



Market Announcements Platform  
ASX Limited  
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ASX Code: CE1

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## **Calima Completes Drilling Completions Review**

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### **Highlights:**

- Calima is proposing to drill three wells in its British Columbia acreage later this year.
- Two of the wells will have 2,500 m horizontal sections which will be fracture stimulated before being put on an extended production test.
- The Company has reviewed completion techniques<sup>(1)</sup> employed on over 500 wells within a 75 km radius of its first drilling location to ensure its well designs are optimized to match the performance improvements of other Operators in British Columbia.

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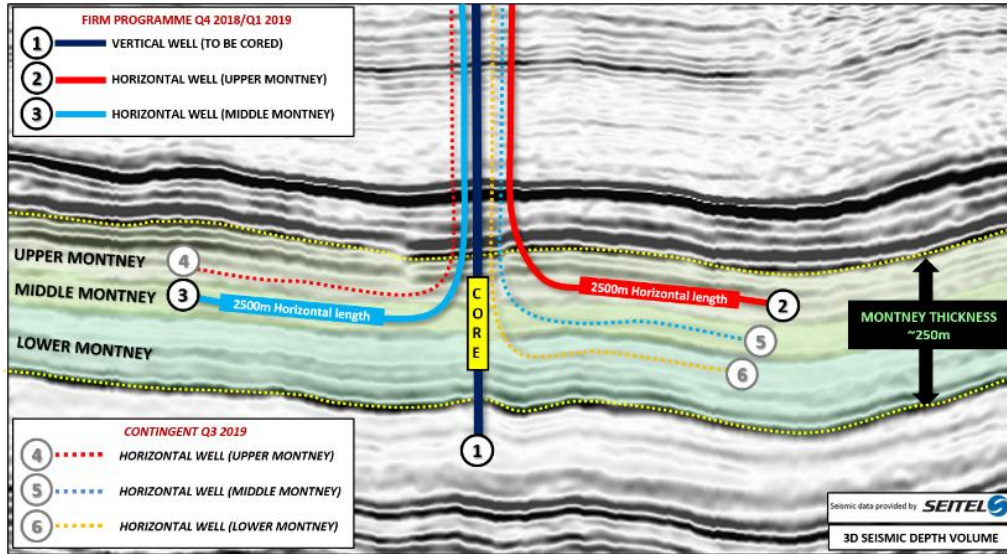
**Calima Energy Limited (ASX:CE1) (“Calima” or the “Company”)** owns 72,000 acres of drilling rights in British Columbia prospective for the Montney Formation. The Company is planning to drill its first wells later this year. Commencing in December it is proposed to drill one vertical well and then two horizontal wells (Figure 1).

The vertical well will provide stratigraphic calibration and will be cored to recover samples of rock for measurement and analysis. The horizontal wells will be stimulated with hydraulic fractures and put on an extended production test over a period of 4-6 weeks. This is a well-established technique in the Montney with more than 5,000 horizontal wells having been drilled to date. It is worth noting that less than 2% of these wells are non-productive<sup>(2)</sup> which is indicative of the pervasive hydrocarbon saturation within the Montney Formation.

Calima has completed a review of more than 500 multi-stage drilling completions in the Montney Formation that lie within a 75km radius of its first drilling location within the Calima Lands in British Columbia. The study undertaken for Calima by Canadian Discovery Limited (“**CDL**”), one of Canada’s leading independent oil and gas services companies, compares the effectiveness of the various kinds of completion techniques used in northern British Columbia as well as the evolution of well performance over time as completion techniques have evolved. The purpose of the study is to ensure that the completion techniques being adopted by Calima take full advantage of the increases in well performance being achieved by other Operators in the region.

*(1) A study of drilling completions is focussed on the events and equipment necessary to bring a wellbore into production once drilling operations have been completed.*

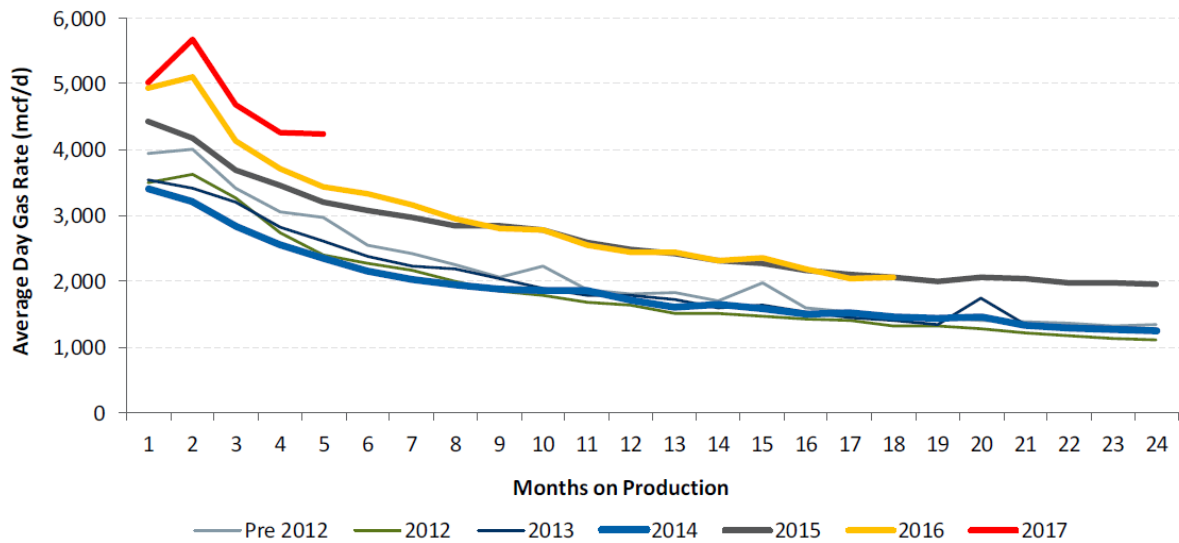
*(2) RBC Energy Insights – October, 2017.*



	NOV 18	DEC 18	JAN 19	FEB 19	MAR 19
ACCESS	[Solid black bar]				
LEASE CONSTRUCTION	[Solid black bar]				
DRILLING	Drill Inj Well	Drill Hz 1	Drill Hz 2		
WATER	C-ring Installation		Pumping Complete Hz 1		
COMPLETION	Complete Inj. Well		Complete Hz 2	Available Test Period	

Figure 1 – Schematic and timeline of upcoming Calima drilling program. Wells 1-3 are proposed for drilling during the northern winter (December-March). Wells 4-6 are part of a contingent programme planned for later in 2019.

The productivity of wells drilled into the Montney has improved significantly year on year as Operators have optimised the completion techniques being adopted. A comparison of average daily gas production rate in Figure 2 shows the year on year increases in productivity in Northern British Columbia.



**Figure 2 – Year on year comparison of average daily gas production rate from Montney wells in northern British Columbia (Source RBC – Oct 2017)**

The increases in productivity seen in Figure 2 can be attributed to improvements in completion techniques which, in simplistic terms, reflect increasing length of horizontal sections, an increase in the number of stages and an increase in the proppant loading per well.

The length of horizontal well sections, number of stages and the proppant loading in Montney wells have been increasing year on year leading to improved well performance. The number of stages refers to the number of intervals within the horizontal portion of the well bore which are isolated then sequentially fractured (stage-by-stage) providing improved control of fracture propagation and density. Proppant loading refers to the amount (in tonnes per metre) of sand grains pumped into the well bore, to keep open hydraulically induced fractures during production.

Although full details of the completion design being proposed by Calima remain confidential it is proposed to drill 2,500 m horizontal sections with 85-90 stimulation stages and ~1.2-1.5 tonnes per metre of proppant loading. The study by Canadian Discovery Limited gives the Company confidence that the well design proposed by Calima could be considered as being comparable with best-practice for the area.

**Calima’s Managing Director, Alan Stein, commented –** “The extensive review conducted by Canadian Discovery gives us confidence that our drilling plans are aligned with the best practice of other successful operators in northern British Columbia”.



For further information visit [www.calimaenergy.com](http://www.calimaenergy.com) or contact:

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## About Calima Energy

**Calima Energy Limited (ASX:CE1)** is an international oil and gas company with over 72,000 acres of drilling rights prospective for the Montney Formation in British Columbia, the most active oil and gas play in Canada.

Calima, which features a board and management made up of some of the most successful oil and gas executives of recent years, is fast-tracking a major oil and gas opportunity in one of the world's most successful and sought after plays.

The Company is preparing to drill several wells close to existing infrastructure, including pipelines and processing facilities.

Calima's neighbours in the Montney include international operators Shell, ConocoPhillips and PETRONAS, as well as Canadian producers Black Swan Energy, Saguaro Resources and Painted Pony Energy. The region's liquids-rich hydrocarbon reserves are being targeted for LNG export alongside domestic and international oil market opportunities.

## About Canadian Discovery Limited

**Canadian Discovery Limited (CDL)** is an independent, global energy information services company headquartered in Calgary, Alberta. For over 30 years, CDL has evolved to deliver oil & gas data, analytics and expertise via online applications and supporting consultancy services. Geoscientists, engineers, investors and executives at hundreds of organisations worldwide currently leverage CDL's insights to maximise results. CDL has worked with clients to explore new basins, optimise operations and assess opportunities in Western Canada, the U.S. and around the world. Over the past five years alone, CDL has completed 250 projects for more than 100 clients. CDL is uniquely positioned with the right datasets and deep knowledge to deliver technical assessments for Western Canada. We also provide specialised data to companies seeking to better access, integrate and/or analyse their data.

## Forward-Looking Statements

*This document may include forward-looking statements. Forward-looking statements include, but are not limited to, statements concerning Calima Energy Limited's planned activities and other statements that are not historical facts. When used in this document, the words such as "could," "plan," "estimate," "expect," "intend," "may", "potential", "should," and similar expressions are forward-looking statements. Although Calima Energy Limited believes that its expectations reflected in these forward-looking statements are reasonable, such statements involve risks and uncertainties and no assurance can be given that actual results will be consistent with these forward-looking statements.*