BEST IN CLASS
WHERE IS 2015 CAPITAL BEING SPENT?

BMO CAPITAL MARKETS OIL & GAS A&D ADVISORY

AUGUST 2015

Wendy Smith Low
Managing Director
+1.403.515.1528
wendy.smithlow@bmo.com

Joyce Kennedy, P.Geol.
Director
+1.403.515.1576
joyce.kennedy@bmo.com

Steven Kehoe, M.E. Sc., P.Eng.
Vice President
+1.403.515.3661
steve.kehoe@bmo.com

Jennifer Haskey, P.Eng.
Vice President
+1.403.515.1558
jennifer.haskey@bmo.com

Connor Ross, E.I.T.
Analyst
+1.403.515.1554
conor.ross@bmo.com
Commodity prices have dropped by more than 50% since summer 2014. This commodity price correction has led to reductions across the board in capital expenditures, with an estimated $24B or 38% reduction in capital deployment in Canada. The result is that only the plays with superior economics or the “Best in Class” will continue to have capital allocated to them.

COMMODITY PRICING IMPACT ON ACTIVITY

- In order to assess the impact of removal of capital from drilling programs, BMO A&D reviewed in detail where capital was spent in Western Canada this winter drilling season (December 2014 to March 2015 or “Winter 2015”) vs last winter’s drilling season (December 2013 to March 2014 or “Winter 2014”)
- Winter 2014 drilling saw 3,257 wells drilled while Winter 2015 drilling was reduced by almost half across Western Canada to 1,783 wells (excluding oil sands activity, injectors, water disposal wells etc.)
- All four provinces saw a dramatic decrease in activity but the largest impact was observed in Alberta, with a loss of almost 800 wells as compared to Winter 2014 when 1,574 wells were drilled. This was followed closely by a similar reduction of activity in Saskatchewan
- Winter 2015 has seen operators retrench and focus precious drilling capital on those plays within their portfolios that provide the highest returns, resulting in more than 80% of the activity focused on just eight plays:
  - Tight and unconventional gas – Montney, Duvernay and Deep Basin
  - Tight oil – Bakken, Cardium, Viking and South East Saskatchewan (Triassic and Mississippian)
  - Conventional heavy oil
- Only one play area saw a marginal increase in drilling in 2015 - The Montney play in North East British Columbia was up 3% in Winter 2015
- In Winter 2015, the only significant emerging play that continues to see capital allocation is the condensate rich Duvernay Shale in the Greater Kaybob area

Notes: Only wells intended to produce oil and gas were included while oil sands, bitumen, pressure test, water injection, etc. wells were not included
Data is current to June 30, 2015 as per the public record unless otherwise indicated
A typical year will see the drilling of approximately 12,000 to 14,000 wells in the WCSB (Western Canadian Sedimentary Basin) - our review focused on productive wells only and as such excluded wells with statuses such as Observation, Disposal, Injection, Strat, Storage, Waste, D&A, etc., nor did our review include CBM or oilsands wells.

In 2014 the total number of wells drilled in the WCSB was 14,444 and applying the exclusions reduced the number by 40% to 8,775 productive wells.

The plot above indicates the total number of productive wells drilled each month in Western Canada (British Columbia, Alberta, Saskatchewan and Manitoba) plus the corresponding average weekly rig count activity. During Winter 2015 peak rig count was down 40% and productive wells drilled was down 45%.

In 2014 approximately 70% of the productive wells were drilled during the rest of the year (April - December). However this year we suspect that much of the available capital for 2015 has already been spent and that activity will continue to be materially impacted through to the end of 2015.
2015 Capital Retraction

CANADIAN CAPEX HISTORICAL ANALYSIS(1)

- The capital spending data shown in the histogram represents capital spent and forecasted by Canadian domiciled E&P companies and will not include some significant values by non-Canadian companies such as ExxonMobil, Shell, and ConocoPhillips etc. and as a result we believe is a conservative view on capital retraction.

- During the world economic slowdown of 2008-2009, average annual prices dropped approximately 38% but the corresponding capital retraction was just 21%.

- More severe than 2009, current WTI pricing has dropped 52% relative to 2014, and companies have responded by reducing 2015 capital budgets initially by an estimated 38% or C$24B.

- In the face of this new pricing reality, producers retrench to those opportunities in the drilling inventory with the highest chance of success and best economics and shelf most emerging plays.

- There will be some number of locations that must be drilled to preserve lands or other commitments, but for the most part, the remaining less lucrative locations are simply left in inventory and will be drilled when prices inevitably recover and/or technology improves to increase returns.

- Recent Q2 2015 reporting has confirmed continued cautious spending and in some cases, where possible, further revisions downward on capital spending.

Conservatively estimated at $24B

CAPITAL ALLOCATION CONTINUES TO DECLINE

<table>
<thead>
<tr>
<th>Year</th>
<th>WTI Price</th>
<th>CAPEX Retraction</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008-2009</td>
<td>$70</td>
<td>21% ($9B)</td>
</tr>
<tr>
<td>2014-2015</td>
<td>$47.12</td>
<td>52% ($24B)</td>
</tr>
</tbody>
</table>

Source: BMO Capital Markets, FactSet
Note: Prices as of June 30, 2015
1. Canadian capital programs represented by 120 TSX or TSXV listed Canadian domiciled E&Ps
3. July 31, 2014 (WTI US$98.17) to July 31, 2015 (WTI US$47.12)
The New Normal

Adjusting to Life with Low Oil Pricing

The charts above show annual average strip price forecasts for January, March, June and July 2015 as well as a one year look back at the strip from June 2014.

Without the influence of a hot summer and the prospect of entering a warm winter and with natural gas at above average North American storage levels, AECO spot has traded in the $C2.55-$2.91 range since July 1, 2015.

On the oil side, recent stability at the US$60 range has given way to downward pressure on global prices, falling again to the US$45 range. Current pressures include: continued overproduction versus global demand, US$ strength and concerns of Iranian sanctions being lifted.

Canadian operators have two key factors in their favour relative to their U.S. counterparts that impact pricing:

- C$ to US$ exchange rate increases realized prices significantly - 31% on July 31, 2015
- Condensate (C5+) liquids sell at a premium to Edmonton Light Oil - typically 5% to 10%

For example, on July 31, the price for WTI was US$47.12/bbl. The same day, Edmonton Light sold for C$55.14/bbl and Edmonton Condensate received C$60.38/bbl.

Note: 1) Canadian Storage Spring 2014 was well below 5 year average impacting price positively
2) Front of future curves (2015) calculated using balance-of-year open contracts only
Drilling activity by commodity for Winter 2014 as compared to Winter 2015 decreased 55% for oil and just 16% for gas. Not surprisingly, and in search of the best economics, drilling activity for both oil and gas is primarily horizontal drilling.

The top four drillers by well count in Winter 2014 were Crescent Point, Husky, Canadian Natural and Encana, accounting for 22% of the wells drilled in Winter 2014 with only Encana pursuing primarily gas.

Roll forward to Winter 2015, Crescent Point and Encana were the only drillers to remain in the top four (by well count) during Winter 2015 and were joined by Progress and Penn West. These four names accounted for 28% (over 500 wells) during Winter 2015 - it is notable that of these names, only Encana and Progress are drilling gas wells.

Seven operators increased drilling in Winter 2015 marginally, Penn West, Tundra, Spartan, Corex, Tourmaline, Peyto, and Seven Generations - the first four names drilling only oil and the last two mostly gas.

Of the remaining 18 names that decreased activity from Winter 2014 to Winter 2015, the operators with the largest reduction in wells drilled were Canadian Natural, followed by names like Husky, ARC, Whitecap and Teine.
Capital Allocation Winners

2014 AND 2015 WINTER DRILLING ACTIVITY

- With the largest fundamental commodity price correction based on supply and demand this millennium occurring in late 2014 and early 2015, companies are naturally focusing capital on the portion of their portfolios with the best economics
- More than 90% of winter drilling 2014 and 2015 targeted just ten plays – we have focused on eight of the plays that best represent current industry activity. Both the Shallow Gas and SW Saskatchewan (Shaunavon) plays have nuances (lack of competition, motivations for drilling other than economics) that lead to their exclusion from the overall discussion

Condensate Rich Gas and Light Oil Plays

2014 AND 2015 WINTER DRILLING ACTIVITY BY PLAY

- Of the top eight plays, no single play saw more activity in Winter 2015 as compared to Winter 2014
- Although there was some minor position shifting, the top three plays remain Montney, Viking and Deep Basin
- The biggest loser was Mannville Heavy Oil which saw activity reduced by 78% - no surprise with differentials compounding the decline in WTI
- Of the three remaining light oil plays (Bakken, Mississippian Subcrop and Cardium) the one with the lowest decline was the Bakken with activity down just 17%
- Of note is the Duvernay which is the only large, competitive, emerging play, where companies are continuing to spend significant capital de-risking
North BC Montney

2014 AND 2015 NORTH BC MONTNEY WINTER DRILLING

Source: Government of Alberta, GeoSCOUT, GeoEDGES, BMO Capital Markets

Progress Continues to Spend Ahead of FID

2014 AND 2015 NORTH BC MONTNEY DRILLING BY OPERATOR

Source: GeoSCOUT, BMO Capital Markets

*Black Swan announced the acquisition of Carmel Bay on June 9, 2015. Well counts include Carmel Bay

- The number of companies drilling in North BC Montney is fairly small with only ten operators drilling in the Winter 2014 and just eight in 2015
- The North BC Montney play was the only area to increase drilling slightly with 108 wells drilled during the Winter 2015 and 105 in Winter 2014
- The dominant and most active player is Progress Energy which increased marginally the number of wells drilled in 2015 to 77 from 74 the previous winter (there were an additional 136 wells drilled by Progress in the remaining months of 2014 that were not part of the Winter drilling). Notably much of this activity will be to support Pacific Northwest LNG’s final investment decision (FID) for the project at Prince Rupert
- There is a significant activity drop to the next most active drillers; Black Swan and Painted Pony both increased drilling in Winter 2015 whereas Storm decreased their drilling by one well over the same period

Increased Drilling

2015 Winter Drilling
up 3%

2014 Winter Drilling

Source: GeoSCOUT, BMO Capital Markets

• The number of companies drilling in North BC Montney is fairly small with only ten operators drilling in the Winter 2014 and just eight in 2015
• The North BC Montney play was the only area to increase drilling slightly with 108 wells drilled during the Winter 2015 and 105 in Winter 2014
• The dominant and most active player is Progress Energy which increased marginally the number of wells drilled in 2015 to 77 from 74 the previous winter (there were an additional 136 wells drilled by Progress in the remaining months of 2014 that were not part of the Winter drilling). Notably much of this activity will be to support Pacific Northwest LNG’s final investment decision (FID) for the project at Prince Rupert
• There is a significant activity drop to the next most active drillers; Black Swan and Painted Pony both increased drilling in Winter 2015 whereas Storm decreased their drilling by one well over the same period

2014 AND 2015 NORTH BC MONTNEY WINTER DRILLING

Source: Government of Alberta, GeoSCOUT, GeoEDGES, BMO Capital Markets
• Drilling activity in the Central Montney play decreased by 32% (similar to the estimated capital retraction) - from 206 wells during the Winter 2014 to 141 wells in Winter 2015

• A highly competitive area, a total of 25 companies were actively drilling wells over the two winter seasons
Alberta Montney - Liquid Rich Montney

Seven Generations Wins the Activity Race

- Also highly competitive the Alberta Montney fairway saw a total of 30 companies drilling wells during both Winter 2014 and Winter 2015 (20 in 2014 and 23 in 2015)
- While portions of the BC Montney play remained fairly active in 2015, the Alberta Montney fairway saw a decrease in drilling activity of 10%

Three companies increased drilling in 2015 including Shell and Sinopec Daylight but the most notable was Seven Generations who increased drilling activity from 14 to 23 wells
- New drillers in 2015 included Apache and Harvest with modest drilling
- There is a lengthy list of operators who remain active in the play with reduced drilling activity which includes Paramount, Nuvista, XTO, Tourmaline, Delphi and Kicking Horse. Note that Encana operated no Winter 2015 drilling in the area, choosing to deploy capital elsewhere
- As sweet spots are identified and egress bottlenecks are resolved, we expect to see consolidation in the form of increased M&A activity

Source: Government of Alberta, GeoSCOUT, GeoEDGES, BMO Capital Markets
The Viking was usurped as the most actively drilled play in Winter 2014 to second place during Winter 2015

Another competitive area, a total of 34 companies drilled Viking wells during the 2014 and 2015 winter drilling seasons

Overall drilling activity reduced by 40%, representing a reduction from 499 wells to 298 wells in Winter 2014 to Winter 2015 respectively

- Raging River is the most active company in the area drilling 76 wells during the Winter 2014 and reducing activity slightly to 74 wells in Winter 2015
- Penn West was the only company to increase drilling activity in 2015 and this was significant: from 22 wells to 45 wells
- Others that continue to spend capital, although more conservatively, are Whitecap, Teine, Crescent Point and Spur Resources
- Novus Energy has been testing the western Viking boundary close to the Alberta and Saskatchewan border but has reduced drilling activity by almost 90%, drilling just four wells during Winter 2015 drilling compared to 35 in the previous season
The Deep Basin play consists of wells drilled into the stacked reservoirs, primarily in the Cretaceous, and includes reservoirs such as Spirit River Group (Notikewin, Falher, Wilrich), Glaucnicitic, Bluesky, Dunvegan, Ellerslie, Doe Creek, Cadomin and Rock Creek formations.

- A highly desirable and competitive fairway, the Deep Basin saw a total of 93 companies drilling wells during the winter seasons reviewed.
- The Deep Basin was the third most actively drilled play in both winter drilling seasons but activity was reduced by 40% overall.
- Within the top 20 drillers, five operators increased drilling activity from the 2014 winter season to 2015, including Peyto, Tourmaline, Vermilion, Shell and Enerplus along with two new operators Mosaic and OMERS.
- Although Bonavista was the third most active driller, activity was reduced to 24 wells from 31 wells the previous winter.
- As observed elsewhere, Canadian Natural Resources significantly reduced drilling in Winter 2015 by 86%.
- Other companies who have reduced activity include Bellatrix, Talisman (Repsol), TAQA, Whitecap and Husky - all others remain relatively neutral.
The Mannville Conventional Heavy Oil play consists of wells drilled into the Waseca, Sparky, General Petroleum, Rex, Lloydminster, Cummings and Dina formations.

There is a relatively low barrier for entry into this play and as a result there were a total of 50 companies active over the last two winter drilling seasons.

This play is impacted not only by commodity pricing but also as the heavy oil differential and as a result drilling has decreased by 78%.

The five most active drillers - Husky, CNRL, Baytex, Twin Butte and Gear - all reduced drilling dramatically in Winter 2015.

The companies that increased drilling in Winter 2015 from Winter 2014 include Talisman and Strike but both were at extremely modest levels of activity and in no way offsets the dramatic decline in activity.

Wells in this play have a short cycle time from spud to production so expect that if pricing rebounds activity levels can respond quickly.
The Bakken/Torquay/Three Forks continue to capture capital with only 17% reduction in 2014 to 2015 winter drilling activity. However the emerging plays, Mississippian Subcrop and Triassic, were far more impacted by capital retraction and saw activity reduced by 64%.

Crescent Point continues to dominate the drilling activity in SE Saskatchewan and increased activity in the Bakken/Torquay/Three Forks in Winter 2015.

Tundra and Corex joined Crescent Point in this counter cyclical activity and also increased activity in the Bakken/Torquay/Three Forks during Winter 2015.

The Mississippian Subcrop and Triassic play is much more competitive with a total of 49 companies drilling wells.

Notably three companies increased activity in 2015 - Spartan, Wyatt and Meta - but the real story lies with those that decreased activity in this play - Crescent Point, Vermillion, NAL, Lightstream etc.
This play spans a large geographical area and is the fifth most actively drilled play in 2015 with 42 companies drilling during the 2014 and 2015 winter drilling seasons.

- Overall activity in Winter 2015 was reduced by 62% and is reflective of how sensitive to commodity pricing some areas of this play can be.
- The halo around the vertically developed Central Pembina field continues to be the target for horizontal drilling with 119 wells drilled in 2014 and 47 in 2015.
- Willesden Green is the second most actively drilled area with 61 drills in the Winter 2014 season and only 28 in 2015.
- Lochend saw the biggest reduction in drilled wells over the winter season reducing from 23 to just one well.
- The only operators to increase drilling from the 2014 winter season to 2015 were Penn West and Baccalieu. Combining the two winter seasons makes Penn West the most active driller with a combined well count of 52.
- Other top drilling companies include Bellatrix, Pengrowth, Lightstream and Whitecap, all of which reduced drilling in 2015.
The Duvernay Shale is an extensive formation covering most of the central part of Alberta. Development is currently focused in the Greater Kaybob area where operators are moving rapidly to optimize drilling and completion techniques.

Duvernay drilling was reduced by 31% from Winter 2014 to Winter 2015 consistent with overall observed capital retraction, however the play continues to receive capital allocation as a promising, large, emerging condensate play.

The Greater Kaybob Duvernay Shale is the most actively drilled emerging play with 63 wells drilled over the 2014 winter drilling season and 43 wells in 2015.

A total of 15 companies drilled wells during the 2014 and 2015 winter drilling seasons.

In the Greater Kaybob fairway Shell, Chevron and Athabasca Oil were the only producers to increase the number of drills in 2015 whereas Encana maintained their activity.

A total of eight companies spent no capital in 2015.
Montney was the most actively drilled play in Winter 2015 - partially because of Progress’ pursuit of FID in BC but also due to the condensate component of the Alberta Montney.

Condensate is used as diluent for heavy oil and bitumen produced from the oil sands. In addition, both Fort Saskatchewan and Joffre are hubs for the petrochemical industry in Alberta and also consume much of the other NGLs (C₂, C₃ and C₄).

The recent collapse in oil prices has merely slowed the pace of growth in the oil sands but demand remains for diluent. The AER has published a production forecast that indicates continued growth for both oil sands and NGLs in Alberta (top right) that shows this demand is ever increasing.

As a result, C₅⁺ has historically been priced at a premium to Edmonton Light and the pricing premium is expected to continue.
What to Watch for…

WCSB ACTIVE PLAYS

- **LIQUIDS RICH GAS PLAYS**
  - Expect to see continued development in established areas with the focus on cost reduction through pad drilling and other efficiencies.
  - In the pursuit of condensate, operators will continue targeting the areas that provide the best mix of gas deliverability and condensate yields. Delineation of the Montney phase windows that show high condensate yields will continue to see capital allocation, as well as new zones altogether, like the Ellerslie in the Deep Basin.
  - From a more macro perspective, watch for the condensate price to remain at a premium to the Edmonton light price. In addition, C₃ and C₄ prices have been depressed recently, so if butane and propane rebound then the rates of return on liquids-rich plays will improve.

- **TIGHT OIL**
  - These plays are often characterized by their relatively low capital costs but generally do not have the same running room or extent of resource plays like the Montney and Duvernay.
  - Development will continue at a similar pace as operators infill and exploit established areas where type curves provide the best economics.

- **CONVENTIONAL HEAVY OIL**
  - Cold heavy oil production, similar to tight oil, is characterized by low capital requirements, however, with low deliverability these wells are very sensitive to oil prices. At prices below US$60/bbl (WTI), economic returns are marginal when taking into account oil quality adjustments. Operators will resume drilling these at a similar pace as 2014 when prices are comfortably above US$60/bbl.
  - Since these wells can be drilled and brought on very quickly, activity can be very responsive to a commodity price increase.

OBSERVATIONS

- Based on unique demand in Western Canada, high rate condensate plays will continue to receive capital allocation - in pursuit of condensate, expect continued development of the Duvernay in the Greater Kaybob and the Alberta Montney.
- Although both Alberta and Saskatchewan appear to be the hardest hit from an activity perspective, Winter 2015 occurred prior to concerns about an impending royalty review in Alberta. Expect remaining drilling capital to move to neighboring provinces or potentially to owners of large freehold land positions where royalties are a known quantity.
- Expect capital compression as it relates to DCET (drill, complete, equip and tie in) costs to positively impact the bottom line of those continuing to spend capital - anecdotal reports of 20-30% reductions.

Source: GeoSCOUT, GeoEDGES, BMO Capital Markets
ABOUT BMO CAPITAL MARKETS

BMO Capital Markets is a leading, full-service North American-based financial services provider, with approximately 2,200 professionals in 30 locations around the world, including 16 offices North America, offering corporate, institutional and government clients access to a complete range of investment and corporate banking products and services. BMO Capital Markets is a member of BMO Financial Group (NYSE, TSX: BMO), one of the largest diversified financial services providers in North America with US$525 billion total assets and more than 47,000 employees as of April 30, 2015.

BMO Capital Markets is a trade name used by BMO Financial Group for the wholesale banking businesses of Bank of Montreal, BMO Harris Bank N.A. (member FDIC), Bank of Montreal Ireland p.l.c., and Bank of Montreal (China) Co. Ltd and the institutional broker dealer businesses of BMO Capital Markets Corp. (Member SIPC) and BMO Capital Markets GIST Inc. (Member SIPC) in the U.S., BMO Nesbitt Burns Inc. (Member Canadian Investor Protection Fund) in Canada and Asia, BMO Capital Markets Limited (authorised and regulated by the Financial Conduct Authority) in Europe and Australia and BMO Advisors Private Limited in India. “Nesbitt Burns” is a registered trademark of BMO Nesbitt Burns Inc., used under license. “BMO Capital Markets” is a trademark of Bank of Montreal, used under license. “BMO (M-Bar roundel symbol)” is a registered trademark of Bank of Montreal, used under license.

© Registered trademark of Bank of Montreal in the United States, Canada and elsewhere.

TM Trademark Bank of Montreal

©COPYRIGHT 2015 BMO CAPITAL MARKETS