



8 July 2019

Significant Resource Increase for Calima Lands

Highlights:

- Post drilling independent resource assessment delivers a significant increase in total resources including maiden Contingent Resource classification
 - McDaniel & Associates revises Best estimate of gross un-risked **prospective resources (2U)** of **497.3mmboe**
 - Addition of Best Estimate gross un-risked **contingent resources (2C)** of **196.1mmboe**
 - Estimated Ultimate Recovery (EUR) **8.4 Bcf** per well (2018; 5.6-6.8 Bcf)
 - The Company would expect to be able to make a **2P Reserves (Proved+Probable Undeveloped)** statement following completion of ongoing commercial negotiations during 2H 2019
-

Calima Energy Limited (ASX:CE1) (Calima or Company) operates 72,014 acres of drilling rights over acreage (Calima Lands) in British Columbia, Canada. The acreage position comprises 105 drilling sections in which Calima Energy have a 100% working interest. McDaniel & Associates (McDaniel), a leading independent geological consulting firm with extensive experience of the Montney Formation, was commissioned to prepare an evaluation of the crude oil, natural gas and natural gas products prospective resources of the Calima Lands to 2018 PRMS standards. McDaniel's Best Estimates of total un-risked contingent and prospective resources within the Calima Lands are summarised in Tables 1A/1B and Figure 1.

Alan Stein, Calima's Managing Director commented:

"This is an excellent result which demonstrates the scale of the opportunity presented by the Company's Montney acreage position. With 2C Contingent Resources of 196.1 mmboe and 2U Prospective Resources of 497.3 mmboe we are well positioned to move forward with our strategy focused on realising value for our shareholders from this exciting asset. This represents a significant uplift on the resource estimates published by the Company last year. The inclusion of 2C Contingent Resources and the uplift in estimated ultimate recovery per well to 8.4 Bcf is directly related to the excellent results from our drilling campaign earlier this year. As we progress with our commercial negotiations regarding access to pipeline and processing infrastructure, we would expect to convert some of our Contingent Resources into Reserves during 2H 2019."

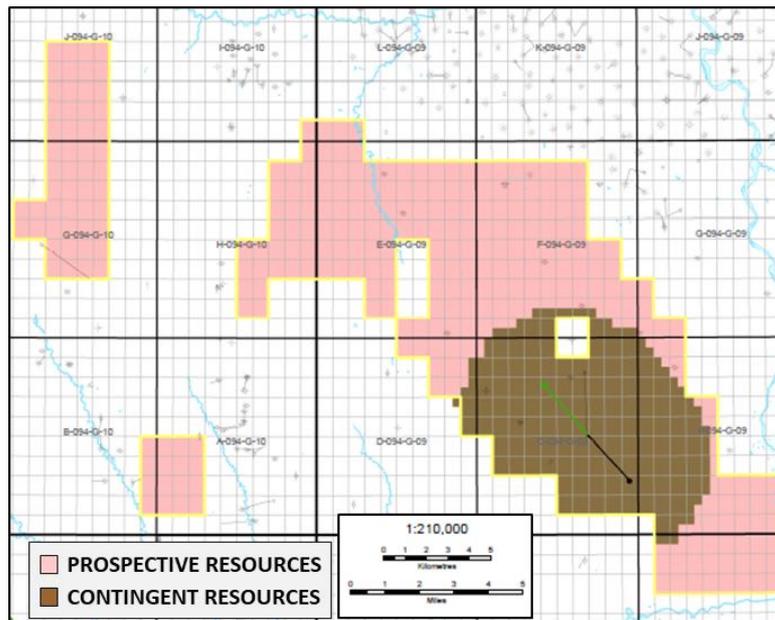


Figure 1 - Map of Calima Lands defining the areas of Prospective (pink) and Contingent (brown) Resources.

1A Gross Unrisked Contingent Resources ⁴ (2C) based upon 124 wells over 20,549 acres		
Natural Gas (mmcf)	Gross	904,897
	Net after Royalties	730,359
Condensate (mdbl)	Gross	20,115
	Net after Royalties	16,912
Natural Gas Liquids ¹ (mdbl)	Gross	25,136
	Net after Royalties	21,133
TOTAL LIQUIDS ² (mdbl)	Gross	45,251
	Net after Royalties	38,045
TOTAL mboe ³	Gross	196.1
	Net after Royalties	159.8

1B Gross Unrisked Prospective Resources ⁵ (2U) based upon 314 wells over 51,488 acres		
Natural Gas (mmcf)	Gross	2,295,070
	Net after Royalties	1,795,581
Condensate (mdbl)	Gross	51,017
	Net after Royalties	42,355
Natural Gas Liquids ¹ (mdbl)	Gross	63,752
	Net after Royalties	52,928
TOTAL LIQUIDS ² (mdbl)	Gross	114,769
	Net after Royalties	95,283
TOTAL mboe ³	Gross	497.3
	Net after Royalties	394.4

Table 1A – Best estimate Unrisked Contingent (2C) Resources and Table 1B - Prospective (2U) Resources of the Calima Lands as estimated by McDaniel & Associates effective 1 July, 2019



Notes to accompany Tables 1A & 1B

(1) Natural Gas Liquids refers to the product recovered after processing. Approximately 10 bbl/MMcf of the product recovered after processing is also condensate (C5) see also Note 2.

(2) Sum of Condensate and Natural Gas Liquids. Based on Company drilling results public domain data and the results of wells drilled on adjacent land McDaniel estimate that the average condensate to gas ratio for wells in the Calima Lands would be 22.5 bbl/MMcf (wellhead condensate/gas ratio) for the Middle Montney and 17.5bbl/MMcf for the Upper Montney. Additional liquids 25bbl/MMCF would be stripped from the gas upon processing comprising 6 bbl/MMcf of C3, 9 bbl/MMcf of C4, and 10 bbl/MMcf of C5+ (Condensate).

(3) Barrels of Oil Equivalent based on 6:1 for Natural Gas, 1:1 for Condensate and C5+, 1:1 for Ethane, 1:1 for Propane, 1:1 for Butanes. BOE's may be misleading, particularly if used in isolation. A BOE conversion ratio of 6 Mcf:1 bbl is based on an energy equivalency conversion method primarily applicable at the burner tip and does not represent a value equivalency at the wellhead.

(4) Contingent Resources (2C) - Those quantities of petroleum estimated, as of a given date, to be potentially recoverable from known accumulations by application of development projects, but which are not currently considered to be commercially recoverable owing to one or more contingencies. Contingencies may include factors such as economic, legal, environmental, political, and regulatory matters, or a lack of markets. Contingent resources are further categorized in accordance with the level of certainty associated with the estimates and may be sub-classified based on project maturity and/or characterized by the economic status. The Contingent Resources (2C) in Tommy Lakes have been sub-classified as a "Development on Hold" as the accumulation is well defined and does represent a viable drilling target. The Contingent Resources have been classified using a deterministic method of estimation having an evaluation date of 1 July 2019.

(5) Prospective resources (2U) are the estimated quantities of petroleum that may potentially be recovered by the application of a future development project(s) related to undiscovered accumulations. These estimates have both an associated risk of discovery and a risk of development. Further exploration appraisal and evaluation is required to determine the existence of a significant quantity of potentially moveable hydrocarbon. The Prospective Resources (2U) in Tommy Lakes have been sub-classified as a "Prospect" as the accumulation is well defined and does represent a viable drilling target. The prospective resources have also been classified using a deterministic method having an evaluation date of 1 July 2019.

(6) Pre-Development – A pre-development study is an intermediate step in the development of a project scenario. The amount of information that is available for the reservoir of interest is greater than for a conceptual study. In particular, the petroleum initially in place has been reasonably well defined and the remaining uncertainty lies largely in the recovery factor and the economic viability.

The current resource estimate now includes both Best Estimate Contingent (2C) and Prospective (2U) resources (Tables 2A, 2B). In comparison the 2018 assessment (ASX announcement 14 March 2018) contained only Prospective (2U) resources (Table 3).

	Natural Gas ¹ (mmcf)	Condensate (mbbl)	Natural Gas Liquids (mbbl)	TOTAL LIQUIDS ² (mbbl)	TOTAL ³ mmboe
2A - 2019 Contingent Resource (2C)⁴	904,897	20,115	25,136	45,251	196.1

	Natural Gas ¹ (mmcf)	Condensate (mbbl)	Natural Gas Liquids (mbbl)	TOTAL LIQUIDS ² (mbbl)	TOTAL ³ mmboe
2B - 2019 Prospective Resource (2U)	2,295,070	51,017	63,752	114,769	497.3

Table 2A – McDaniel 2019 Best Estimate Gross Unrisked Contingent Resource and 2B Gross Unrisked Prospective Resource (refer Table 1 footnotes and see Figure 1 for areal distribution)

	Natural Gas ¹ (mmcf)	Condensate (mbbl)	Natural Gas Liquids (mbbl)	TOTAL LIQUIDS ² (mbbl)	TOTAL ³ mmboe
2018 Prospective Resource (2U)	2,168,188	54,205	60,227	114,432	475.8

Table 3 – McDaniel 2018 Best Estimate Gross Unrisked Prospective Resource (refer Table 1 footnotes)



Method of Preparation

The resource estimates have been prepared and presented in accordance with the Canadian standards set out in the Canadian Oil and Gas Evaluation Handbook (COGEH) and National Instrument 51-101 (NI 51-101), and have been classified in accordance with the Society of Petroleum Engineers' Petroleum Resources Management System (SPE-PRMS) and reported in the most specific resource class in which the prospective resource can be classified under 2018 SPE-PRMS.

In accordance with the applicable guidelines the volumes presented in the McDaniel's report were risked for the chance of commerciality. The chance of commerciality is the product of the chance of discovery and the chance of development. The chance of discovery in an unconventional resource such as the Montney is associated with the likelihood that commercially viable concentrations of hydrocarbon within a given region exist (i.e. sufficient thickness and porosity), and not necessarily whether hydrocarbons of any concentration will be found. The presence of hydrocarbons within the Montney resource is considered broadly mappable; however, area specific thicknesses and differences in reservoir quality will ultimately determine commercial viability.

Resource Classification

The Contingent Resources (2C) in Tommy Lakes have been sub-classified as a "Development on Hold" as the accumulation is well defined and does represent a viable drilling target. The drilling target is further confirmed by the high level of Montney development in the area by offsetting producers, however, there is significant uncertainty as to how the resource will be developed given that the Company is in negotiations to access processing capacity. For the Montney Upper and Middle zones, a chance of development of 70% have been assigned as the Company is in relatively early stages of development at this point. A technology status of "established" (meaning existing well drilling and completion practices) and a project evaluation scenario of Pre-Development⁶ also apply as the amount of petroleum initially in place has been reasonably well defined but there is uncertainty around actual performance of the wells and future processing capacity⁴.

The Prospective Resources (2U) in Tommy Lakes have been sub-classified as a "Prospect" as the accumulation is well defined and does represent a viable drilling target. This project maturity status sub-classification is further confirmed by the high level of Montney development in the area by offsetting producers. For the Montney Upper and Middle zones, a chance of discovery factor of 90% (previously 75%) and a chance of development of 70% have been assigned as the Company is in relatively early stages of development at this point.

Methodology

The gross thickness of the Montney Formation and reservoir quality vary depending on geographical area. In the Tommy Lakes Area, the Montney section is approximately 240 metres thick. Lithological variations are evident both vertically and laterally; in general, the upper portion of the section is a



coarse-grained dolomitic sand, the middle interval is a fine-grained laminated sand and the Lower Zone is comprised of fine- to very fine-grained feldspathic, dolomitic sand, laminated with shale.

The Montney Formation has been contour mapped using vertical control points on and offsetting Company lands. Continuous sand packages have been correlated across the acreage and mapped for reservoir parameters independently. The “Upper Montney” is mapped as five different units referred to as the Montney A through D, and F. The pay thickness of these combined zones is over 90 metres. Porosity ranges between 4% and 5%. The “Middle Montney” is mapped as two units, the Montney G and H. The combined thickness is over 90 metres, and the porosity ranges between 4% and 5%.

Lateral and vertical changes in grain density are evident throughout the Montney. These differences are due to changes in mineralogy and facies which was influenced by sediment supply and deposition. Clean coarse grained shoreface deposits typically have lower grain densities than distal low energy deposits, the lower energy deposits often have higher concentrations of limestone and dolomite.

Net pay and porosity values were determined from the available well logs and core in the study area and used to estimate the Discovered GIIP. An effective porosity was calculated to account for kerogen and other organic matter present within the reservoir and is approximated by removing the estimated shale volume from the density porosity. A 3% cut-off was then applied to the effective porosity to determine the net pay. The porosity for each well is an average effective porosity over the pay interval.

Water saturations were mapped spatially using values calculated from logs using the Archie equation. Water saturation values compare favourably to core water saturations.

Pressure maps for the Montney were created from proprietary and public data sources. On Company land the reservoir is slightly over pressured in the Upper Montney with a pressure gradient averaging 10.7 kPa/m, the Middle and Lower Montney are also over pressured with an average pressure gradient of 12.4 kPa/m.

All of the various reservoir parameters are then combined to calculate the exploitable free original gas in-place (OGIP).

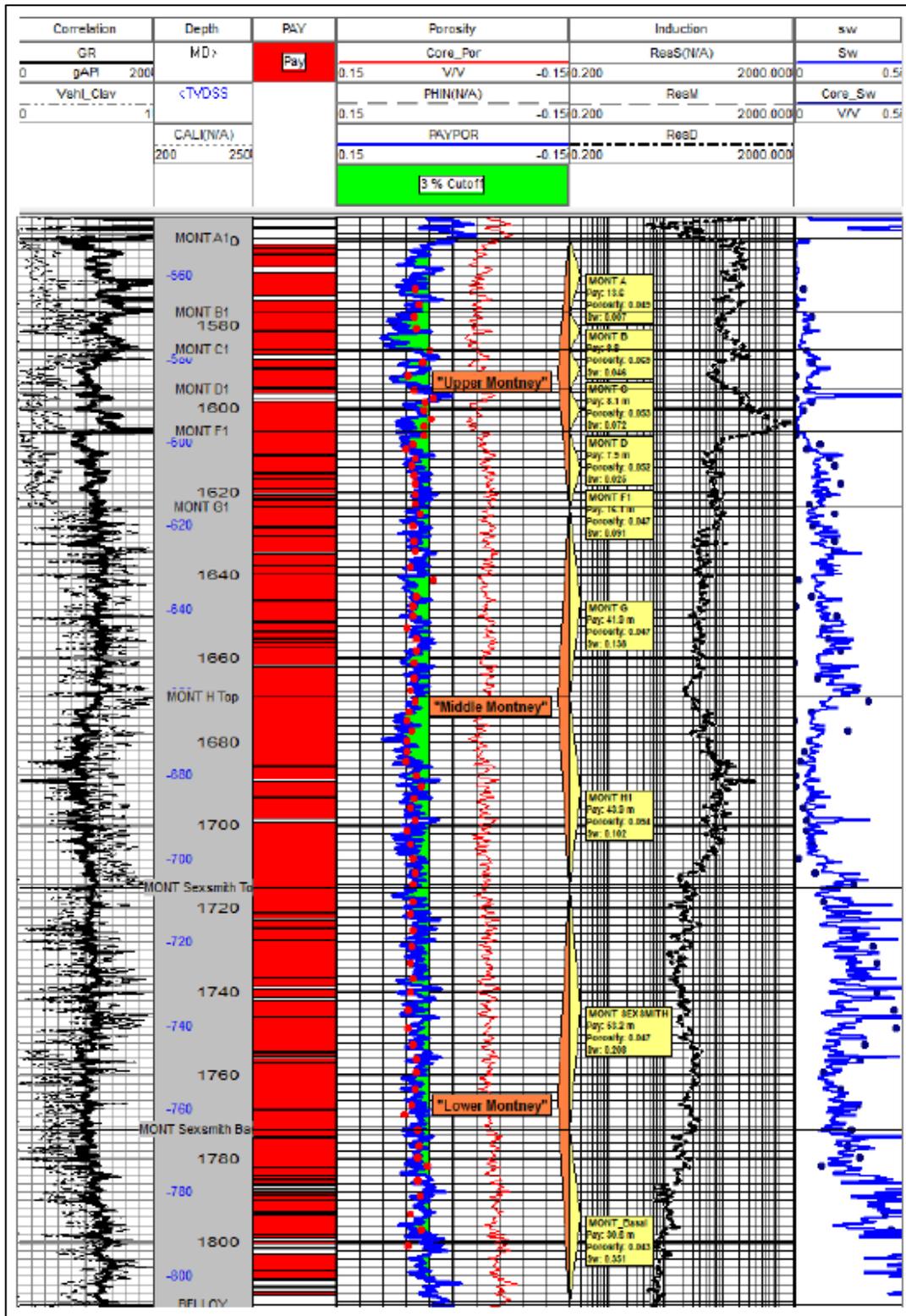


Figure 2 - The calculated net pay, porosity and water saturation are shown on the 200/a-054-C/094-G-09 type log along with stratigraphic zones and tops. Core porosity and Core Sw are denoted by the red and blue dots, respectively.





Original Gas in-Place and Reservoir Parameters

Nine individual zones have mapped separately for net pay, porosity, water saturation and structure. These reservoir parameters were used along with the corresponding pressure gradient to calculate original gas in-place per quarter unit for each of the nine individual zones. The resulting gas in-place was then combined to calculate the gas in-place for the Upper and Middle Montney.

Resource Estimates

Type curve analysis was performed on Montney Upper, Middle and Lower zones using nearby analogs in the Tommy Lakes Area. In recent years, average well length has increased from approximately 1,900 metres to 2,500 metres, while proppant loading has increased from an average of 1 to 1.3 tons per metre.

On a normalized per 100 metre basis, analogous wells look capable of recovering anywhere from 0.2 to 0.4 Bcf. There appears to be no notable deterioration with EUR per 100 metre with the increasing lateral length. An analysis of various completion methods on the analogous wells showed that while there may be some relationships between various completion methods and EUR, none seemed to stand out as obvious performance drivers. Alternatively, there did seem to be an obvious correlation between OGIP and well performance.

Based on regional analogs CGR for the Montney Upper and Middle type curves has been forecast at 17.5 bbl/MMcf and 22.5 bbl/MMcf. respectively. Resulting type curve parameters are shown in Table 4.

	MONT U	MONT M
IP (Mcfpd)	6,000	6,000
EUR (MMcf)	8,400	8,400
bN	1.4	1.4
Min Decl %	8.00	8.00
Well Hz Length (m)	3,000	3,000
IP/100m (Mcfpd)	200	200
EUR/100m (MMcf)	280	280

Table 4 - Montney Upper and Middle Type Well parameters

In the Upper and Middle Montney, a ring fence for contingent resources was determined within the Company lands based on a three-mile radius from their first two horizontal drills. The remainder of Company lands was considered a part of the prospective resources ring fence.

An aerial exploitation factor of 80% was applied to the Montney Upper and Middle zones. The areal exploitation factor accounts for areas of reservoir that are not likely to be developed due to surface and subsurface constraints such as pad placement inefficiencies, drainage orientation relative to lease



boundaries and removal of areas with higher water saturation or lower OGIP that have yet to be fully resolved pending additional well control.

Well counts were determined by taking the ring fences from the above method and dividing by the average drainage area for 350 metre well spacing and 3,000 metre well length.

Qualified petroleum reserves and resources evaluator statement

The petroleum resources information in this announcement is based on, and fairly represents, information and supporting documentation in a report compiled by technical employees of McDaniel and Associates Ltd, a leading independent Canadian petroleum consulting firm registered with the Association of Professional Engineers and Geoscientists of Alberta, and was subsequently reviewed by Mr Mark Sofield who is a consultant (Havoc Services Pty Ltd) contracted to Calima Energy. Mr Sofield holds a BSc. Geology (Hons), is a Geologist with over 20 years of experience in petroleum geology, geophysics, prospect generation and evaluations, prospect and project level resource and risk estimation and is a member of the American Association of Petroleum Geologists. Mr Sofield has consented to the inclusion of the petroleum resources information in this announcement in the form and context in which it appears.

For further information visit www.calimaenergy.com or contact:

Alan Stein	Jonathan Taylor	Glenn Whiddon
Managing Director	Technical Director	Chairman
E: astein@calimaenergy.com	E: jtaylor@calimaenergy.com	E: glenn@lagral.com
T: +61 8 6500 3270	T+ 44 77391 77805	T: +61 0 410 612 920

About Calima Energy

Calima Energy Limited (ASX:CE1) is an international oil and gas company with more than 72,000 acres of drilling rights for the Montney Formation in British Columbia, the most active oil and gas play in Canada. Calima's neighbours in the Montney include international operators Shell, ConocoPhillips and Petronas Canada, 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.