

Oil and Gas Exploration and Development Activity in Ontario in 2012

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INTRODUCTION

Drilling activity in southern Ontario decreased again in 2012 to another new low. The average price of oil sold in Ontario during the year was \$88 per barrel; significantly lower than the average for 2011 of just under \$96. The price of natural gas in Ontario averaged \$3.51 per MMBtu in January 2012, reaching a low average of \$2.07 in May and ending the year with a December average price of \$4.00. High production volumes of recently exploited shale gas continue to suppress prices in the North American market.

Production volumes of oil rose slightly for the first time in many years. Data compiled from annual production reports submitted to the Petroleum Operations Section indicate that annual oil production rose 6.1% to 83 778 m³ in 2012 with an estimated value of \$46.6 million, compared to 78 987 m³ with an estimated value of \$47.8 million in the previous year. Natural gas production declined 11% to 200 297 × 10³ m³ with an estimated value of \$21.4 million, compared to 224 781 × 10³ m³ with an estimated value of \$34.9 million in 2011.

The recent decline in oil production has been directly related to reduced levels of drilling activity since 2004, such that there is normally insufficient new production to replace that from existing wells. It is too early to determine if the slight reversal of the trend in 2012 is meaningful. The cash value of oil production decreased substantially from 2008 to 2009 due to a dramatic drop in unit price, but increased in 2010 and again in 2011. The total value remained essentially unchanged from 2011 to 2012 as increased production compensated for lower price.

EXPLORATION ACTIVITY

A total of 20 licences to drill and operate new wells were issued by the Ministry of Natural Resources in 2012, compared to 25 in 2011. An additional 29 licences were issued for the plugging of existing wells.

Drilling of 17 new wells was reported in 2012, compared to 19 new wells and 1 deepening in 2011. These consisted of 4 exploratory wells, 5 development wells, 2 stratigraphic tests and 6 service wells. No horizontal wells were drilled in 2012.

Successful development drilling in 2012 resulted in 1 well reported to be an active gas producer, 2 potential oil wells and 1 active private gas well. This was a poorer commercial success rate than in 2011, which yielded 2 active gas producers, 1 active oil and gas well, 2 suspended gas wells, 1 potential gas well and 1 active private gas well at the time of writing the 2011 report.

Exploratory drilling in 2012 resulted in 1 active brine and oil well, 2 potential oil wells, and 1 potential gas well (Table 1; Figure 1). In comparison, exploratory drilling results in 2011 were less positive, with only 1 potential oil well indicated at that time.

Cambrian Play

One exploratory well was drilled in Elgin County to test Cambrian targets for oil and gas in 2012 and was reported as a potential oil well. One stratigraphic test to the Cambrian was also drilled in Haldimand County. One exploratory well had been drilled to the Cambrian in 2011.

There were no development wells drilled to Cambrian targets in 2012 or 2011.

Ordovician Play

There were no exploration wells drilled to Ordovician targets in 2012. One deeper pool test was drilled to the Ordovician in 2011.

Two development wells were drilled in Essex County to test the Ordovician in 2012, both reported as potential oil wells. Two Ordovician development wells were also drilled in Essex County in 2011.

Silurian Sandstone Play

No exploration wells tested Silurian sandstone targets in 2012. One exploration well was drilled in Silurian sandstone in 2011.

One development well was drilled for Silurian sandstones in 2012. It was reported as an active private gas well in Lincoln County. Two development wells targeted Silurian sandstones in 2011.

Silurian Carbonate Play

Two exploratory wells were drilled to test Silurian Guelph reef and/or Salina Group targets in 2012. One was reported as an active brine and oil well in Lambton County; the other as a potential gas well in Huron County. There were no exploratory wells drilled to these targets in 2011.

Two development wells were drilled for Silurian Guelph reef and/or Salina Group targets in 2012. One was reported as an active gas well, the other as abandoned; both in Lambton County. Three development wells were drilled for Silurian carbonates in 2011.

Devonian Play

One exploration well tested Devonian targets in 2012 and was reported as a potential oil well in Elgin County. This was an identical result to 2011.

As in 2011, no development wells were drilled to test Devonian targets in 2012.

EXPLORATION TRENDS

High natural gas prices greatly enhance the economics of all gas plays in Ontario. Unfortunately, North American natural gas prices dropped dramatically during 2009 and have remained relatively low. Low natural gas prices have a dramatic impact on exploration and development activity, which has been reduced to a minimum in the province. Exploration activity focussing on oil has not increased significantly in spite of oil prices that have been consistently robust. Ironically, sustained higher oil prices may also negatively impact activity in Ontario by increasing the attractiveness of larger and more expensive projects in other provinces as well as internationally.

Exploration activity, especially that targeting new play types, is not expected to increase significantly under the current economic pressure. There had been a significant increase in drilling in the Lower Silurian sandstone play in 2006, but that activity has declined from 2007 onward.

The development of unconventional resources, which has progressed rapidly in the northeast United States, has yet to be introduced into Ontario. Equivalent targets of organic-rich facies including the Georgian Bay–Blue Mountain Formation that have been explored and/or exploited in other jurisdictions remain unevaluated in Ontario.

Table 1. Successful oil and gas exploration wells in southern Ontario in 2012 (see Figure 1 for well locations).

Well #	Well Name	Results	Target	TD	Latitude	Longitude	TD Date
1	Clearbeach et al #41, Dunwich 4-24-A	OSGS – POT	CAM	1150	42.71146222	-81.4441525	05/02/2012
2	Clearbeach et al #42, Dunwich 4-6-A-A	OS – POT	DEV	111	42.71062583	-81.43727028	07/02/2012
3	Reef North Airport # 1, Stephen 4-14-XIX	GS – POT	SAL	608	43.29517278	-81.71305083	29/03/2012
4	Tribute et al #21, Plympton 6-12-VIII	BWOP – ACT	SAL	773	43.02079722	-82.14701611	24/09/2012

Abbreviations: CAM = Cambrian; DEV = Devonian; SAL = Salina/Guelph; BWOP = brine well/oil producer; GS = gas show; OS = oil show; OSGS = oil show/gas show; ACT = active; POT = potential; TD = total depth (in metres).

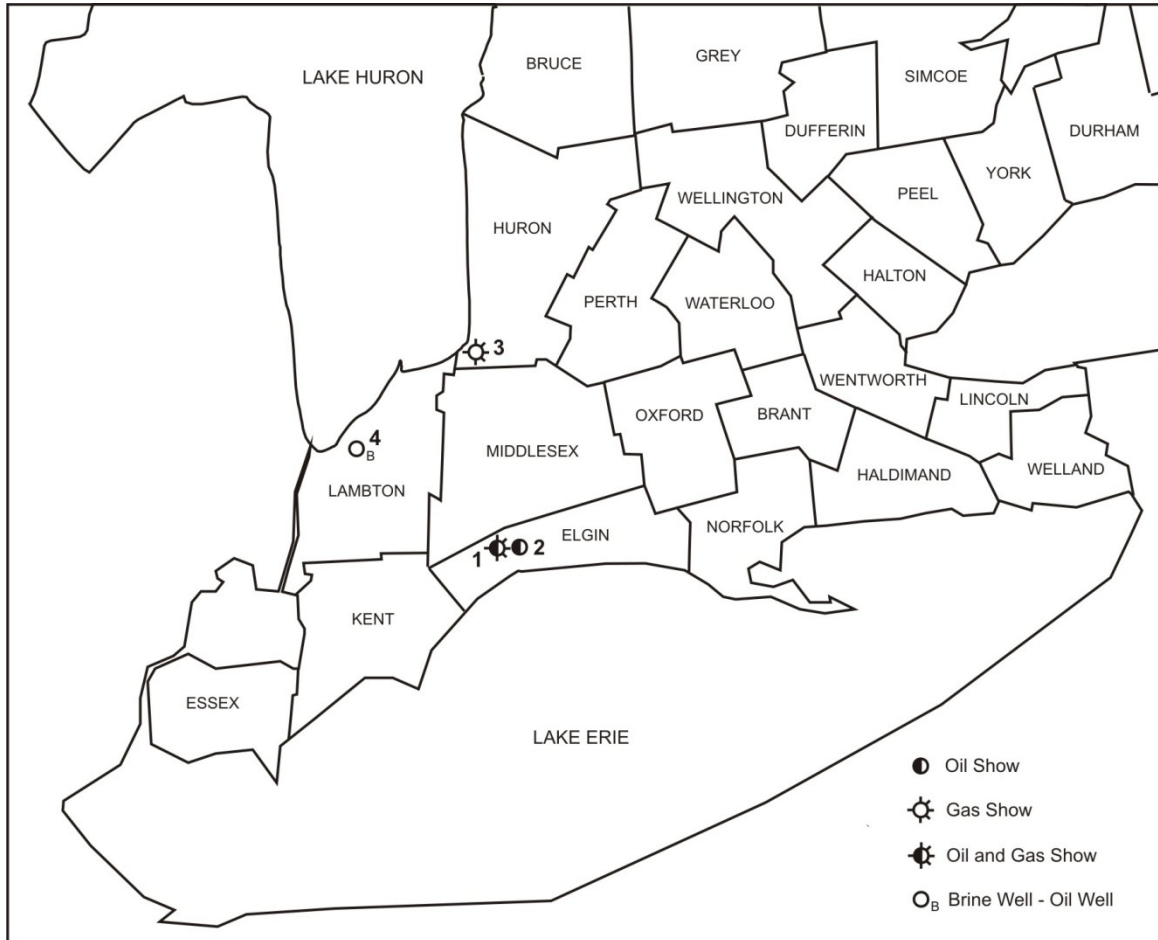


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