RESERVOIR SOLUTIONS

Published quarterly by Ryder Scott Co. LP April - June 2015/Vol. 18, No. 2

M&A set to recover this year

Mergers, acquisitions and divestitures—frozen since last year's price collapse—are poised to take off this year whether crude stays cheap or climbs. **Brad Simpson**, director of A&D at **Barclays Capital**, said, "If prices recover the second half of the year, then sellers waiting on the sidelines will enter the market. If low prices stabilize, then it is likely distressed sellers will need to sell."

This year, unsure buyers and sellers have wrangled over plunging asset values. Transacting deals later this year may become easier in a potential buyer's market.

In a prolonged low-price scenario, banks will recollateralize loans and tighten credit, forcing some weaker, leveraged companies to liquidate. See article, "Industry braces for reduced borrowing bases," on Page 4.

In late March, **Moody's Investment Services** added 25 oil and gas-companies to its watch list of most financially stressed firms, double the usual number. Companies on the list are often takeover targets.

To remain going concerns, companies were issuing equity to service debt. **Sabine Oil & Gas Corp.** said March 31 that it had fully drawn on its $1 billion revolving credit line and was exploring "strategic alternatives."

Quicksilver Resources Inc., **Dune Energy Inc.** and **BPZ Resources Inc.** filed for Chapter 11 bankruptcy protection in March. **Samson Resources Corp.** said March 31 that it may seek Chapter 11 bankruptcy reorganization.

Joseph A. Mills, CEO at **Eagle Rock Energy Partners LP**, said, "…with the April borrowing base season almost on top of us, we do expect it will be a catalyst for more M&A transactions to really start occurring."

Charlie Green, associate director at **Scotia Waterous**, expects more scrutiny from banks compared to six years ago when oil and gas prices were low. Then the global financial crisis shut down capital markets.

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Newsletters available to Canadians via email

Ryder Scott Canada is asking newsletter recipients in Canada to notify the office if they want to opt-in to receive emailed links to *Reservoir Solutions* quarterly newsletter. Canada spam laws require that business-to-business emails be sent only to recipients who have given their prior consent through opt-ins.

Also, Ryder Scott will discontinue mailing hardcopy newsletters to readers who want electronic versions only. "Emailing will conserve paper and provide more timely delivery of the publication," said **Lynn Kis**, who manages the Ryder Scott Calgary office. To request the e-newsletter service and/or to discontinue receiving the mailed publication, please contact info@ryderscott.com. Emailed newsletters are available worldwide on request.

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Publisher's Statement

Reservoir Solutions newsletter is published quarterly by Ryder Scott Co. LP. Established in 1937, the reservoir evaluation consulting firm performs hundreds of studies a year. Ryder Scott multidisciplinary studies incorporate geophysics, petrophysics, geology, petroleum engineering, reservoir simulation and economics. With 130 employees, including 90 engineers and geoscientists, Ryder Scott has the capability to complete the largest, most complex reservoir-evaluation projects in a timely manner.

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"In 2009, banks had their hands full with all types of clients in financial distress," said Green. "Now oil and gas is generally the only sector hurting. Banks may be more focused this time around and take a harder line on forcing action."

Other factors point to a robust M&A period this year. Majors are selling non-core assets to improve their balance sheets. Also, independents hedged to mitigate the near term may become distressed sellers in Q3 and Q4 when price hedges roll off.

2015 energy MA&D: Expect some action in North America

— Cheryl Sandercock, P. Eng., managing director at Scotia Waterous Inc.

With the recent pull back in commodity prices worldwide, the situation has changed dramatically for many North American energy producers. Now that we are about six months into the oil price adjustment, the sentiment in the U.S. and Canada has moved from more inwardly focused strategies like budget adjustments to broader strategic discussions including mergers, acquisitions and divestitures.

Not surprisingly, many companies would rather acquire than drill in this commodity price environment. North American resource plays are still considered attractive long-term investments, and still garner interest. We see more activity in North America in this environment than in higher risk regions. Transactions for African exploration plays will be more difficult, for example.

With lower cash flow causing companies to curtail existing capital programs, who is thinking about acquisitions? There is increased interest from new entrants from Asia and Europe into both the U.S. and Canada, and private equity in a variety of forms is keen to acquire in this lower commodity cycle.

Also not surprisingly, sellers understand that valuations will be lower, and are not as motivated to sell. Exceptions include asset sales with strategic motivation where capital can be more effectively redeployed elsewhere, and naturally, distressed situations where dispositions may become essential. Joint ventures will be more challenging with top operators less likely to bring on partners at lower asset valuations.

We've seen some significant equity issuance recently, including **Noble Energy Inc.**, **Encana Corp.** and **Cenovus Energy Inc.** That indicates that some material producers are willing to support their balance sheets even at lower share prices, and may believe that the commodity cycle will not reverse in the near term.

We expect to see more transactions for shares or cash and shares rather than straight cash. Case in point, on March 18, **Whitecap Resources Inc.** announced the acquisition of **Beaumont Energy Inc.** for shares and/or up to around 18 percent cash.

History shows both that transactions do occur in a down market, with share transactions being much more dominant. See graph of U.S. corporate transactions by form of consideration in the context of prevailing commodity price trends.

We haven't seen many transactions this year, so when will this action take place? Many expect there to be additional pain to come later in the year, as lower prices persist, reserves are published and protective commodity hedges come off. We expect increased activity through the rest of 2015.

Transaction History in Context of Commodity Price

Transaction announcement dates in context of a BOE equivalent price (1/2 WTI / 1/2 HH) as a measure of the commodity price backdrop

Industry braces for reduced borrowing bases

Oil and gas companies with revolving lines of credit in the North American market are bracing for this spring's redeterminations when commercial banks are expected to reduce borrowing bases. **Allan D. Keel**, president and CEO at **Contango Oil and Gas Co.**, said, "The general consensus around the industry is kind of in the 20-percent to 25-percent range depending on what prices are at the time (of the redetermination)."

Lower prices

Banks typically reset their price decks each quarter. Because of the precipitous price drop that began last year, lenders reported base-case price decks slightly above current NYMEX strip prices, according to a commodity pricing poll of energy reserves-based lenders released in Q1. The Macquarie-Tristone Quarterly Energy Lender Price survey also indicated price decks were higher than the strip for the first time in five years.

Several banks reduced their price decks since the date of the survey and pricing assumptions for the spring borrowing-base reviews were not set yet in early April. What is clear is that banks will use even lower price decks to calculate sensitivity cases.

Semi-annual reviews

Loan agreements typically require semi-annual borrowing base redeterminations and in some cases, provide for interim redeterminations if requested by banker or borrower. The review often begins with a reserves report prepared by the borrower or third-party engineer. A bank engineer uses professional judgement and bank policy to adjust the cash flow, discount it at 9 percent and apply an advance rate before recommending a borrowing base. Other members of the lending team review historic accounting data.

For spring reviews, the historic data will reflect performance when oil prices approached $100 per barrel. If low prices persist, financial analysis in the fall borrowing base reviews will reflect lower prices received during 2015, and may reduce borrowing bases below the advance rate recommended by the bank engineer. Bank management makes final decisions based on the borrower's equity, cash flow and collateral.

Lower costs not factored yet

Lower prices have caused a slowdown in E&P while putting pressure on producers and service companies to lower drilling and operating costs. While conventional wisdom confirms that is happening, most reserves evaluations include lease operating expenses incurred when oil sold at much higher prices. One banker said that pairing projected low prices with higher historic operating expenses penalizes the borrower at least until monthly operating statements are available to confirm realized lower costs.

Haircutting reserves categories

Banks apply a risk factor or advance rate to each subclassification of the proved reserves category to calculate the collateral value of the borrowing base. The **Office of the Comptroller of the Currency Lenders**, which regulates U.S. banks, states that no advance should be made on unproved reserves.

Advance rates vary for proved developed producing reserves and typically range from 80 to 100 percent of the present worth of future net income. Banks also establish limits for the contributions that reserves other than PDPs contribute to borrowing bases.

Lenders extend lower advance rates for proved developed non-producing reserves, such as behind pipe, and proved undeveloped reserves.

Lenders typically risk-weight PUDS in the 50-percent range and PBPs in the 25-percent range.

Behind pipe can be justified because logs, cores, well tests and other data can support a quantity of proved reserves. So generally, a bank will give more. Proved shut-in can add even more to the borrowing base.

Overall, banks typically limit non-producing reserves to 20 to 25 percent of the borrowing base with 75 to 80 percent coming from producing reserves. PUDs are usually restricted to a maximum of 20 to 30 percent of the borrowing base.

"Lower price decks get more hedge value"

Outside of the commercial bank realm, private equity investors, with an appetite for more risk and reward, are valuing non-producing reserves on leaseholds if the borrower's acreage position is in a production sweet spot.

Hedging: A temporary cushion

Bankers assign more hedge value to lower price decks. Price hedging promises to cushion the effect of the commodity price drops in the 2nd quarter. However, a prolonged low-price environment will change the strategies for companies with hedges set to expire in 12 to 18 months. With a price drop, most movement in the price deck is in the first year or two, so companies hedged during that time won't see as much movement in their borrowing bases.

Hedging defense

Steve Hartman, chief financial officer at **Penn Virginia Corp.**, said in late February, "…we expect that the borrowing base will come down with the lower bank price deck. The bank lowered its price deck about 30 percent, but we are estimating a 20 percent decrease …because of our hedge portfolio and drilling the second half of 2014."

Mark C. Allen, chief financial officer at **Denbury Resources Inc.**, said, "Based on current future oil prices, we would not expect to have an issue with our bank covenants in 2015. However, once we get into 2016, we are significantly less hedged…"

Encana Corp. said about 1 billion Scfd of its expected 2015 gas production is hedged at an average of $4.29 per Mcf and about 55,000 barrels per day of expected oil volumes hedged at $62.18 per barrel.

Vanguard Natural Resources LLC said 82 percent of its gas is hedged this year, 67 percent in 2016 and 40 percent in 2017 at a weighted average price of about $4.31 per Mcf. This year's oil production is 77 percent hedged and 45 percent is hedged in 2016, all at a weighted average price of $78.68 per barrel.

Kosmos Energy Ltd. said its 2015 hedging program reduces commodity price exposure for approximately 75 percent of 2015 production with floor prices above $85 per barrel.

Bill Barrett Corp. said all of its 2015 production is hedged at commodity prices around $90 a barrel for oil and around $4 MMBtu for gas. **Stone Energy Corp.** said about 50 percent of its expected oil and gas volumes are hedged at almost $92 a barrel of oil and $4.15 per Mcf of gas.

Halcon Resources Corp. said it has more than 31,000 barrels per day of oil hedged in 2015 at an average of just over $90 a barrel. And for 2016, about 20,500 barrels of oil are hedged at an average of just under $85 a barrel.

Oasis Petroleum Inc. has more than 50 percent of its expected 2015 production hedged with average floors of over $88 per barrel, the company reported.

Energy Rock Partners LP reported that its 2015 production is 87 percent hedged at an average strike price of $89.88 per barrel, and 78 percent of its forecasted gas and ethane production is hedged at an average strike price of $4.07 per MMBTU.

Financial ratios

Low prices are causing oil and gas companies to seek relief in loan covenants that stipulate debt-to-EBITDA ratios, which are leverage tests to indicate a company's ability to service debt. EBITDA is earnings before interest, taxes, depreciation and amortization.

To show financial stability, companies must demonstrate that they are within the terms of the loan agreements on debt-to-equity ratios, as well as interest-coverage ratios and current ratios. Debt-to-EBITDAX ratios are used for companies with successful efforts accounting because it is before exploration costs.

Oil and gas companies carry debt-to-EBITDA and debt-to-equity ratios that banks consider in evaluating credit risk. The ratios vary for a number of reasons, but it is not unusual to see debt-to-EBITDA ratios of up to 4 to 1, which are generally higher than other industries because E&P is especially capital-intensive.

Vanguard said its lending covenant stipulates a debt-to-EBITDA ratio of 4. "It is our expectation that the covenant will be changed provide for more flexibility given lower forecasted adjusted EBITDA due to the lower commodity price environment, and with the recent news of peers who have already received covenant relief, this assumption appears to

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Producers trim opex, capex in face of dwindling revenues

To counter low prices, producers are trimming operating and capital costs with an eye to further cuts this year should prices stay mired. Service companies idling rigs and offering cost concessions have been hit hard.

Christopher Helman in a March 18 *Forbes* magazine article, "Itemizing the Oil Bust: 75,000 Layoffs and Counting," said, "For every rig mothballed about 40 people lose their jobs." The U.S. rig count is down by more than 700 from this time last year.

He also reported that the service sector had laid off 59,000, including 9,000 at **Schlumberger Ltd.**, 8,000 at **Weatherford International Plc**, nearly 7,000 at **Baker Hughes Inc.**, 6,600 at **Halliburton Co.** and 3,480 at **Nabors Industries Inc.**

The E&P sector

In February, **Timothy L. Dove**, president and COO at **Pioneer Natural Resources Co.**, said, "… what we're seeing in terms of third party quotations is that these pressure pumping companies are offering their services essentially at cash breakeven costs."

Diamondback Energy Inc., which operates in the Permian basin, is seeing opex reductions. Since the first of the year, Permian operators have dropped approximately 140 rigs.

"Frac spreads have been slow to respond due to the backlog of completions, but we are beginning to see them react as well," said **Travis Stice**, CEO at **Diamondback Energy**, in mid-February. "We anticipate improvements in cost not only from pressure pumping guys, but really the rest of the service sector probably through the next couple of quarters. We are currently seeing approximately 10 percent to 15 percent overall reductions."

In the Midland basin, **Approach Resources Inc.** expects to see a 15- to 20-percent reduction in its drilling-and-completion costs starting in Q2. **Ross Craft**, CEO, said, "We would like to see further (cost) reductions (from frac companies) but I'm not sure if I'm going to be able to push them too much further because they still have to maintain their equipment." He added that Approach has renegotiated costs for sand and general wireline work as well as lower day rates for drilling, transportation costs to move the rigs and pipe costs.

Callon Petroleum Co., another company in the Midland basin, estimates achievable reductions in total well cost during the first half of 2015 to be approximately 15 percent lower than in 2014. **Gary Newberry**, senior vice president of operations, said the company is writing AFEs for total well costs that are already 20 percent below levels in 2014.

"We now believe that total well cost could be down 30 percent from 2014 levels in the second half of 2015, which would be ahead of our original expectations," he said. "The estimated savings would drop the cost of a 7,500-foot lateral to approximately $5.1 million and 5,000-foot lateral to $4 million while generating incremental rates of return of 10 to 15 percent assuming a flat price of $55 per barrel of oil."

Operations in the Rocky Mountain region, including areas in the Bakken shale play in North Dakota, have seen a significant reduction in rig activity because of decreased commodity prices, said **Kent Rogers**, vice president drilling & completions at **Ultra Petroleum Corp**. He remarked that Ultra has negotiated several cost reductions from 5 percent to 30 percent for 2015, including those in tubulars, hydraulic fracturing, cementing, trucking, mud and chemicals, equipment rentals, coil tubing services and fuel.

The 2015 budget for **Continental Resources Inc.** assumes a 15-percent decrease in costs on average, and in late February, the company had realized about a 10 percent reduction in service costs with an expectation to see at least a 15 percent cost savings by midyear. In the Bakken, Continental deferred Q1 completions by 25 percent vs. its previously planned levels of activity.

In late February, **Harold Hamm**, CEO, said, "I want to compliment our industry for their prompt response to today's low oil price environment, reducing 2015 capex on average about 35 percent to 40 percent with more than $50 billion in capital reductions announced so far. Industrywide, the rig count has already dropped over 30 percent since year-end 2014 and is continuing to head lower. These actions will accelerate a strong demand and facilitate recovery to more rational prices in the future."

Bill Barrett Corp. reported its costs of drilling and completing extended-reach lateral wells in the DJ basin have decreased approximately 25 percent compared to the previous year. In southwest Pennsylvania, **Range Resources Corp.** plans to drill 20 percent longer laterals this year while reducing the total well cost per foot of lateral 37 percent compared to 2014.

SM Energy Co. plans to reduce its rig count from 17 to seven rigs—four in the Eagle Ford, two in the Bakken/Three Forks and one in the Powder River basin—by year end. **Wade Pursell**, CFO, said, "We're assuming for now that commodity prices do not improve from current levels. If they do, we can be very quick to respond. Picking up rigs is a much quicker activity than laying them down."

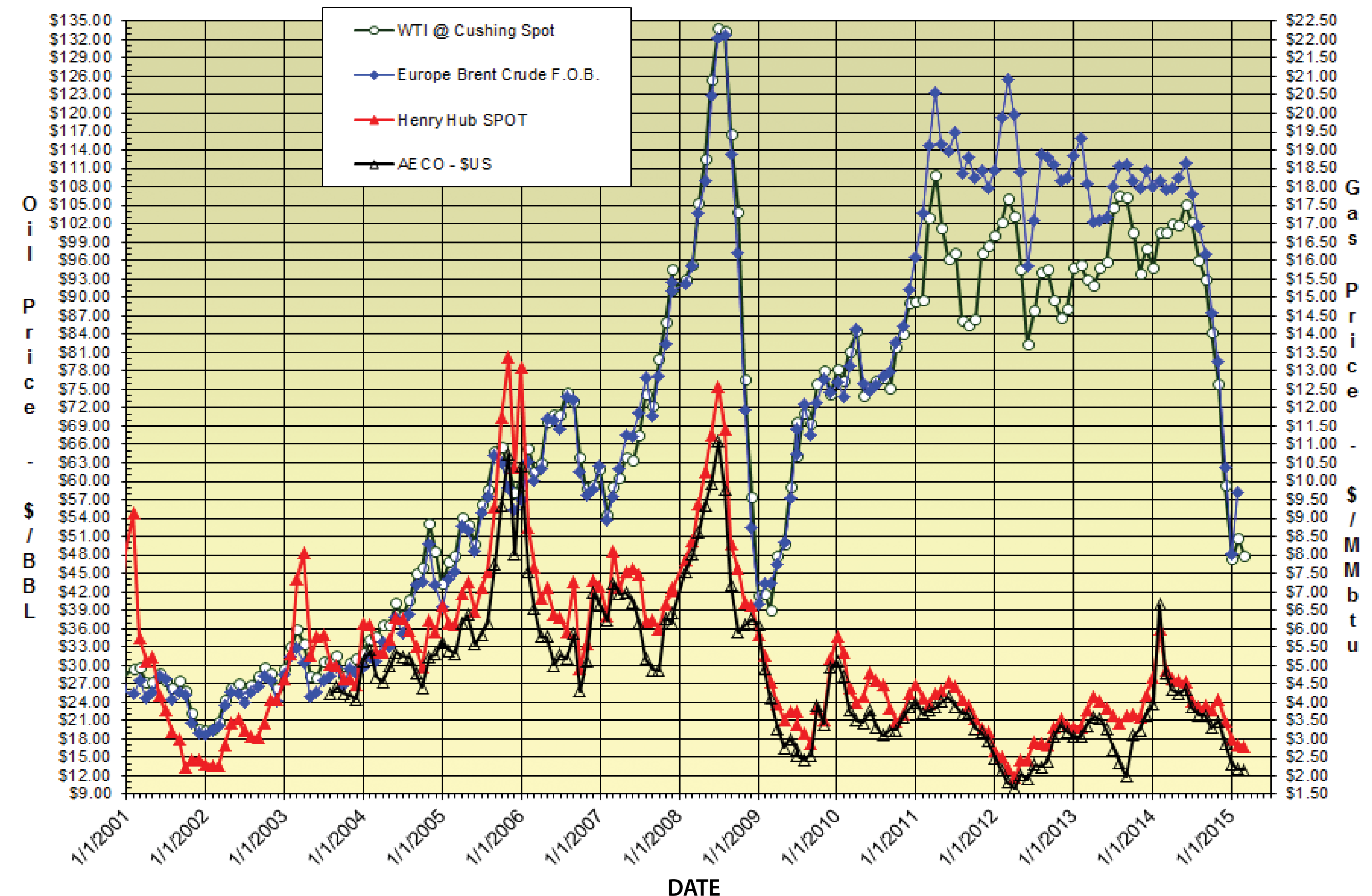
In late February, **BHP Billiton Ltd.** said by year end, it planned to reduce its rig count by 40 percent to 16 rigs. **Peter Beaven**, CFO, said, "We're not just reducing overall activity. We're drilling and producing at lower cost. Black Hawk drilling costs have declined by 17 percent in this period to $3.7 million per well."

Carrizo Oil & Gas Inc. is "running about 9 percent on the drilling-cost reduction and 19 percent on the completion-cost reduction." **Chesapeake Energy Corp.** is building in an estimate of around 10 percent in service-cost savings for 2015 before its operating teams consider capital-efficiency improvements.

Exco Resources Inc. has realized lower costs this year in fracture stimulation, cementing, production chemicals, rentals and fuel. The company has reduced its employee headcount by 15 percent and suspended allotted dividends because of declines in oil and gas prices.

Exco also plans to let three of its four remaining rig contracts expire if needed. "This could provide additional opportunities for lowering our costs, either through renegotiating rates or releasing rigs," said **Hal Hickey**, president.

Price history of benchmark oil and gas in U.S. dollars



Published, monthly-average, cash market prices for WTI crude at Cushing (NYMEX), Brent crude and Henry Hub and AECO gas.

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be realistic," said **Richard Robert**, CFO, in March.

Mark C. Allen, chief financial officer at **Denbury Resources Inc.**, said, "… we could have issues with our debt-to-EBITDA covenant of 4.25 times if oil prices remain at depressed levels. As such, we anticipate working with our bank group in the near term to restructure our covenant to accommodate a potentially lower oil price environment."

Covenants address a variety of conditions from dividend payments to working capital to the retention of key executives. A broken covenant typically relieves the lender from the obligation to the borrower.

Spreading the risks

To mitigate the uncertainties of estimating reserves, commercial banks have traditionally sought diversification by wellbore, reservoir, field, and producing region. Diverse collateral packages provide some comfort that overbooking errors will be offset by underbooking errors.

Tradition is giving way to new approaches. Private equity providers are funding companies formed by management teams with expertise in individual producing areas. "A change is in progress," remarked **Andy Merryman**, senior vice president at **Frost Bank**.

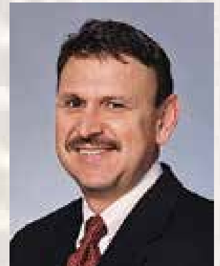
Those "pure play" companies have assets concentrated in individual areas. They are building successful track records in areas such as the Eagle Ford, Bakken and Marcellus and often have relatively new horizontal wells that challenge traditional evaluation methods.

A higher concentration of value in a given area provides a non-traditional risk profile that will certainly present new challenges to bankers, said Merryman.

Examples of pure play companies are Oasis in the Bakken, **Rosetta Resources Inc.** in the Eagle Ford, **Cabot Oil & Gas Corp.** in the Marcellus and **Ultra Petroleum Corp.** in the Pinedale.

RS has new president, executive VP

Rietz


Ramirez

The new president at Ryder Scott is **Dean Rietz**. In April, he replaced **Fred Richoux**, who will remain on the board of directors. **Guale Ramirez**, former managing senior vice president (MSVP) — international, became executive vice president. Rietz has been a petroleum engineer since 1984. He joined Ryder Scott in 1995 as a petroleum engineer specializing in reservoir modeling and three years later became manager of the simulation group. Ramirez has been a petroleum engineer since 1976. He joined Ryder Scott in 1981 and became MSVP in 2002. **Don Roesle** remains chairman and CEO.

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