll
Down the side streets like Sherman through Georgia.
Dogs are howling, neighbors scowling
As the noise takes its toll,
And the smell makes you think of decay.

Barnett Shale's dang gas wells
Popping up too close to my house.
Hope the dough's worth the woe
People go through every day.

Precision Drilling Trust Buys NOV's Rig Market View

Last week, Precision Drilling Trust (PDS-NYSE) issued a press release announcing its December 2007 monthly cash distribution along with a year-end special distribution. The special distribution is to be made through a combination of cash and trust units. Investors seemed to be somewhat surprised by the announcement, although the intent of the special distribution is to ensure that the total of distributions declared during 2007 would be equal to the Trust's total taxable income for the year as required under Precision's Declaration of Trust.

Approximately C$260 million will be spent to construct 19 new, high performance drilling rigs most of which will be deployed in the U.S. market

What was particularly interesting besides the distribution declarations was management's announcement of its capital spending plans for 2008. Precision plans to spend C$370 million next year, up 70% from what it spent this year. Approximately C$260 million will be spent to construct 19 new, high performance drilling rigs most of which will be deployed in the U.S. market. The rigs will be constructed over the next six to 18 months. Precision plans to construct several new Super Triple drilling rigs, in addition to several of its Super Single rigs. It also plans to introduce a Super Double rig design in 2008, and we suspect Precision will build one or more of these during its rig newbuilding effort. These high-performance capable rigs are highly mobile and have automation and advanced control systems.

The spending plan also includes C$35 million of carryover expenditures from 2007 to complete three drilling rigs that are all under contract for North American customers plus one additional new Super Single rig for the Alberta oil sands market. Lastly, included in the 2008 budget is C$75 million of expenditures for upgrades to the company's existing drilling and service rig fleets and other drilling equipment. All these expenditures will be made to enhance the lives of the equipment.

Precision is making its initial move into international markets after having exited in the sale of its service business two years ago, by sending one Canadian rig to Latin America to commence work in the first quarter of 2008

As part of the spending plan, Precision plans to step up its rig fleet expansion into the U.S. land drilling market. Additionally, Precision is making its initial move into international markets after having exited in the sale of its service business two years ago, by sending one Canadian rig to Latin America to commence work in the first quarter of 2008. Plans are to accelerate its international drilling rig expansion once the non-compete agreements from the sale of its service business and international drilling rigs to Weatherford (WFT-NYSE) end. This move is not surprising since otherwise, Precision would be left working almost exclusively in the currently weak Canadian drilling market.

With its 2008 budget pronouncement, Precision becomes another oilfield service company staking its long-term future on the growth of the international drilling and production business

According to one analyst who follows Precision's trust units, the company's management believes up to 1,000 of the 1,800 operating rigs in the United States today have the potential to be replaced by newer equipment. If so, this leaves tremendous room for those drilling contractors who are constructing new drilling rigs today, and especially for those new rigs that are highly efficient. This statement about the state of the U.S. rig fleet should not come as a surprise as Precision's new CEO, Kevin Neveu, most recently worked at National Oilwell Varco (NOV-NYSE) and before that for Canadian drilling rig builder Dreco that was acquired by NOV. Clearly, Mr. Neveu believes in the land drilling rig industry's long business cycle and fleet renewal needs as postulated by Pete Miller, the chairman and CEO of NOV. With its 2008 budget pronouncement, Precision becomes another oilfield service company staking its long-term future on the growth of the international drilling and production business.

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