

# Declining Reserve Replacement Ratios Deceiving In Resource Play Environment

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For nearly a decade to 2014, Canada's reserve replacement ratio remained largely consistent at about 1.20, as healthy drilling activity equated to replacement of production plus 21 per cent added annually.

The situation changed dramatically in 2015-2016 after the price of oil collapsed from the \$90-\$100 WTI range to sub \$50 per bbl. In 2015, the reserve replacement ratio sunk to 0.14. In 2016, it fared little better at just 0.36. With numbers like that, it may appear the basin had entered a period of rapid and, unless prices dramatically improved, inexorable decline.

But the numbers can be deceiving. In fact, the basin can be seen as quite the opposite — to be entering a new era of abundance.

The U.S. has become today's preeminent petroleum superpower due to the shale and tight oil and gas revolution. Not surprisingly, considering the similarities in geology and infrastructure, it is a revolution that is sweeping through Western Canadian basins as well.

The resource plays it spawned, such as the Montney, Duvernay and Bakken, are comparable to some of the best U.S. resource plays, contributing to a revival of Canadian oil and gas production. But unlike conventional finds of the past, they may not be as readily reflected in reserve replacement ratios. They may involve lower exploration risk, but they play out over longer time horizons as the plays are systematically developed over decades.

"The industry will often look at the reserves replacement ratio and suggest when you are not replacing reserves, we are obviously in a decline. With the resource plays that we have today, you cannot automatically leap to that conclusion," said **Nora Stewart**, senior vice president for Reserves Certification at Sproule.

“There is a significant amount of inventory in the Western Canada Sedimentary Basin that is not on the reserves books. Companies are, in this low price environment, seeking to retain land. Today’s drilling strategy often focuses on land retention and not specifically to grow reserves on the books.”

Sustaining cash flow through the conversion of undeveloped reserve locations to producing wells is another industry imperative. While this capital activity generates and increases a company’s cash flow, it does not typically increase reserves.

“Companies will be drilling to convert locations into cash flow, converting an undeveloped location into a proved developed producing entity that they can take to the bank and support their various lines of credit,” said Stewart. “So even though we have a lower reserves replacement ratio right now, and even though we think it may take a while before we return to historic levels of full replacement of production, we do not believe that this basin is in decline.”

With the resource plays available to industry in western Canada, companies have accumulated a large inventory of development opportunities. In fact, the sentiment among most companies is that there is more drilling opportunity right now than there has been in a long time, said **Steven Golko**, Sproule vice president of New Ventures and Strategic Advisory. “There is a lot of inventory out there and I don’t think companies are concerned with the basin being in decline by any means,” he said.

Up to the oil price plunge of mid-2014, reserve additions were primarily a result of drilling. Acquisitions were mainly offset by dispositions, which is indicative of industry’s typical consolidation of the assets into regions for preferred development or targeted areas of expertise — essentially the disposition of minor assets.

After the crash, reserves were removed from the books across all products. Driven by low oil and gas prices, some reserves were no longer economic. But of greater importance, companies re-evaluated and rationalized their development plans, resulting in the removal of locations from the books.

“We saw negative revisions, specifically in 2015, as the new price environment imposed a reconciliation of the development inventory held by companies. And certainly, the lower pace in drilling has led to smaller development plans, meaning a smaller reserve volume on the books,” added Golko.

Acquisitions began to predominate, including purchases of bankrupt peers or their assets, with a much bigger piece of the reserve adds coming from acquisitions compared to adding reserves through the drill bit, he said.

“Looking forward, we don’t see the reserves replacement ratio returning to historic levels in the next year. Although they are picking up, the drilling levels are still lower

than they have been historically, which means there will not be significant additions through the drill bit. There have continued to be acquisitions throughout 2017, as the industry continues to consolidate and companies reposition themselves.”

## Resource plays come to the fore

“It is a little different [now] for the industry in having resource-style reserves with large inventories, some of which are booked as reserves, but also a lot of which are not. Large inventories sit in contingent resources right now, with companies’ drilling inventories in excess of five to ten years, in many cases,” Golko said.

Companies can govern the balance of what is in reserves and what is in contingent resources, providing an opportunity for inventory management. While current guidelines look for undeveloped reserves to be brought on to production in three to five years, a committee is examining extending that to five to ten years, Stewart noted.

“That would provide industry with an opportunity to look at a longer-term development plan for reserve disclosure that is more aligned with their internal development plans,” she said. “Companies with resource plays are working at building long-term inventory that can extend ten years and beyond.”

If companies were able to book reserves going out beyond three to five years it would also lead to an instantaneous increase in the reserves replacement ratio.

Longer term, experience has shown that with the development and application of new technologies — such as the horizontal drilling and multistage fracturing that opened up shale and tight sand gas and oil plays — the basin’s reserves will continue to grow. “I think we are far from reaching full maturity of this basin,” Stewart said.

Added Golko: “Overall recovery factors are still very low for the unconventional plays, and it’s a matter of time before the technology and price regime comes into place that allows further recovery of the resources contained in this basin. Despite the fact that we have seen low reserves replacement ratios over the last two years, there is still a lot of oil and gas left in front of us.”

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