



# Lagasco Inc.

Reserve estimation and economic evaluation

Executive summary

Effective date: June 30, 2019

August 23, 2019

Lagasco Inc.  
Unit B, 1030 Adelaide St. S.  
London, ON N6E 1R6

Attention: Ms. Jane Lowry

**RE: Lagasco Inc.  
Reserve estimation and economic evaluation**

At your request and authorization, Deloitte LLP has prepared an independent evaluation of certain oil and gas assets of Lagasco Inc. (Lagasco) in the various areas of Alberta and Ontario, effective June 30, 2019.

This report has been prepared for the exclusive use of Lagasco Inc. and no part thereof shall be reproduced, distributed or made available to any other person, company, regulatory body or organization without the complete content of the report and the knowledge and consent of Deloitte LLP.

The evaluation includes an estimate of proved developed producing, total proved and proved plus probable reserves with an associated forecast of the pre-tax present value of future production income from the property using Deloitte June 30, 2019 forecast pricing. All values are in Canadian dollars unless specified. This report documents the results of the evaluation with the following table summarizing the total corporate reserves and value:

- Table 1 – Summary of total corporate reserves and value using forecast prices and costs
- Table 2 – Reserves reconciliation

The oil and gas reserves calculations and income projections, upon which this report is based, were estimated in accordance with the Canadian Oil and Gas Evaluation Handbook (COGEH). The Evaluation Procedure section included in this report details the reserves definitions, price and market demand forecasts and general procedure used by Deloitte in its determination of this evaluation. The extent and character of ownership and all factual data supplied by Lagasco Inc. were accepted as presented (see Representation Letter attached within).

This report contains forward-looking statements including expectations of future production and capital expenditures. Information concerning reserves may also be deemed to be forward looking as estimates imply that the reserves described can be profitably produced in the future. These statements are based on current expectations that involve a number of risks and uncertainties, which

could cause the actual results to differ from those anticipated. These risks include, but are not limited to: the underlying risks of the oil and gas industry (i.e. operational risks in development, exploration and production; potential delays or changes in plans with respect to exploration or development projects or capital expenditures; the uncertainty of reserves estimates; the uncertainty of estimates and projections relating to production, costs and expenses, and political and environmental factors) and commodity price and exchange rate fluctuation. Present values for various discount rates documented in this report may not necessarily represent fair market value of the reserves.

A Boe conversion ratio of six (6) Mcf: one (1) barrel has been used within this report. This conversion ratio is based on an energy equivalency conversion method primarily applicable at the burner tip and does not represent a value equivalency at the wellhead.

No value has been assigned in this evaluation for non-reserve lands.

It has been a pleasure to perform this evaluation for you and we trust it is sufficient to meet your current requirements. Should you have any questions, please contact Robin Bertram at 403 648 3223 or Debbie Horbachewski at 403 648 3271.

Yours truly,

*Original signed by : "Robin G. Bertram"*

Robin G. Bertram, P. Eng.  
Partner  
Deloitte LLP

TABLE 1

Selection: Canada  
Effective: June 30, 2019

## Summary of Marketable Reserves and Value

Lagasco Inc.  
Deloitte June 30, 2019 Forecast Pricing

Page 1 of 1

	PDP	PNP	PD	PUD	TP	PB	P+P
<b>Oil (Mbbl)</b>							
Gross Remaining	1,559	57	1,615	250	1,865	648	2,514
Company Interest	1,431	57	1,488	250	1,738	618	2,356
Working Interest	1,421	57	1,477	250	1,727	616	2,343
Royalty Interest	10	-	10	-	10	2	13
Company Net	1,215	46	1,261	218	1,479	525	2,004
<b>Gas (MMcf)</b>							
Gross Remaining	63,422	1,569	64,992	8,556	73,547	22,392	95,940
Company Interest	61,678	1,569	63,247	8,556	71,803	22,065	93,868
Working Interest	61,672	1,569	63,241	8,556	71,797	22,064	93,861
Royalty Interest	6	-	6	-	6	1	7
Company Net	52,259	1,293	53,552	7,171	60,723	18,492	79,215
<b>NGLs (Mbbl)</b>							
Gross Remaining	3	-	3	-	3	1	4
Company Interest	3	-	3	-	3	1	4
Working Interest	3	-	3	-	3	1	4
Royalty Interest	-	-	-	-	-	-	-
Company Net	2	-	2	-	2	1	3
<b>Sulphur (MLt)</b>							
Gross Remaining	-	-	-	-	-	-	-
Company Interest	-	-	-	-	-	-	-
Working Interest	-	-	-	-	-	-	-
Royalty Interest	-	-	-	-	-	-	-
Company Net	-	-	-	-	-	-	-
<b>BOE (Mbbl)</b>							
Gross Remaining	12,132	319	12,450	1,676	14,126	4,381	18,508
Company Interest	11,713	319	12,032	1,676	13,708	4,297	18,005
Working Interest	11,702	319	12,020	1,676	13,696	4,294	17,991
Royalty Interest	11	-	11	-	11	2	14
Company Net	9,927	262	10,188	1,413	11,602	3,608	15,210
<b>Revenue (M\$C)</b>							
Undiscounted	211,995	8,486	220,481	36,945	257,426	118,462	375,888
5%	125,928	5,368	131,296	20,448	151,744	52,861	204,605
8%	100,855	4,359	105,214	15,061	120,275	36,693	156,969
10%	89,046	3,867	92,912	12,435	105,347	29,784	135,130
15%	68,953	3,007	71,960	7,891	79,851	19,256	99,107
20%	56,342	2,454	58,796	5,069	63,864	13,524	77,388

**TABLE 2**  
**Lagasco Inc.**  
**NI 51-101 FORECAST CASE**  
**RECONCILIATION OF COMPANY GROSS RESERVES BY PRINCIPAL PRODUCT TYPE**  
**Canada**

Effective June 30, 2019

Opening: March 30, 2018

Closing: Deloitte June 30, 2019 Forecast Pricing

	Light & Medium Oil				Conventional Gas				Natural Gas Liquids			
	Proved Developed Producing	Total Proved	Probable	Proved + Probable	Proved Developed Producing	Total Proved	Probable	Proved + Probable	Proved Developed Producing	Total Proved	Probable	Proved + Probable
	Mstb	Mstb	Mstb	Mstb	MMcf	MMcf	MMcf	MMcf	Mstb	Mstb	Mstb	Mstb
Opening Balance	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Production	-184.6	-184.6	0.0	-184.6	-4,830.3	-4,830.3	0.0	-4,830.3	-0.4	-0.4	0.0	-0.4
Technical Revisions	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Extensions & Improved Recovery	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Discoveries	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Acquisitions	1,605.1	1,911.8	615.9	2,527.7	66,502.0	76,626.8	22,064.5	98,691.3	3.0	3.5	1.1	4.6
Dispositions	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Economic Factors	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Infill Drilling	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Closing Balance	1,420.5	1,727.2	615.9	2,343.1	61,671.7	71,796.5	22,064.5	93,861.0	2.6	3.1	1.1	4.2



## Independent petroleum consultants consent

The undersigned firm of Independent Qualified Reserves Evaluators and Auditors of Calgary, Alberta, Canada has prepared an independent evaluation and audit of reserves and future net revenues derived therefrom, of the Petroleum and Natural Gas assets of the interests of Lagasco Inc. according to the Canadian Oil and Gas Evaluation Handbook. If required, these reserves and future net revenues were estimated using forecast prices and costs (before and after income taxes) according to the requirements of National Instrument 51-101 (NI 51-101). The effective date of this evaluation is June 30, 2019.

In the course of the evaluation, Lagasco Inc. provided Deloitte personnel with basic information which included land, well and accounting (product prices and operating costs) information, reservoir and geological studies, estimates of on-stream dates for certain properties, contract information, budget forecasts and financial data. Other engineering, geological or economic data required to conduct the evaluation and upon which this report is based, were obtained from public records, other operators and from Deloitte non-confidential files. The extent and character of ownership and accuracy of all factual data supplied for the independent evaluation, from all sources, has been accepted.

A "Representation Letter" dated August 22, 2019 and signed by the President and Vice-President was received from Lagasco Inc. prior to the finalization of this report. This letter specifically addressed the accuracy, completeness, and materiality of all the data and information that was supplied to us during the course of our evaluation of Lagasco Inc.'s reserves and net present values. This letter is included within.

A field inspection and environmental/safety assessment of the properties was beyond the scope of the engagement of Deloitte and none was carried out. The "Representation Letter" received from Lagasco Inc. provided assurance that no additional information necessary for the completion of our assignment would have been obtained by a field inspection.

The accuracy of any reserve and production estimates is a function of the quality and quantity of available data and of engineering interpretation and judgment. While reserve and production estimates presented herein are considered reasonable, and adhere to the COGE Handbook and NI 51-101 (as applicable), the estimates should be accepted with the understanding that reservoir performance subsequent to the date of the estimate may justify revision, either upward or downward.

Revenue projections presented in this report are based in part on forecasts of market prices, current exchange rates, inflation, market demand and government policy, which are subject to uncertainties and may in future differ materially from the forecasts herein. Present values of future net revenues documented in this report do not necessarily represent the fair market value of the reserves evaluated herein.

### **PERMIT TO PRACTICE**

Deloitte LLP  
Permit Number: P-11444

The Association of Professional Engineers  
and Geoscientists of Alberta



## Certificate of qualification

I, I. J. Olsen, a Professional Engineer, of 700, 850 – 2 Street S.W., Calgary, Alberta, Canada hereby certify that:

1. I am an employee of Deloitte LLP, which did prepare an evaluation of certain oil and gas assets of the interests of Lagasco Inc. The effective date of this evaluation is June 30, 2019.
2. I do not have, nor do I expect to receive any direct or indirect interest in the properties evaluated in this report or in the securities of Lagasco Inc.
3. I attended the University of Alberta and graduated with a Bachelor of Science Degree in Chemical Engineering in 2007; that I am a Registered Professional Engineer in the Province of Alberta; and I have in excess of 12 years of engineering experience.
4. I am a Qualified Reserves Auditor as defined in the Canadian Oil and Gas Evaluation Handbook, Section 5.4.3.
5. A personal field inspection of the properties was not made; however, such an inspection was not considered necessary in view of information available from the files of the interest owners of the properties and the appropriate provincial regulatory authorities.

*Original signed by: "I. J. Olsen"*

I. J. Olsen, P. Eng.

*August 23, 2019*

Date



## Certificate of qualification

I, D. L. Horbachewski, a Professional Geologist, of 700, 850 – 2 Street S.W., Calgary, Alberta, Canada hereby certify that:

1. I am an employee of Deloitte LLP, which did prepare an evaluation of certain oil and gas assets of the interests of Lagasco Inc. The effective date of this evaluation is June 30, 2019.
2. I do not have, nor do I expect to receive any direct or indirect interest in the properties evaluated in this report or in the securities of Lagasco Inc.
3. I attended the University of Calgary and graduated with a Bachelor of Science Degree in Geology in 1999; that I am a Registered Professional Geologist in the Province of Alberta; and I have in excess of 19 years of engineering experience.
4. I am a Qualified Reserves Auditor as defined in the Canadian Oil and Gas Evaluation Handbook, Section 5.4.3.
5. A personal field inspection of the properties was not made; however, such an inspection was not considered necessary in view of information available from the files of the interest owners of the properties and the appropriate provincial regulatory authorities.

*Original signed by: "D. L. Horbachewski"*

D. L. Horbachewski, P. Geol.

*August 23, 2019*

Date



August 22, 2019

Deloitte LLP  
700, 850 - 2nd Street SW  
Calgary, Alberta  
T2P 0R8

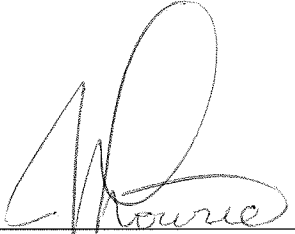

**Re: Standard Representation Letter  
Corporate Reserve Evaluation**

Regarding the evaluation of our Company's oil and gas reserves and independent appraisal of the economic value of these reserves effective June 30, 2019 (the "effective date"), we herein confirm to the best of our knowledge and belief as of the effective date of the reserves evaluation, the following representations and information made to you during the course and conduct of the evaluation.

1. We (the "Client") have made available to you (the "Evaluator") certain records, information and data relating to the evaluated properties that we confirm is, with the exception of immaterial items, complete and accurate as of the effective date of the reserves evaluation including the following:
  - a. accounting, financial and contractual data
  - b. asset ownership and related encumbrance information
  - c. details concerning product marketing, transportation and processing arrangement
  - d. all technical information including geological, engineering and production and test data
  - e. estimates of future abandonment and reclamation costs.
2. We confirm that all financial and accounting information provided to you is, to the best of our knowledge, both on an individual entity basis and in total, entirely consistent with that reported by our Company for public disclosure and annual audit purposes.
3. We confirm that our Company has satisfactory title to all of the assets, whether tangible, intangible or otherwise, for which accurate and current ownership information has been provided.
4. With respect to all information provided to you regarding product marketing, transportation and processing arrangements, we confirm that we have disclosed to you all anticipated changes, terminations and additions to these arrangements that could reasonably be expected to have a material impact on the evaluation of our Company's reserves and future net revenues.
5. With the possible exception of items of an immaterial nature, we confirm as of the effective date of the evaluation that:

- a. For all operated properties that you have evaluated, no changes have occurred or are reasonably expected to occur to the operating conditions or methods that have been used by our Company over the past twelve (12) months, except as disclosed to you. In the case of non-operated properties, we have advised you of any changes of which we have been made aware.
- b. This letter provides assurance that no additional information necessary for the completion of your assignment would have been obtained by a field inspection.
- c. All regulatory approvals, permits and licenses required to allow continuity of future operations and production from the evaluated properties are in place and, except as disclosed to you, there are no directives, orders, penalties or regulatory rulings in effect or expected to come into effect relating to the evaluated properties.
- d. Except as disclosed to you, the producing trend and status of each evaluated well or entity in effect throughout the three month period preceding the effective date of the evaluation are consistent with those that existed for the same well or entity immediately prior to this period.
- e. Except as disclosed to you, we have no plans or intentions related to the ownership, development or operation of the evaluated properties that could reasonably be expected to materially affect the production levels or recovery of reserves from the evaluated properties.
- f. If material changes of an adverse nature occur in the Company's operating performance subsequent to the effective date and prior to the report date, we will undertake to inform you of such material changes prior to requesting your approval for any public disclosure of reserves information.
- g. Between the effective date of the report and the date of this letter, nothing has come to our attention that has materially affected or could materially affect our reserves and the economic value of these reserves that has not been disclosed to you.

Yours truly,

  
\_\_\_\_\_  
Jane Lowrie  
President  
\_\_\_\_\_  
Jennifer Nisker  
Vice-President

# Table of contents

## Executive summary

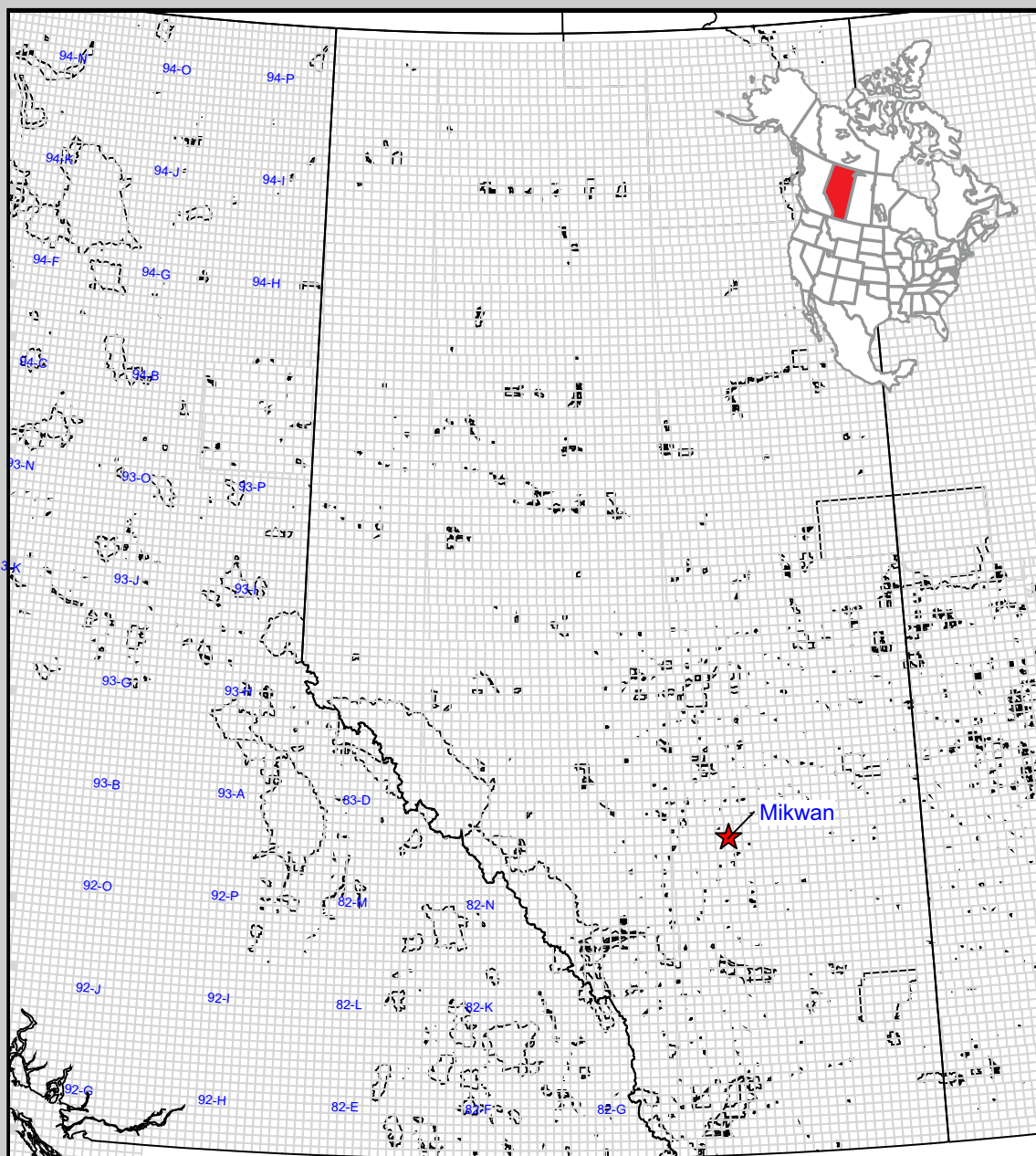
- Property location map
  - Corporate summary
  - Property summary tables

## Economics

- Deloitte June 30, 2019 forecast price

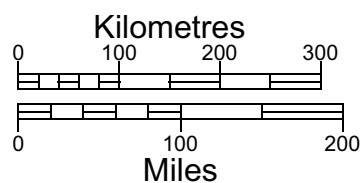
## Evaluation procedure


Effective date: December 31, 2018




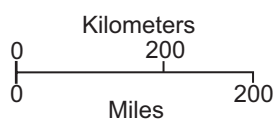
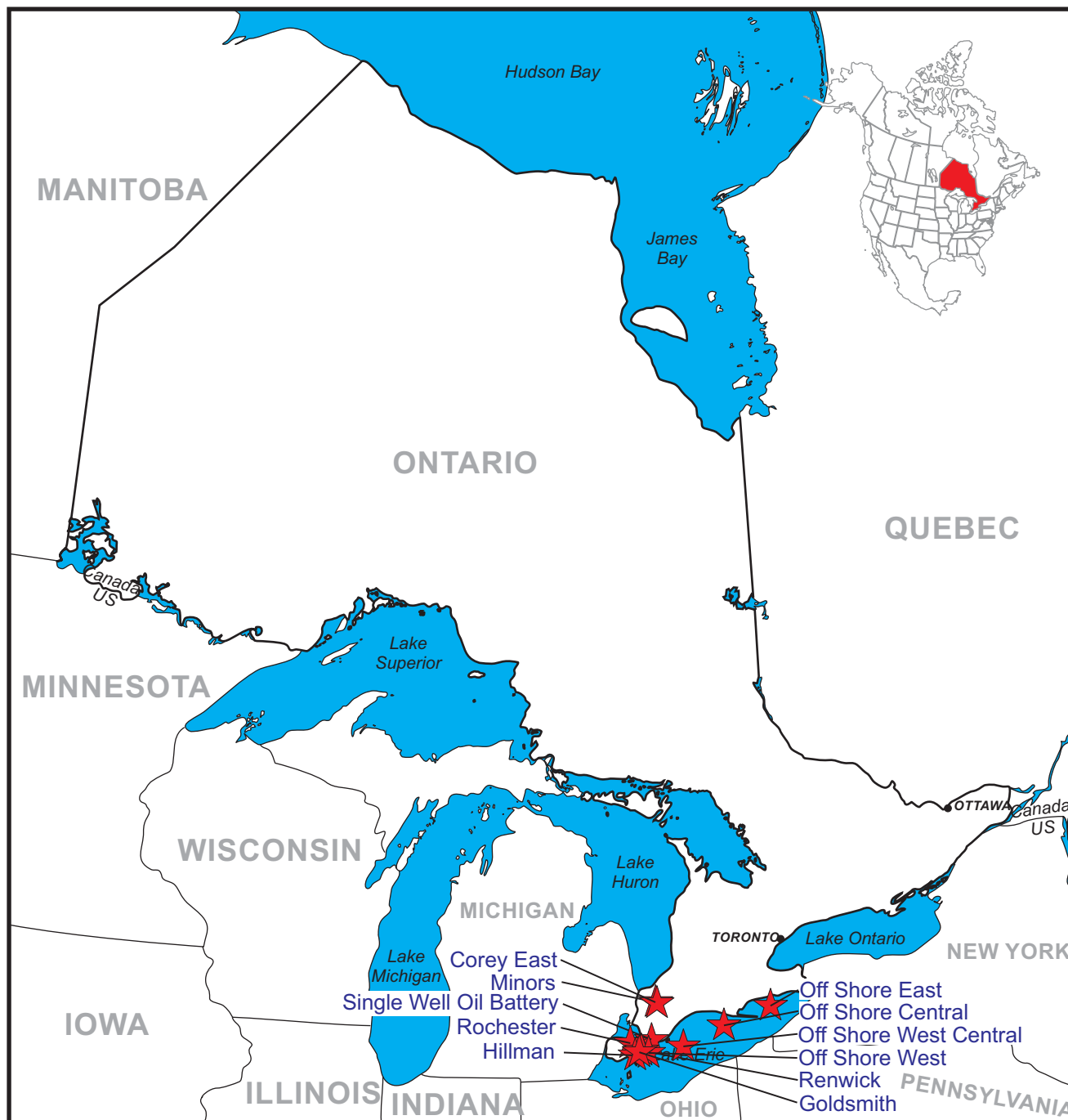
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Legend	
	Evaluated Property

<b>Deloitte.</b>		
<b>Lagasco Inc.</b>		
<b>Property Location</b>		
<b>Effective June 30, 2019</b>		
 www.geologic.com	By : laj	Date : 2019/08/21
	Scale = 1:7500000	Project : dun loc



Legend	
	Evaluated Property

<b>Deloitte.</b>		
<b>Lagasco Inc.</b>		
<b>Property Locations Effective June 30, 2019</b>		
By : laj		Date : 2019/08/21
Project : dun loc		
Source : <a href="http://maps.ogrslibrary.com/">http://maps.ogrslibrary.com/</a>		

## Summary of Marketable Reserves and Value

	PDP	PNP	PD	PUD	TP	PB	P+P
<b>Oil (Mbbl)</b>							
Gross Remaining	1,559	57	1,615	250	1,865	648	2,514
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Company Interest	-	-	-	-	-	-	-
Working Interest	-	-	-	-	-	-	-
Royalty Interest	-	-	-	-	-	-	-
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<b>BOE (Mbbl)</b>							
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Company Net	9,927	262	10,188	1,413	11,602	3,608	15,210
<b>Revenue (M\$C)</b>							
Undiscounted	211,995	8,486	220,481	36,945	257,426	118,462	375,888
5%	125,928	5,368	131,296	20,448	151,744	52,861	204,605
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10%	89,046	3,867	92,912	12,435	105,347	29,784	135,130
15%	68,953	3,007	71,960	7,891	79,851	19,256	99,107
20%	56,342	2,454	58,796	5,069	63,864	13,524	77,388

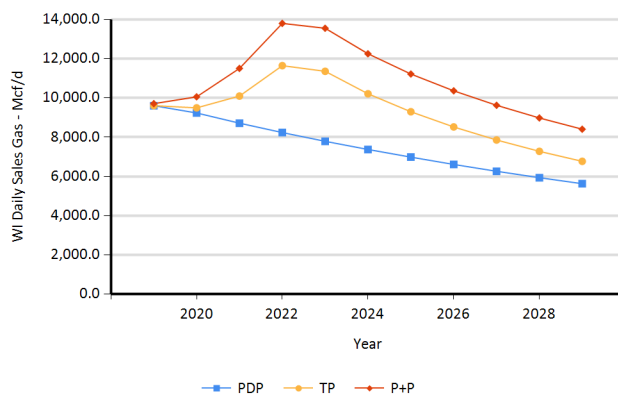
## Net Present Value Before Tax (M\$C)

Discount Rates	PDP	PD	TP	P+P
Undiscounted	211,995	220,481	257,426	375,888
5%	125,928	131,296	151,744	204,605
8%	100,855	105,214	120,275	156,969
10%	89,046	92,912	105,347	135,130
15%	68,953	71,960	79,851	99,107
20%	56,342	58,796	63,864	77,388

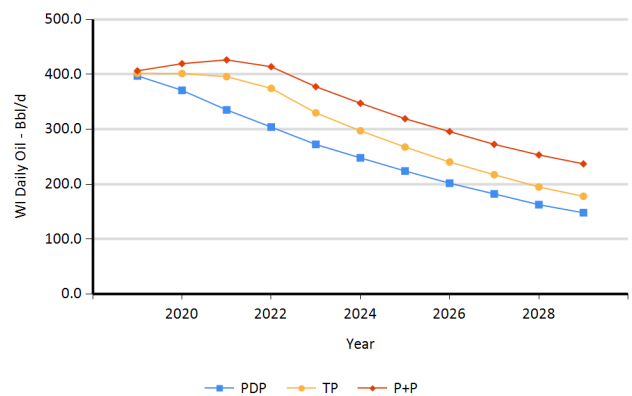
## Company Interest Reserves

Product		PDP	PD	TP	P+P
Oil	(Mbbbl)	1,431	1,488	1,738	2,356
Gas	(MMcf)	61,678	63,247	71,803	93,868
NGLs	(Mbbbl)	3	3	3	4
Sulphur	(MLt)	-	-	-	-
<b>BOE</b>	<b>(Mbbbl)</b>	<b>11,713</b>	<b>12,032</b>	<b>13,708</b>	<b>18,005</b>
<b>Mcfe</b>	<b>(MMcf)</b>	<b>70,280</b>	<b>72,192</b>	<b>82,247</b>	<b>108,028</b>

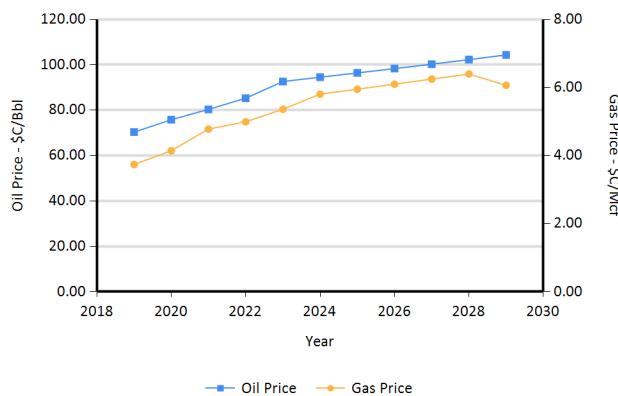
## Daily Sales Gas (WI)



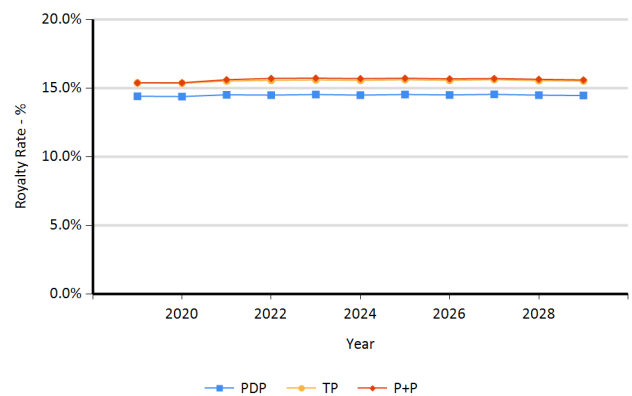
## Daily Oil (WI)



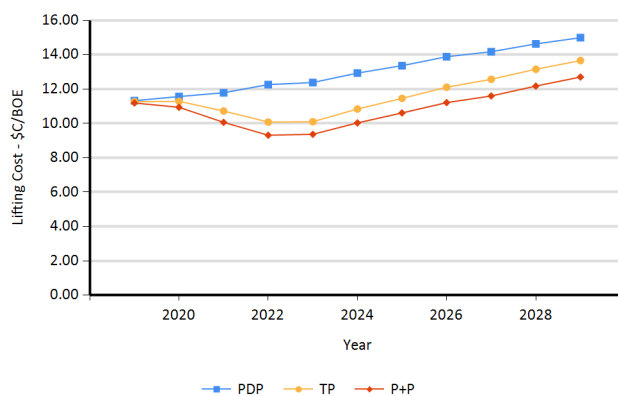
## Calculated Oil and Gas Prices



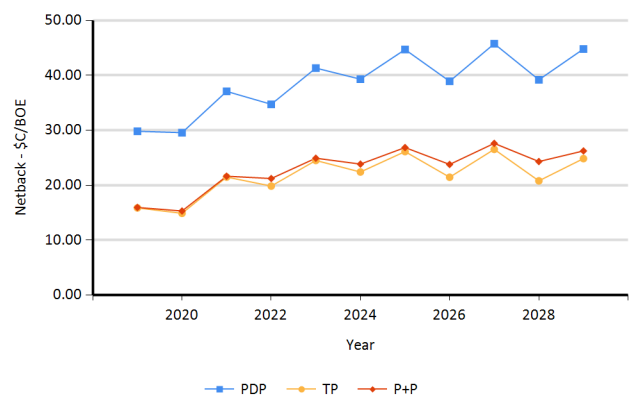
## Royalty Rates



## Lifting Cost



## Netback



Selection: Canada  
Effective: June 30, 2019

## Detailed Reserves and Present Value

Lagasco Inc.  
Deloitte June 30, 2019 Forecast Pricing

Page 1 of 3

Entity Description	Oil (Mbbbl)			Sales Gas (MMcf)			NGL (Mbbbl)			BOE (MBOE)			Present Values (M\$C)		
	WI	RI	Net	WI	RI	Net	WI	RI	Net	WI	RI	Net	0%	5%	10%
<b>Proved Developed Producing</b>															
<b>Canada</b>															
<b>Alberta</b>															
Mikwan													(15.3)	(14.2)	(13.2)
<b>Alberta Total</b>													(15.3)	(14.2)	(13.2)
<b>Ontario</b>															
Corey East	59.9		51.2							59.9		51.2	\$3,135	\$2,177	\$1,623
Goldsmith	201.8		168.9	117.1		96.2	1.4		1.1	222.7		186.1	\$9,763	\$7,128	\$5,506
Hillman	384.2		330.1	383.3		328.6				448.0		384.8	\$23,228	\$15,837	\$12,135
Minors	20.4	10.5	28.3	481.5		421.3				100.6	10.5	98.5	\$3,372	\$1,896	\$1,292
Off Shore Central				17,346		14,310				2,891		2,385	\$33,826	\$22,720	\$16,696
Off Shore East				34,824	6.2	29,921				5,804	1.0	4,987	\$91,719	\$44,237	\$27,647
Off Shore West				2,892		2,522				482.0		420.3	\$6,130	\$2,103	\$1,018
Off Shore West Central				5,252		4,348				875.4		724.7	\$5,662	\$5,249	\$4,129
Petrolia East	158.8		138.5							158.8		138.5	\$10,433	\$5,861	\$3,973
Renwick	294.9		237.7	193.2		152.1	1.3		1.0	328.3		264.1	\$11,525	\$8,501	\$6,662
Rochester	85.6		74.9							85.6		74.9	\$1,757	\$1,867	\$1,789
Single Well Oil Battery	215.1		185.0	182.7		159.9				245.5		211.7	\$11,461	\$8,368	\$6,589
<b>Ontario Total</b>	1,421	10.5	1,215	61,672	6.2	52,259	2.6		2.1	11,702	11.5	9,927	\$212,010	\$125,943	\$89,059
<b>Canada Total</b>	1,421	10.5	1,215	61,672	6.2	52,259	2.6		2.1	11,702	11.5	9,927	\$211,995	\$125,928	\$89,046
<b>Proved Developed Producing Total</b>	1,421	10.5	1,215	61,672	6.2	52,259	2.6		2.1	11,702	11.5	9,927	\$211,995	\$125,928	\$89,046
<b>Proved Developed</b>															
<b>Canada</b>															
<b>Alberta</b>															
Mikwan													(15.3)	(14.2)	(13.2)
<b>Alberta Total</b>													(15.3)	(14.2)	(13.2)
<b>Ontario</b>															
Corey East	59.9		51.2							59.9		51.2	\$3,135	\$2,177	\$1,623
Goldsmith	236.8		196.0	151.9		123.2	1.8		1.4	263.9		218.0	\$12,366	\$8,617	\$6,511
Hillman	384.2		330.1	383.3		328.6				448.0		384.8	\$23,228	\$15,837	\$12,135
Minors	20.4	10.5	28.3	481.5		421.3				100.6	10.5	98.5	\$3,372	\$1,896	\$1,292
Off Shore Central				17,346		14,310				2,891		2,385	\$33,826	\$22,720	\$16,696
Off Shore East				34,824	6.2	29,921				5,804	1.0	4,987	\$91,719	\$44,237	\$27,647



Selection: Canada  
Effective: June 30, 2019

## Detailed Reserves and Present Value

Lagasco Inc.  
Deloitte June 30, 2019 Forecast Pricing

Page 2 of 3

Entity Description	Oil (Mbbbl)			Sales Gas (MMcf)			NGL (Mbbbl)			BOE (MBOE)			Present Values (M\$C)		
	WI	RI	Net	WI	RI	Net	WI	RI	Net	WI	RI	Net	0%	5%	10%
Off Shore West				2,892		2,522				482.0		420.3	\$6,130	\$2,103	\$1,018
Off Shore West Central				6,787		5,614				1,131		935.7	\$10,317	\$8,207	\$6,255
Petrolia East	158.8		138.5							158.8		138.5	\$10,433	\$5,861	\$3,973
Renwick	294.9		237.7	193.2		152.1	1.3		1.0	328.3		264.1	\$11,525	\$8,501	\$6,662
Rochester	107.3		93.9							107.3		93.9	\$2,985	\$2,787	\$2,524
Single Well Oil Battery	215.1		185.0	182.7		159.9				245.5		211.7	\$11,461	\$8,368	\$6,589
<b>Ontario Total</b>	1,477	10.5	1,261	63,241	6.2	53,552	3.1		2.4	12,020	11.5	10,188	\$220,496	\$131,311	\$92,925
<b>Canada Total</b>	1,477	10.5	1,261	63,241	6.2	53,552	3.1		2.4	12,020	11.5	10,188	\$220,481	\$131,296	\$92,912
<b>Proved Developed Total</b>	1,477	10.5	1,261	63,241	6.2	53,552	3.1		2.4	12,020	11.5	10,188	\$220,481	\$131,296	\$92,912

### Total Proved

#### Canada

#### Alberta

Mikwan													(15.3)	(14.2)	(13.2)
<b>Alberta Total</b>													(15.3)	(14.2)	(13.2)

#### Ontario

Corey East	59.9		51.2							59.9		51.2	\$3,135	\$2,177	\$1,623
Goldsmith	236.8		196.0	151.9		123.2	1.8		1.4	263.9		218.0	\$12,366	\$8,617	\$6,511
Hillman	384.2		330.1	383.3		328.6				448.0		384.8	\$23,228	\$15,837	\$12,135
Minors	20.4	10.5	28.3	481.5		421.3				100.6	10.5	98.5	\$3,372	\$1,896	\$1,292
Off Shore Central				20,394		16,825				3,399		2,804	\$42,558	\$28,649	\$20,768
Off Shore East				36,625	6.2	31,497				6,104	1.0	5,250	\$94,112	\$45,341	\$27,977
Off Shore West				4,506		3,875				751.0		645.9	\$8,893	\$3,387	\$1,540
Off Shore West Central				8,879		7,340				1,480		1,223	\$15,776	\$11,048	\$7,913
Petrolia East	408.8		356.6							408.8		356.6	\$28,031	\$15,150	\$9,826
Renwick	294.9		237.7	193.2		152.1	1.3		1.0	328.3		264.1	\$11,525	\$8,501	\$6,662
Rochester	107.3		93.9							107.3		93.9	\$2,985	\$2,787	\$2,524
Single Well Oil Battery	215.1		185.0	182.7		159.9				245.5		211.7	\$11,461	\$8,368	\$6,589
<b>Ontario Total</b>	1,727	10.5	1,479	71,797	6.2	60,723	3.1		2.4	13,696	11.5	11,602	\$257,441	\$151,758	\$105,360
<b>Canada Total</b>	1,727	10.5	1,479	71,797	6.2	60,723	3.1		2.4	13,696	11.5	11,602	\$257,426	\$151,744	\$105,347
<b>Total Proved Total</b>	1,727	10.5	1,479	71,797	6.2	60,723	3.1		2.4	13,696	11.5	11,602	\$257,426	\$151,744	\$105,347

### Total Proved Plus Probable

#### Canada

#### Alberta

Selection: Canada  
Effective: June 30, 2019

## Detailed Reserves and Present Value

Lagasco Inc.  
Deloitte June 30, 2019 Forecast Pricing

Page 3 of 3

Entity Description	Oil (Mbbbl)			Sales Gas (MMcf)			NGL (Mbbbl)			BOE (MBOE)			Present Values (M\$C)		
	WI	RI	Net	WI	RI	Net	WI	RI	Net	WI	RI	Net	0%	5%	10%
Mikwan													(15.5)	(14.0)	(12.7)
<b>Alberta Total</b>													(15.5)	(14.0)	(12.7)
<b>Ontario</b>															
Corey East	100.5		85.8							100.5		85.8	\$6,292	\$3,395	\$2,221
Goldsmith	320.1		264.3	212.9		172.3	2.5		2.0	358.1		295.0	\$18,365	\$11,214	\$7,909
Hillman	538.2		461.7	535.1		457.7				627.4		538.0	\$36,742	\$21,951	\$15,773
Minors	25.8	12.6	35.2	608.5		532.4				127.2	12.6	123.9	\$4,625	\$2,418	\$1,578
Off Shore Central				25,328		20,896				4,221		3,483	\$53,658	\$35,994	\$25,443
Off Shore East				43,738	7.2	37,604				7,290	1.2	6,267	\$122,623	\$56,045	\$33,207
Off Shore West				5,805		4,975				967.6		829.2	\$12,994	\$5,198	\$2,559
Off Shore West Central				17,144		14,172				2,857		2,362	\$40,611	\$22,056	\$14,231
Petrolia East	505.4		440.9							505.4		440.9	\$37,854	\$18,624	\$11,633
Renwick	393.8		318.2	253.1		199.9	1.7		1.3	437.6		352.9	\$17,554	\$11,190	\$8,153
Rochester	167.5		146.5							167.5		146.5	\$6,592	\$5,063	\$4,061
Single Well Oil Battery	292.0		251.4	235.3		205.9				331.2		285.8	\$17,993	\$11,472	\$8,375
<b>Ontario Total</b>	2,343	12.6	2,004	93,861	7.2	79,215	4.2		3.3	17,991	13.8	15,210	\$375,904	\$204,619	\$135,143
<b>Canada Total</b>	2,343	12.6	2,004	93,861	7.2	79,215	4.2		3.3	17,991	13.8	15,210	\$375,888	\$204,605	\$135,130
<b>Total Proved Plus Probable Total</b>	2,343	12.6	2,004	93,861	7.2	79,215	4.2		3.3	17,991	13.8	15,210	\$375,888	\$204,605	\$135,130

**Lagasco Inc.**  
**Economics Detail - Before Tax**  
**Results as of July 1, 2019**  
**Proved Developed Producing**  
**Lagasco Inc.**

Year	WI Share Oil				WI Share Sales Gas				WI Share Condensate				WI Share Liquids				WI Other		WI Sales Revenue MSC
	WI Wells	Cal Day Rate bbl/d	Volume Mbbl	Avg. Price \$/bbl	Sales Revenue MSC	Cal Day Rate Mcf/d	Volume MMcf	Avg. Price \$/Mcf	Sales Revenue MSC	Cal Day Rate bbl/d	Volume Mbbl	Avg. Price \$/bbl	Sales Revenue MSC	Cal Day Rate bbl/d	Volume Mbbl	Avg. Price \$/bbl	Sales Revenue MSC	Sales Revenue MSC	
2019 (6)		397.42	399.3	73.5	70.31	5,166.6	9,654.7	1,778.5	3.74	6,638.8	-	-	-	0.7	0.1	33.32	4.5	-	11,809.9
2020		396.42	370.9	135.8	75.77	10,285.9	9,230.8	3,378.5	4.14	13,993.8	-	-	-	0.7	0.2	40.13	10.0	-	24,289.7
2021		387.53	335.3	122.4	80.33	9,831.0	8,711.9	3,179.8	4.78	15,194.6	-	-	-	0.6	0.2	47.70	10.7	-	25,036.3
2022		375.54	304.0	111.0	85.27	9,461.7	8,233.1	3,005.1	4.98	14,955.1	-	-	-	0.6	0.2	53.85	11.0	-	24,427.8
2023		367.55	272.4	99.4	92.61	9,207.8	7,787.6	2,842.5	5.29	15,048.8	-	-	-	0.5	0.2	59.82	11.2	-	24,267.8
2024		360.55	247.9	90.7	94.51	8,577.1	7,372.2	2,698.2	5.74	15,480.7	-	-	-	0.5	0.2	61.29	10.5	-	24,068.3
2025		353.56	224.1	81.8	96.41	7,887.4	6,982.6	2,548.6	5.89	15,006.1	-	-	-	0.4	0.2	62.75	9.9	-	22,903.4
2026		344.84	201.9	73.7	98.30	7,243.6	6,810.0	2,412.7	6.05	14,584.9	-	-	-	0.4	0.1	64.26	9.3	-	21,837.8
2027		330.84	182.4	66.6	100.26	6,675.8	6,261.0	2,285.3	6.20	14,179.9	-	-	-	0.4	0.1	65.81	8.7	-	20,864.4
2028		319.05	162.8	59.6	102.26	6,093.3	5,834.6	2,172.1	6.36	13,822.7	-	-	-	0.3	0.1	67.38	7.9	-	19,923.9
2029		310.05	148.1	54.1	104.34	5,641.2	5,629.2	2,054.7	6.06	12,441.0	-	-	-	0.3	0.1	68.97	7.3	-	18,089.6
2030		302.05	132.9	48.5	106.40	5,160.4	5,331.1	1,945.8	5.78	11,247.1	-	-	-	0.3	0.1	70.63	6.9	-	16,414.4
2031		287.26	121.2	44.2	108.55	4,801.5	5,059.1	1,846.6	5.89	10,868.4	-	-	-	0.2	0.1	72.30	6.5	-	15,676.3
2032		274.57	107.5	39.3	110.66	4,351.9	4,805.5	1,758.8	6.04	10,629.8	-	-	-	0.2	0.1	73.96	5.7	-	14,987.5
2033		261.68	96.0	35.0	112.83	3,954.7	4,566.2	1,666.7	6.15	10,248.6	-	-	-	0.2	0.1	75.72	5.3	-	14,208.6
Rem.		252.88	21.7	284.9	134.32	38,272.1	1,984.9	26,100.0	8.07	210,584.7	-	-	-	0.0	0.5	89.23	42.8	-	248,899.7
50.50 yr			1,420.5	100.39	142,612.0		61,671.7	6.57	404,925.0		-	-	-	2.6	63.62	168.3	-	-	547,705.3

Year	Crown Royalties			Freehold Royalties			Mineral Tax MSC	Indian Royalties			Overriding Royalties				Other Total Roy. & Burdens MSC	Total Roy. & Burden MSC	Total Roy. & Burden %
	Unadj. Royalty MSC	Royalty Deduction MSC	Royalty Payable MSC	Unadj. Royalty MSC	Royalty Deduction MSC	Royalty Payable MSC		Unadj. Royalty MSC	Royalty Deduction MSC	Royalty Payable MSC	Unadj. Royalty MSC	Royalty Deduction MSC	Royalty Payable MSC	Royalty NPI Payable MSC			
2019 (6)	8.5	-	8.5	1,471.0	-	1,471.0	-	-	-	-	317.1	-	317.1	18.0	-	1,814.6	15.4
2020	18.1	-	18.1	3,024.1	-	3,024.1	-	-	-	-	659.5	-	659.5	22.8	-	3,724.6	15.3
2021	18.1	-	18.1	3,117.2	-	3,117.2	-	-	-	-	701.9	-	701.9	42.0	-	3,879.2	15.5
2022	18.0	-	18.0	3,040.9	-	3,040.9	-	-	-	-	685.7	-	685.7	31.1	-	3,775.7	15.5
2023	11.1	-	11.1	3,028.0	-	3,028.0	-	-	-	-	682.1	-	682.1	42.9	-	3,764.0	15.5
2024	9.7	-	9.7	3,004.1	-	3,004.1	-	-	-	-	679.8	-	679.8	30.4	-	3,724.0	15.5
2025	9.3	-	9.3	2,858.6	-	2,858.6	-	-	-	-	649.8	-	649.8	43.8	-	3,561.5	15.6
2026	9.0	-	9.0	2,725.5	-	2,725.5	-	-	-	-	619.7	-	619.7	29.9	-	3,384.0	15.5
2027	8.6	-	8.6	2,603.7	-	2,603.7	-	-	-	-	595.4	-	595.4	41.1	-	3,248.8	15.6
2028	8.3	-	8.3	2,485.7	-	2,485.7	-	-	-	-	569.6	-	569.6	22.9	-	3,086.5	15.5
2029	8.0	-	8.0	2,256.6	-	2,256.6	-	-	-	-	499.2	-	499.2	39.0	-	2,802.8	15.5
2030	7.7	-	7.7	2,047.3	-	2,047.3	-	-	-	-	436.6	-	436.6	25.5	-	2,517.1	15.3
2031	4.7	-	4.7	1,957.8	-	1,957.8	-	-	-	-	417.3	-	417.3	36.9	-	2,416.7	15.4
2032	1.1	-	1.1	1,875.1	-	1,875.1	-	-	-	-	396.9	-	396.9	27.2	-	2,300.4	15.3
2033	-	-	-	1,778.8	-	1,778.8	-	-	-	-	374.3	-	374.3	34.8	-	2,187.8	15.4
Rem.	-	-	-	31,134.2	-	31,134.2	-	-	-	-	5,765.2	-	5,765.2	556.9	-	37,456.4	15.0
50.50 yr	140.3	-	140.3	68,408.7	-	68,408.7	-	-	-	-	14,050.0	-	14,050.0	1,045.2	-	83,644.2	15.3

Year	Capital Costs										Before Tax Cash Flow							NPV @ 10.00 %
	WI Sales Revenue MSC	Royalty Revenue MSC	Co. Share Revenue MSC	Total Roy. & Burden MSC	Net Revenue MSC	Operating Costs MSC	Abandon. & Salvage MSC	Other Revenue MSC	Sask Cap Surch MSC	Net Op. Income MSC	COGPE MSC	CEE MSC	CDE MSC	CCA MSC	Total MSC	BTCF MSC	Cum. MSC	
2019 (6)	11,809.9	14.5	11,824.4	1,814.6	10,009.8	4,167.8	-	-	-	5,842.0	-	-	-	-	-	5,842.0	5,842.0	5,706.6
2020	24,289.7	30.5	24,320.2	3,724.6	20,595.7	8,048.6	2,587.6	-	-	9,959.4	-	-	-	-	-	9,959.4	15,801.4	8,958.3
2021	25,036.3	31.4	25,067.7	3,879.2	21,188.5	7,656.7	15.3	-	-	13,516.5	-	-	-	-	-	13,516.5	29,318.0	11,180.6
2022	24,427.8	32.4	24,460.3	3,775.7	20,684.5	7,469.3	2,349.9	-	-	10,865.3	-	-	-	-	-	10,865.3	40,183.3	8,093.7
2023	24,267.8	34.3	24,302.1	3,764.0	20,538.0	7,065.2	-	-	-	13,472.8	-	-	-	-	-	13,472.8	53,656.1	9,210.6
2024	24,068.3	34.3	24,102.5	3,724.0	20,378.5	6,957.8	2,601.8	-	-	10,818.9	-	-	-	-	-	10,818.9	64,475.0	6,653.9
2025	22,903.4	34.0	22,937.4	3,561.5	19,375.9	6,739.1	-	-	-	12,636.8	-	-	-	-	-	12,636.8	77,111.8	7,139.2
2026	21,837.8	33.8	21,871.6	3,384.0	18,487.5	6,575.4	2,904.4	-	-	9,007.8	-	-	-	-	-	9,007.8	86,119.6	4,561.6
2027	20,864.4	33.6	20,898.1	3,248.8	17,649.3	6,312.8	-	-	-	11,336.6	-	-	-	-	-	11,336.6	97,456.1	5,293.3
2028	19,923.9	33.6	19,957.5	3,086.5	16,871.0	6,137.9	3,026.7	-	-	7,706.4	-	-	-	-	-	7,706.4	105,162.5	3,215.6
2029	18,089.6	33.3	18,122.9	2,802.8	15,320.1	5,914.7	-	-	-	9,405.4	-	-	-	-	-	9,405.4	114,568.0	3,629.3
2030	16,414.4	33.2	16,447.6	2,517.1	13,930.5	5,742.2	2,296.8	-	-	5,891.5	-	-	-	-	-	5,891.5	120,459.5	2,031.4
2031	15,676.3	32.2	15,708.6	2,416.7	13,291.8	5,573.3	-	-	-	7,718.5	-	-	-	-	-	7,718.5	128,178.0	2,461.4
2032	14,987.5	28.0	15,015.5	2,300.4	12,715.1	5,339.0	3,508.3	-	-	3,867.8	-	-	-	-	-	3,867.8	132,045.8	1,077.2
2033	14,208.6	27.9	14,236.5	2,187.8	12,048.7	5,217.0	-	-	-	6,831.7	-	-	-	-	-	6,831.7	138,877.4	1,800.6
Rem.	248,899.7	961.9	249,861.5	37,456.4	212,405.1	106,802.8	32,484.8	-	-	73,117.5	-	-	-	-	-	73,117.5	211,994.9	8,032.1
50.50 yr	547,705.3	1,428.9	549,134.3	83,644.2	465,490.1	201,719.6	51,775.6	-	-	211,994.9	-	-	-	-	-	211,994.9	211,994.9	89,045.5

Country/Province Canada  
Mineral Owner N/A  
Prod. Category N/A  
Incentive N/A  
Econ. Calc. Date Jan 2018  
Avg. WI Share 96.46 %  
Econ. Life/To Aban. 50.50 yr / 50.50 yr  
Econ. RLI 15.74 yr  
Price Deck Deloitte June 30, 2019  
Forecast Pricing  
Price Set N/A  
Economic Limit N/A  
COS / COO 100.0 % / 100.0 %  
Oil Reserves Type Light and Medium Oil  
Gas Reserves Type Gas

Product	Remaining Reserves				Net Revenue NPV (MSC)						
	Gross	WI	RI	Co. Share	Net	0.00 %	5.00 %	8.00 %	10.00 %	15.00 %	20.00 %
Oil (Mbbbl)	1,558.7	1,420.5	10.5	1,431.0	1,214.6	122,282.1	78,672.5	64,724.1	57,918.9	45,996.7	38,304.6
Sales Gas (MMcf)	63,422.5	61,671.7	6.2	61,677.9	52,259.1	343,072.5	168,781.7	127,010.5	108,920.5	80,456.1	64,005.8
Condensate (Mbbbl)	-	-	-	-	-	-	-	-	-	-	-
Liquids (Mbbbl)	2.7	2.6	-	2.6	2.1	135.5	87.7	71.7	63.7	49.8	40.8
Other Equiv. (MBOE)	-	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-	-
Total (MBOE)	12,131.8	11,701.8	11.5	11,713.3	9,926.6	465,490.1	247,541.9	191,806.2	166,903.2	126,502.6	102,351.2
Total BTCF						211,994.9	125,928.4	100,855.4	89,045.5	68,952.9	56,341.8

**Lagasco Inc.**  
**Economics Detail - Before Tax**  
**Results as of July 1, 2019**  
**Proved Developed**  
**Lagasco Inc.**

Year	WI Share Oil				WI Share Sales Gas				WI Share Condensate				WI Share Liquids				WI Other	
	WI Wells	Cal Day Rate bbl/d	Volume Mmbbl	Avg. Price \$/bbl	Sales Revenue MSC	Cal Day Rate Mcf/d	Volume MMcf	Avg. Price \$/Mcf	Sales Revenue MSC	Cal Day Rate bbl/d	Volume Mmbbl	Avg. Price \$/bbl	Sales Revenue MSC	Cal Day Rate bbl/d	Volume Mmbbl	Avg. Price \$/bbl	Sales Revenue MSC	WI Sales Revenue MSC
2019 (6)		398.42	404.0	74.3	70.32	5,227.0	9,656.9	1,776.9	3.74	6,640.2	-	-	-	0.8	0.1	33.29	4.6	- 11,871.9
2020		398.42	387.5	141.8	75.81	10,751.8	9,491.5	3,473.9	4.14	14,373.2	-	-	-	0.8	0.3	40.02	11.1	- 25,136.1
2021		390.53	348.6	127.2	80.37	10,225.7	9,284.0	3,388.7	4.75	16,090.7	-	-	-	0.7	0.3	47.63	11.9	- 26,328.3
2022		378.54	315.4	115.1	85.31	9,820.0	8,640.8	3,153.9	4.95	15,616.9	-	-	-	0.6	0.2	53.81	12.3	- 25,449.1
2023		370.55	282.5	103.1	92.65	9,552.5	8,104.8	2,958.3	5.27	15,594.1	-	-	-	0.6	0.2	59.81	12.5	- 25,159.1
2024		363.55	257.0	94.1	94.55	8,895.2	7,632.0	2,793.3	5.71	15,963.3	-	-	-	0.5	0.2	61.28	11.8	- 24,870.3
2025		356.56	232.4	84.8	96.45	8,182.3	7,202.7	2,629.0	5.87	15,422.2	-	-	-	0.5	0.2	62.75	11.1	- 23,615.5
2026		347.84	208.8	76.2	98.34	7,495.8	6,801.0	2,482.4	6.02	14,953.2	-	-	-	0.4	0.2	64.27	10.4	- 22,459.4
2027		332.84	188.5	68.8	100.30	6,902.4	6,429.8	2,346.9	6.18	14,511.8	-	-	-	0.4	0.1	65.82	9.8	- 21,423.9
2028		321.05	168.5	61.7	102.30	6,308.7	6,085.7	2,227.4	6.34	14,126.4	-	-	-	0.4	0.1	67.40	8.9	- 20,444.1
2029		312.05	153.4	56.0	104.39	5,845.5	5,766.0	2,104.6	6.04	12,720.4	-	-	-	0.3	0.1	69.01	8.3	- 18,574.3
2030		304.05	137.8	50.3	106.46	5,355.0	5,456.0	1,991.4	5.78	11,507.1	-	-	-	0.3	0.1	70.68	7.8	- 16,870.0
2031		289.26	125.8	45.9	108.61	4,987.1	5,174.1	1,888.5	5.88	11,112.1	-	-	-	0.3	0.1	72.35	7.4	- 16,106.6
2032		276.57	111.8	40.9	110.72	4,529.4	4,912.0	1,797.8	6.04	10,862.2	-	-	-	0.2	0.1	74.03	6.6	- 15,398.2
2033		263.68	100.1	36.5	112.90	4,123.4	4,665.3	1,702.8	6.15	10,468.1	-	-	-	0.2	0.1	75.79	6.2	- 14,597.7
Rem.		254.88	22.8	300.3	134.53	40,404.5	2,017.3	26,525.2	8.06	213,695.8	-	-	-	0.0	0.6	91.29	57.5	- 254,157.8
50.50 yr			1,477.2	100.60	148,606.2		63,240.8	6.54	413,657.6		-	-	-	3.1	64.99	198.4	-	562,462.3

Year	Crown Royalties			Freehold Royalties			Mineral Tax MSC	Indian Royalties			Overriding Royalties				Other Total Roy. & Burdens MSC	Total Roy. & Burden MSC	Total Roy. & Burden %
	Unadj. Royalty MSC	Royalty Deduction MSC	Royalty Payable MSC	Unadj. Royalty MSC	Royalty Deduction MSC	Royalty Payable MSC		Unadj. Royalty MSC	Royalty Deduction MSC	Royalty Payable MSC	Unadj. Royalty MSC	Royalty Deduction MSC	Royalty Payable MSC	NPI Payable MSC			
2019 (6)	12.4	-	12.4	1,474.8	-	1,474.8	-	-	-	-	320.2	-	320.2	18.0	-	1,825.4	15.4
2020	49.8	-	49.8	3,098.3	-	3,098.3	-	-	-	-	697.1	-	697.1	22.8	-	3,868.0	15.4
2021	38.6	-	38.6	3,258.2	-	3,258.2	-	-	-	-	765.1	-	765.1	42.0	-	4,103.9	15.6
2022	34.6	-	34.6	3,152.0	-	3,152.0	-	-	-	-	736.9	-	736.9	31.1	-	3,954.7	15.5
2023	25.9	-	25.9	3,124.6	-	3,124.6	-	-	-	-	727.8	-	727.8	42.9	-	3,921.1	15.6
2024	22.8	-	22.8	3,091.3	-	3,091.3	-	-	-	-	721.5	-	721.5	30.4	-	3,866.0	15.5
2025	21.1	-	21.1	2,935.8	-	2,935.8	-	-	-	-	687.2	-	687.2	43.8	-	3,688.0	15.6
2026	19.8	-	19.8	2,792.3	-	2,792.3	-	-	-	-	653.9	-	653.9	29.9	-	3,496.0	15.6
2027	18.8	-	18.8	2,663.5	-	2,663.5	-	-	-	-	627.0	-	627.0	41.1	-	3,350.3	15.6
2028	17.9	-	17.9	2,541.2	-	2,541.2	-	-	-	-	599.1	-	599.1	22.9	-	3,181.1	15.6
2029	17.1	-	17.1	2,308.1	-	2,308.1	-	-	-	-	526.8	-	526.8	39.0	-	2,890.9	15.6
2030	16.4	-	16.4	2,095.5	-	2,095.5	-	-	-	-	462.6	-	462.6	25.5	-	2,599.9	15.4
2031	13.0	-	13.0	2,003.3	-	2,003.3	-	-	-	-	441.7	-	441.7	36.9	-	2,495.0	15.5
2032	9.2	-	9.2	1,918.5	-	1,918.5	-	-	-	-	420.2	-	420.2	27.2	-	2,375.1	15.4
2033	7.7	-	7.7	1,819.7	-	1,819.7	-	-	-	-	396.3	-	396.3	34.8	-	2,258.5	15.5
Rem.	38.2	-	38.2	31,753.3	-	31,753.3	-	-	-	-	6,109.6	-	6,109.6	556.9	-	38,458.0	15.1
50.50 yr	363.2	-	363.2	70,030.4	-	70,030.4	-	-	-	-	14,893.0	-	14,893.0	1,045.2	-	86,331.9	15.3

Year	Capital Costs										Before Tax Cash Flow				NPV @ 10.00 % MSC			
	WI Sales Revenue MSC	Royalty Revenue MSC	Co. Share Revenue MSC	Total Roy. & Burden MSC	Net Revenue MSC	Operating Costs MSC	Abandon. & Salvage MSC	Other Revenue MSC	Sack Cap Surch MSC	Net Op. Income MSC	COGPE MSC	CEE MSC	CDE MSC	CCA MSC		Total MSC	BTCF MSC	Cum. MSC
2019 (6)	11,871.9	14.5	11,886.4	1,825.4	10,061.0	4,175.4	-	-	-	5,885.5	-	-	10.0	-	10.0	5,875.5	5,875.5	5,738.6
2020	25,136.1	30.5	25,166.6	3,868.0	21,298.6	8,172.1	2,587.6	-	-	10,538.8	-	-	252.9	-	252.9	10,285.9	16,161.5	9,251.6
2021	26,328.3	31.4	26,359.7	4,103.9	22,255.8	7,849.6	15.3	-	-	14,390.9	-	-	-	-	-	14,390.9	30,552.4	11,905.4
2022	25,449.1	32.4	25,481.6	3,954.7	21,526.9	7,628.3	2,349.9	-	-	11,548.8	-	-	-	-	-	11,548.8	42,101.1	8,688.2
2023	25,159.1	34.3	25,193.3	3,921.1	21,272.3	7,205.5	-	-	-	14,066.8	-	-	-	-	-	14,066.8	56,167.9	9,617.0
2024	24,870.3	34.3	24,904.6	3,866.0	21,038.6	7,086.4	2,601.8	-	-	11,350.4	-	-	-	-	-	11,350.4	67,518.3	6,984.5
2025	23,615.5	34.0	23,649.5	3,688.0	19,961.5	6,859.3	-	-	-	13,102.2	-	-	-	-	-	13,102.2	80,620.5	7,402.3
2026	22,459.4	33.8	22,493.2	3,496.0	18,997.3	6,678.7	2,904.4	-	-	9,414.3	-	-	-	-	-	9,414.3	90,034.8	4,770.5
2027	21,423.9	33.6	21,457.6	3,350.3	18,107.3	6,406.2	-	-	-	11,701.1	-	-	-	-	-	11,701.1	101,735.8	5,463.5
2028	20,444.1	33.6	20,477.6	3,181.1	17,296.6	6,228.2	3,026.7	-	-	8,041.7	-	-	-	-	-	8,041.7	109,777.6	3,358.0
2029	18,574.3	33.3	18,607.6	2,890.9	15,716.7	6,002.3	-	-	-	9,714.4	-	-	-	-	-	9,714.4	119,492.0	3,748.5
2030	16,870.0	33.2	16,903.2	2,599.9	14,303.2	5,827.7	2,296.8	-	-	6,178.7	-	-	-	-	-	6,178.7	125,670.7	2,132.2
2031	16,106.6	32.2	16,138.8	2,495.0	13,643.8	5,657.2	-	-	-	7,986.6	-	-	-	-	-	7,986.6	133,657.3	2,546.9
2032	15,398.2	28.0	15,426.2	2,375.1	13,051.1	5,421.8	3,508.3	-	-	4,121.1	-	-	-	-	-	4,121.1	137,778.4	1,150.7
2033	14,597.7	27.9	14,625.6	2,258.5	12,367.1	5,298.6	-	-	-	7,068.5	-	-	-	-	-	7,068.5	144,846.8	1,863.0
Rem.	254,157.8	961.9	255,119.7	38,458.0	216,661.7	108,542.8	32,484.8	-	-	75,634.1	-	-	-	-	-	75,634.1	220,480.9	8,371.4
50.50 yr	562,462.3	1,428.9	563,891.2	86,331.9	477,559.3	205,040.0	51,775.6	-	-	220,743.8	-	-	262.9	-	262.9	220,480.9	220,480.9	92,912.3

Country/Province Canada  
Mineral Owner N/A  
Prod. Category N/A  
Incentive N/A  
Econ. Calc. Date Jan 2018  
Avg. WI Share 96.55 %  
Econ. Life/To Aban. 50.50 yr / 50.50 yr  
Econ. RLI 16.16 yr  
Price Deck Deloitte June 30, 2019  
Forecast Pricing  
Price Set N/A  
Economic Limit N/A  
COS / COO 100.0 % / 100.0 %  
Oil Reserves Type Light and Medium Oil  
Gas Reserves Type Gas

Product	Remaining Reserves				Net Revenue NPV (MSC)							
	Gross	WI	RI	Co. Share	Net	0.00 %	5.00 %	8.00 %	15.00 %	20.00 %		
Oil (Mmbbl)	1,615.4	1,477.2	10.5	1,487.7	1,260.7	127,133.6	81,624.6	67,102.6	60,026.3	47,643.4	39,662.6	
Sales Gas (MMcf)	64,991.6	63,240.8	6.2	63,247.0	53,551.8	350,266.9	173,122.0	130,492.9	111,997.3	82,841.1	65,953.3	
Condensate (Mmbbl)	-	-	-	-	-	-	-	-	-	-	-	
Liquids (Mmbbl)	3.1	3.1	-	3.1	2.4	158.8	99.8	80.8	71.5	55.5	45.2	
Other Equiv. (MBOE)	-	-	-	-	-	-	-	-	-	-	-	
Other	-	-	-	-	-	-	-	-	-	-	-	
Total (MBOE)	12,450.4	12,020.4	11.5	12,031.9	10,188.5	477,559.3	254,846.4	197,676.3	172,095.2	130,540.0	105,661.2	
Total BTCF						220,480.9	131,296.4	105,213.9	92,912.3	71,960.4	58,795.6	

**Lagasco Inc.**  
**Economics Detail - Before Tax**  
**Results as of July 1, 2019**  
**Total Proved**  
**Lagasco Inc.**

Year	WI Share Oil					WI Share Sales Gas				WI Share Condensate				WI Share Liquids				WI Other	
	WI Wells	Cal Day Rate bbl/d	Volume Mbbl	Avg. Price \$/c/bbl	Sales Revenue MSC	Cal Day Rate Mcf/d	Volume MMcf	Avg. Price \$/C/Mcf	Sales Revenue MSC	Cal Day Rate bbl/d	Volume Mbbl	Avg. Price \$/c/bbl	Sales Revenue MSC	Cal Day Rate bbl/d	Volume Mbbl	Avg. Price \$/c/bbl	Sales Revenue MSC	Sales Revenue MSC	WI Sales Revenue MSC
2019 (6)	398.42	404.0	74.3	70.32	5,227.0	9,656.9	1,776.9	3.74	6,640.2	-	-	-	-	0.8	0.1	33.29	4.6	-	11,871.9
2020	398.42	401.4	146.9	75.52	11,095.8	9,491.5	3,473.9	4.14	14,373.2	-	-	-	-	0.8	0.3	40.073.2	11.1	-	25,480.1
2021	391.53	395.8	144.5	79.37	11,466.6	10,092.7	3,683.8	4.73	17,429.0	-	-	-	-	0.7	0.3	47.63	11.9	-	28,907.6
2022	392.55	374.5	136.7	83.99	11,479.0	11,641.4	4,249.1	4.99	21,205.5	-	-	-	-	0.6	0.2	53.81	12.3	-	32,696.8
2023	386.55	329.9	120.4	91.45	11,010.0	11,354.7	4,144.5	5.36	22,206.5	-	-	-	-	0.6	0.2	59.81	12.5	-	33,229.0
2024	379.55	297.3	108.8	93.43	10,164.4	10,208.9	3,736.5	5.80	21,679.9	-	-	-	-	0.5	0.2	61.28	11.8	-	31,856.1
2025	372.56	267.7	97.7	95.36	9,317.9	9,293.3	3,392.0	5.95	20,168.6	-	-	-	-	0.5	0.2	62.75	11.1	-	29,497.6
2026	363.84	240.5	87.8	97.26	8,536.7	8,519.5	3,109.6	6.09	18,952.7	-	-	-	-	0.4	0.2	64.27	10.4	-	27,499.9
2027	348.84	217.4	79.3	99.21	7,871.6	7,855.2	2,867.1	6.25	17,907.4	-	-	-	-	0.4	0.1	65.82	9.8	-	25,788.8
2028	337.05	195.1	71.4	101.19	7,224.3	7,276.6	2,663.2	6.40	17,032.4	-	-	-	-	0.4	0.1	67.40	8.9	-	24,265.6
2029	328.05	178.1	65.0	103.26	6,713.5	6,767.9	2,470.3	6.06	14,975.2	-	-	-	-	0.3	0.1	69.01	8.3	-	21,697.0
2030	320.05	160.9	58.7	105.30	6,184.1	6,304.9	2,301.3	5.78	13,290.4	-	-	-	-	0.3	0.1	70.68	7.8	-	19,482.3
2031	304.26	147.4	53.8	107.43	5,780.3	5,888.7	2,149.4	5.88	12,641.0	-	-	-	-	0.3	0.1	72.35	7.4	-	18,428.6
2032	291.57	132.0	48.3	109.50	5,289.9	5,522.3	2,021.2	6.04	12,206.9	-	-	-	-	0.2	0.1	74.03	6.6	-	17,503.4
2033	277.68	119.0	43.4	111.65	4,848.7	5,188.8	1,893.9	6.15	11,638.6	-	-	-	-	0.2	0.1	75.79	6.2	-	16,493.5
Rem.	268.88	29.7	390.1	135.03	52,674.8	2,119.1	27,863.8	8.01	223,292.2	-	-	-	-	0.0	0.6	91.29	57.5	-	276,024.6
50.50 yr			1,727.2		174,884.6		71,796.5	6.49	465,639.9		-	-	-		3.1	64.99	198.4	-	640,722.9

Year	Crown Royalties				Freehold Royalties				Indian Royalties				Overriding Royalties				Other Total Roy. & Total Roy. & Burdens		Total Roy. & Burden %
	Unadj. Royalty M\$C	Royalty Deduction M\$C	Royalty Payable M\$C	Unadj. Royalty M\$C	Royalty Deduction M\$C	Royalty Payable M\$C	Mineral Tax M\$C	Unadj. Royalty M\$C	Royalty Deduction M\$C	Royalty Payable M\$C	Unadj. Royalty M\$C	Royalty Deduction M\$C	Royalty Payable M\$C	Royalty NPI Payable M\$C	Royalty M\$C	Burdens M\$C	Burden M\$C	Burden %	
2019 (6)	12.4	-	12.4	1,474.8	-	1,474.8	-	-	-	-	-	-	320.2	-	320.2	18.0	-	1,825.4	15.4
2020	49.8	-	49.8	3,141.3	-	3,141.3	-	-	-	-	-	-	698.0	-	698.0	22.8	-	3,911.9	15.4
2021	38.6	-	38.6	3,580.6	-	3,580.6	-	-	-	-	-	-	822.6	-	822.6	42.0	-	4,403.8	15.5
2022	34.6	-	34.6	4,058.0	-	4,058.0	-	-	-	-	-	-	963.8	-	963.8	31.1	-	5,087.5	15.6
2023	25.9	-	25.9	4,133.3	-	4,133.3	-	-	-	-	-	-	979.4	-	979.4	42.9	-	5,181.5	15.6
2024	22.8	-	22.8	3,964.5	-	3,964.5	-	-	-	-	-	-	939.5	-	939.5	30.4	-	4,957.2	15.6
2025	21.1	-	21.1	3,671.1	-	3,671.1	-	-	-	-	-	-	868.3	-	868.3	43.8	-	4,604.3	15.6
2026	19.8	-	19.8	3,422.4	-	3,422.4	-	-	-	-	-	-	806.9	-	806.9	29.9	-	4,279.0	15.6
2027	18.8	-	18.8	3,209.1	-	3,209.1	-	-	-	-	-	-	757.4	-	757.4	41.1	-	4,026.3	15.6
2028	17.9	-	17.9	3,018.9	-	3,018.9	-	-	-	-	-	-	711.2	-	711.2	22.9	-	3,770.8	15.5
2029	17.1	-	17.1	2,698.4	-	2,698.4	-	-	-	-	-	-	611.6	-	611.6	39.0	-	3,366.1	15.5
2030	16.4	-	16.4	2,422.1	-	2,422.1	-	-	-	-	-	-	528.1	-	528.1	25.5	-	2,992.1	15.4
2031	13.0	-	13.0	2,293.5	-	2,293.5	-	-	-	-	-	-	498.2	-	498.2	36.9	-	2,841.7	15.4
2032	9.2	-	9.2	2,181.6	-	2,181.6	-	-	-	-	-	-	470.3	-	470.3	27.2	-	2,688.3	15.4
2033	7.7	-	7.7	2,056.7	-	2,056.7	-	-	-	-	-	-	440.3	-	440.3	34.8	-	2,539.4	15.4
Rem.	38.2	-	38.2	34,486.6	-	34,486.6	-	-	-	-	-	-	6,529.1	-	6,529.1	556.9	-	41,610.9	15.1
50.50 yr	363.2	-	363.2	79,812.9	-	79,812.9	-	-	-	-	-	-	16,944.8	-	16,944.8	1,045.2	-	98,166.2	15.3

Year	Capital Costs										Before Tax Cash Flow			NPV @ 10.00 % MSC				
	WI Sales Revenue MSC	Royalty Revenue MSC	Co. Share Revenue MSC	Total Roy. & Burden MSC	Net Revenue MSC	Operating Costs MSC	Abandon. & Salvage MSC	Other Revenue MSC	Sask Cap Surch MSC	Net Op. Income MSC	COGPE MSC	CEE MSC	CDE MSC		CCA MSC	Total MSC	BTCF MSC	Cum. MSC
2019 (6)	11,871.9	14.5	11,886.4	1,825.4	10,061.0	4,175.4	-	-	-	5,885.5	-	-	10.0	-	10.0	5,875.5	5,875.5	5,738.6
2020	25,480.1	30.5	25,510.6	3,911.9	21,598.7	8,196.8	2,587.6	-	-	10,814.3	-	-	909.4	-	909.4	9,904.9	15,780.5	8,899.9
2021	28,907.6	31.4	28,939.0	4,483.8	24,455.2	8,134.8	15.3	-	-	16,305.1	-	-	5,505.4	876.1	6,381.4	9,923.7	25,704.2	8,183.9
2022	32,696.8	32.4	32,729.3	5,087.5	27,641.8	8,516.9	2,349.9	-	-	16,775.1	-	-	5,861.4	1,257.3	7,118.7	9,656.4	35,360.6	7,091.1
2023	33,229.0	34.3	33,263.3	5,181.5	28,081.8	8,194.4	-	-	-	19,887.3	-	-	-	-	-	19,887.3	55,247.9	13,600.8
2024	31,856.1	34.3	31,890.4	4,957.2	26,933.2	7,931.5	2,601.8	-	-	16,399.9	-	-	-	-	-	16,399.9	71,647.9	10,126.0
2025	29,497.6	34.0	29,531.6	4,604.3	24,927.3	7,599.3	-	-	-	17,328.0	-	-	-	-	-	17,328.0	88,975.8	9,791.8
2026	27,499.9	33.8	27,533.7	4,279.0	23,254.7	7,340.1	2,904.4	-	-	13,010.2	-	-	-	-	-	13,010.2	101,986.0	6,618.8
2027	25,788.8	33.6	25,822.4	4,026.3	21,796.1	7,006.0	-	-	-	14,790.1	-	-	-	-	-	14,790.1	116,776.1	6,906.8
2028	24,265.6	33.6	24,299.1	3,770.8	20,528.3	6,779.7	3,026.7	-	-	10,722.0	-	-	-	-	-	10,722.0	127,498.1	4,496.5
2029	21,697.0	33.3	21,730.4	3,366.1	18,364.3	6,513.4	-	-	-	11,850.8	-	-	-	-	-	11,850.8	139,348.9	4,573.4
2030	19,482.3	33.2	19,515.5	2,992.1	16,523.5	6,307.2	2,365.1	-	-	7,851.2	-	-	-	-	-	7,851.2	147,200.1	2,720.2
2031	18,428.6	32.2	18,460.9	2,841.7	15,619.2	6,091.9	-	-	-	9,527.2	-	-	-	-	-	9,527.2	156,727.3	3,038.4
2032	17,503.4	28.0	17,531.4	2,688.3	14,843.1	5,828.3	3,578.7	-	-	5,436.1	-	-	-	-	-	5,436.1	162,163.4	1,532.2
2033	16,493.5	27.9	16,521.4	2,539.4	13,982.0	5,676.6	-	-	-	8,305.3	-	-	-	-	-	8,305.3	170,468.7	2,189.1
Rem.	276,024.6	961.9	276,986.5	41,610.9	235,375.5	114,500.8	33,917.4	-	-	86,957.3	-	-	-	-	-	86,957.3	257,426.1	9,839.5
50.50 yr	640,722.9	1,428.9	642,151.8	98,166.2	543,985.6	218,793.2	53,346.8	-	-	271,845.5	-	-	12,286.1	2,133.3	14,419.4	257,426.1	257,426.1	105,346.9

Country/Province Canada  
Mineral Owner N/A  
Prod. Category N/A  
Incentive N/A  
Econ. Calc. Date Jan 2018  
Avg. WI Share 96.96 %  
Econ. Life/To Aban. 50.50 yr / 50.50 yr  
Econ. RLI 18.33 yr  
Price Deck Deloitte June 30, 2019  
Forecast Pricing  
Price Set N/A  
Economic Limit N/A  
COS / COO 100.0 % / 100.0 %  
Oil Reserves Type Light and Medium Oil  
Gas Reserves Type Gas

Product	Remaining Reserves				Net Revenue NPV (M\$C)							
	Gross	WI	RI	Co. Share	Net	0.00 %	5.00 %	8.00 %	10.00 %	15.00 %	20.00 %	
Oil (Mbbbl)	1,865.4	1,727.2	10.5	1,737.7	1,478.8	150,061.4	93,585.7	76,183.3	67,812.9	53,325.7	44,086.3	
Sales Gas (MMcf)	73,547.3	71,796.5	6.2	71,802.7	60,722.9	393,765.3	201,941.8	154,036.7	132,832.1	98,693.6	78,433.4	
Condensate (Mbbbl)	-	-	-	-	-	-	-	-	-	-	-	
Liquids (Mbbbl)	3.1	3.1	-	3.1	2.4	158.8	99.8	80.8	71.5	55.5	45.2	
Other Equiv. (MBOE)	-	-	-	-	-	-	-	-	-	-	-	
Other	-	-	-	-	-	-	-	-	-	-	-	
Total (MBOE)	14,126.4	13,696.3	11.5	13,707.8	11,601.7	543,985.6	295,627.4	230,300.7	200,716.5	152,074.8	122,564.9	
Total BTCF						257,426.1	151,744.0	120,275.3	105,346.9	79,851.1	63,864.4	

**Lagasco Inc.**  
**Economics Detail - Before Tax**  
**Results as of July 1, 2019**  
**Total Proved + Probable**  
**Lagasco Inc.**

Year	WI Share Oil				WI Share Sales Gas				WI Share Condensate				WI Share Liquids				WI Other	WI Sales
	WI Wells	Cal Day Rate bbl/d	Volume Mbbl	Avg. Price \$/bbl	Sales Revenue MSC	Cal Day Rate Mcf/d	Volume MMcf	Avg. Price \$/Mcf	Sales Revenue MSC	Cal Day Rate bbl/d	Volume Mbbl	Avg. Price \$/bbl	Sales Revenue MSC	Cal Day Rate bbl/d	Volume Mbbl	Avg. Price \$/bbl	Sales Revenue MSC	WI Sales Revenue MSC
2019 (6)		398.42	408.6	75.2	70.33	5,287.5	9,759.4	1,795.7	3.74	6,703.5	-	-	-	0.8	0.1	33.29	4.7	- 12,001.7
2020		400.42	419.4	153.5	75.52	11,591.9	10,053.7	3,679.6	4.14	15,219.8	-	-	-	0.8	0.3	40.02	11.4	- 26,823.1
2021		401.53	426.3	155.6	79.33	12,344.2	11,501.1	4,197.9	4.71	19,771.4	-	-	-	0.7	0.3	47.63	12.6	- 32,128.1
2022		406.53	413.8	151.0	83.95	12,680.3	13,793.9	5,034.8	4.97	25,038.6	-	-	-	0.7	0.2	53.81	13.3	- 37,732.3
2023		404.54	377.5	137.8	91.44	12,598.7	13,547.3	4,944.8	5.36	26,494.0	-	-	-	0.6	0.2	59.81	13.8	- 39,106.5
2024		402.54	347.4	127.1	93.46	11,881.4	12,246.7	4,482.3	5.80	26,017.1	-	-	-	0.6	0.2	61.28	13.3	- 37,911.9
2025		397.55	319.2	116.5	95.42	11,119.3	11,216.1	4,093.9	5.95	24,351.7	-	-	-	0.6	0.2	62.76	12.7	- 35,483.8
2026		390.55	295.8	108.0	97.38	10,513.6	10,359.4	3,781.2	6.10	23,046.8	-	-	-	0.5	0.2	64.27	12.2	- 33,572.7
2027		382.55	272.6	99.5	99.39	9,889.6	9,623.1	3,512.4	6.24	21,927.8	-	-	-	0.5	0.2	65.83	11.7	- 31,829.1
2028		372.66	253.4	92.7	101.43	9,405.8	8,977.3	3,285.7	6.39	20,992.7	-	-	-	0.5	0.2	67.41	11.2	- 30,409.7
2029		367.84	237.2	86.6	103.55	8,963.3	8,403.7	3,067.3	6.05	18,571.5	-	-	-	0.4	0.2	69.02	10.8	- 27,545.6
2030		359.84	220.2	80.4	105.64	8,488.7	7,896.8	2,882.3	5.77	16,629.2	-	-	-	0.4	0.1	70.69	10.4	- 25,128.3
2031		353.94	204.1	74.5	107.78	8,028.9	7,441.2	2,716.1	5.88	15,957.6	-	-	-	0.4	0.1	72.37	10.0	- 23,996.5
2032		345.95	191.9	70.2	109.94	7,721.2	7,026.2	2,571.6	6.03	15,516.5	-	-	-	0.4	0.1	74.06	9.7	- 23,247.3
2033		339.05	179.8	65.6	112.16	7,362.0	6,644.2	2,425.1	6.14	14,889.7	-	-	-	0.3	0.1	75.80	9.0	- 22,260.7
Rem.		329.17	57.0	748.9	141.41	105,897.3	3,147.8	41,390.3	8.20	339,206.8	-	-	-	0.1	1.3	97.84	131.7	- 445,235.8
50.50 yr			2,343.1	108.31	253,773.6		93,861.0	6.72	630,340.9		-	-	-	4.2	71.77	298.6	-	884,413.1

Year	Crown Royalties				Freehold Royalties				Indian Royalties				Overriding Royalties				Other Total Roy. & Total Roy. & Burdens		
	Unadj. Royalty MSC	Royalty Deduction MSC	Royalty Payable MSC	Mineral Tax MSC	Unadj. Royalty MSC	Royalty Deduction MSC	Royalty Payable MSC	Mineral Tax MSC	Unadj. Royalty MSC	Royalty Deduction MSC	Royalty Payable MSC	Mineral Tax MSC	Unadj. Royalty MSC	Royalty Deduction MSC	Royalty Payable MSC	NPI Payable MSC	Burdens MSC	Burden MSC	Burden %
2019 (6)	14.3	-	14.3	1,489.2	-	1,489.2	-	-	-	-	-	-	324.1	-	324.1	18.1	-	1,845.6	15.4
2020	64.9	-	64.9	3,294.6	-	3,294.6	-	-	-	-	-	-	743.8	-	743.8	23.5	-	4,126.9	15.4
2021	48.9	-	48.9	3,973.5	-	3,973.5	-	-	-	-	-	-	948.6	-	948.6	43.2	-	5,014.2	15.6
2022	43.4	-	43.4	4,679.6	-	4,679.6	-	-	-	-	-	-	1,167.7	-	1,167.7	34.8	-	5,925.5	15.7
2023	41.7	-	41.7	4,853.4	-	4,853.4	-	-	-	-	-	-	1,209.2	-	1,209.2	45.3	-	6,149.6	15.7
2024	36.0	-	36.0	4,709.3	-	4,709.3	-	-	-	-	-	-	1,168.3	-	1,168.3	34.9	-	5,948.5	15.7
2025	28.1	-	28.1	4,413.3	-	4,413.3	-	-	-	-	-	-	1,087.0	-	1,087.0	47.7	-	5,576.1	15.7
2026	26.2	-	26.2	4,176.1	-	4,176.1	-	-	-	-	-	-	1,024.0	-	1,024.0	35.3	-	5,261.7	15.7
2027	25.0	-	25.0	3,959.3	-	3,959.3	-	-	-	-	-	-	965.3	-	965.3	46.0	-	4,995.6	15.7
2028	24.0	-	24.0	3,782.7	-	3,782.7	-	-	-	-	-	-	919.5	-	919.5	29.2	-	4,755.5	15.6
2029	23.1	-	23.1	3,425.5	-	3,425.5	-	-	-	-	-	-	800.8	-	800.8	44.8	-	4,294.1	15.6
2030	22.3	-	22.3	3,123.6	-	3,123.6	-	-	-	-	-	-	705.7	-	705.7	30.5	-	3,882.1	15.4
2031	21.6	-	21.6	2,982.3	-	2,982.3	-	-	-	-	-	-	671.4	-	671.4	43.2	-	3,718.6	15.5
2032	21.0	-	21.0	2,889.2	-	2,889.2	-	-	-	-	-	-	645.9	-	645.9	40.6	-	3,596.6	15.5
2033	20.3	-	20.3	2,766.4	-	2,766.4	-	-	-	-	-	-	613.0	-	613.0	41.6	-	3,441.3	15.5
Rem.	140.4	-	140.4	55,596.4	-	55,596.4	-	-	-	-	-	-	11,531.0	-	11,531.0	850.0	-	68,117.8	15.3
50.50 yr	601.2	-	601.2	110,114.5	-	110,114.5	-	-	-	-	-	-	24,525.2	-	24,525.2	1,408.7	-	136,649.6	15.5

Year	Capital Costs										Before Tax Cash Flow							
	WI Sales Revenue MSC	Royalty Revenue MSC	Co. Share Revenue MSC	Total Roy. & Burden MSC	Net Revenue MSC	Operating Costs MSC	Abandon. & Salvage MSC	Other Revenue MSC	Sask Cap Surch MSC	Net Op. Income MSC	COGPE MSC	CEE MSC	CDE MSC	CCA MSC	Total MSC	BTCF MSC	Cum. MSC	NPV @ 10.00 % MSC
2019 (6)	12,001.7	14.6	12,016.3	1,845.6	10,170.6	4,192.1	-	-	-	5,978.6	-	-	10.0	-	10.0	5,968.6	5,968.6	5,828.9
2020	26,823.1	30.8	26,853.9	4,126.9	22,727.0	8,390.2	2,587.6	-	-	11,749.1	-	-	2,018.5	151.0	2,169.5	9,579.7	15,548.2	8,586.7
2021	32,128.1	32.0	32,160.1	5,014.2	27,145.9	8,610.0	15.5	-	-	18,520.5	-	-	6,997.6	1,082.4	8,080.1	10,440.4	25,988.7	8,602.8
2022	37,732.3	33.3	37,765.6	5,925.5	31,840.1	9,223.3	1,596.0	-	-	21,020.9	-	-	7,117.8	1,571.7	8,689.5	12,331.4	38,320.0	9,105.7
2023	39,106.5	35.5	39,142.0	6,149.6	32,992.4	9,011.9	-	-	-	23,980.6	-	-	-	-	-	23,980.6	62,300.6	16,397.7
2024	37,911.9	35.8	37,947.7	5,948.5	31,999.2	8,769.7	2,374.9	-	-	20,854.5	-	-	-	-	-	20,854.5	83,155.1	12,900.2
2025	35,483.8	35.8	35,519.6	5,576.1	29,943.4	8,477.7	-	-	-	21,465.8	-	-	-	-	-	21,465.8	104,620.9	12,128.8
2026	33,572.7	35.9	33,608.6	5,261.7	28,346.9	8,278.2	2,505.2	-	-	17,563.5	-	-	-	-	-	17,563.5	122,184.4	8,965.1
2027	31,829.1	36.0	31,865.2	4,995.6	26,869.6	7,946.0	-	-	-	18,923.6	-	-	-	-	-	18,923.6	141,108.0	8,835.8
2028	30,409.7	36.2	30,445.9	4,755.5	25,690.4	7,797.5	2,318.4	-	-	15,574.5	-	-	-	-	-	15,574.5	156,682.5	6,569.0
2029	27,545.6	36.3	27,581.9	4,294.1	23,287.7	7,594.2	-	-	-	15,693.6	-	-	-	-	-	15,693.6	172,376.0	6,055.5
2030	25,128.3	36.4	25,164.8	3,882.1	21,282.7	7,456.1	2,040.4	-	-	11,786.2	-	-	-	-	-	11,786.2	184,162.2	4,103.4
2031	23,996.5	36.6	24,033.1	3,718.6	20,314.5	7,294.0	-	-	-	13,020.5	-	-	-	-	-	13,020.5	197,182.7	4,151.9
2032	23,247.3	36.8	23,284.1	3,596.6	19,687.5	7,195.9	2,433.5	-	-	10,058.1	-	-	-	-	-	10,058.1	207,240.8	2,885.4
2033	22,260.7	36.9	22,297.6	3,441.3	18,856.3	7,080.7	71.9	-	-	11,703.8	-	-	-	-	-	11,703.8	218,944.5	3,084.3
Rem.	445,235.8	1,267.5	446,503.3	68,117.8	378,385.5	178,990.1	42,451.8	-	-	156,943.5	-	-	-	-	-	156,943.5	375,888.1	16,929.3
50.50 yr	884,413.1	1,776.4	886,189.5	136,649.6	749,539.9	296,307.6	58,395.2	-	-	394,837.1	-	-	16,143.9	2,805.1	18,949.1	375,888.1	375,888.1	135,130.4

Country/Province Canada  
Mineral Owner N/A  
Prod. Category N/A  
Incentive N/A  
Econ. Calc. Date Jan 2018  
Avg. WI Share 97.21 %  
Econ. Life/To Aban. 50.50 yr / 50.50 yr  
Econ. RLI 23.85 yr  
Price Deck Deloitte June 30, 2019  
Forecast Pricing  
Price Set N/A  
Economic Limit N/A  
COS / COO 100.0 % / 100.0 %  
Oil Reserves Type Light and Medium Oil  
Gas Reserves Type Gas

Product	Remaining Reserves				Net Revenue NPV (MSC)							
	Gross	WI	RI	Co. Share	Net	0.00 %	5.00 %	8.00 %	10.00 %	15.00 %	20.00 %	
Oil (Mbbbl)	2,513.6	2,343.1	12.6	2,355.8	2,004.1	217,379.7	120,521.5	94,198.2	82,187.8	62,404.4	50,439.8	
Sales Gas (MMcf)	95,939.8	93,861.0	7.2	93,868.2	79,215.0	531,921.0	252,883.9	188,063.4	160,266.6	116,746.8	91,613.2	
Condensate (Mbbbl)	-	-	-	-	-	-	-	-	-	-	-	
Liquids (Mbbbl)	4.2	4.2	-	4.2	3.3	239.2	129.6	99.8	86.3	64.2	51.0	
Other Equiv. (MBOE)	-	-	-	-	-	-	-	-	-	-	-	
Other	-	-	-	-	-	-	-	-	-	-	-	
Total (MBOE)	18,507.8	17,990.8	13.8	18,004.6	15,209.9	749,539.9	373,535.0	282,361.4	242,540.6	179,215.4	142,104.0	
Total BTCF						375,888.1	204,604.8	156,968.7	135,130.4	99,106.8	77,388.5	



# Evaluation procedure

## Definitions and methodology

Effective as of June 2019

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# Procedure

Deloitte has prepared estimates of resources and reserves in accordance with the process published in The Canadian Oil and Gas Evaluation Handbook (COGEH), Consolidated 3rd Edition. The reader is referred to the Handbook for a complete description of the particular process quoted as follows:

## **Resources or reserves evaluation**

A “Resources or Reserves evaluation” is the process whereby a qualified reserves evaluator estimates the quantities and values of oil and gas resources or reserves by interpreting and assessing all available pertinent data. The value of an oil and gas asset is a function of the ability or potential ability of that asset to generate future net revenue, and it is measured using a set of forward-looking assumptions regarding resources or reserves, production, prices, and costs. Evaluations of oil and gas assets, in particular reserves, include a discounted cash flow analysis of estimated future net revenue.

## **Reserves audit**

A “Reserves audit” is the process carried out by a qualified reserves auditor that results in a reasonable assurance, in the form of an opinion, that the reserves information has in all material respects been determined and presented according to the principles and definitions adopted by the Society of Petroleum Evaluation Engineers (SPEE) (Calgary Chapter), and Association of Professional Engineers and Geoscientists of Alberta (APEGA) and are, therefore free of material misstatement.

The reserves evaluations prepared by the company have been audited, not for the purpose of verifying exactness, but the reserves information, company policies, procedures, and methods used in estimating the reserves will be examined in sufficient detail so that Deloitte can express an opinion as to whether, in the aggregate, the reserves information presented by the company are reasonable.

Deloitte may require its own independent evaluation of the reserves information for a small number of properties, or for a large number of properties as tests for the reasonableness of the company’s evaluations. The tests to be applied to the company’s evaluations insofar as their methods and controls and the properties selected to be re-evaluated will be determined by Deloitte, in its sole judgment, to arrive at an opinion as to the reasonableness of the company’s evaluations.

## **Reserves review**

A “Reserves review” is the process whereby a reserves auditor conducts a high-level assessment of reserves information to determine if it is plausible. The steps consist primarily of enquiry, analytical procedure, analysis, review of historical reserves performance, and discussion with the company’s reserves management staff.

“Plausible” means the reserves data appear to be worthy of belief based on the information obtained by the independent qualified reserves auditor in carrying out the aforementioned steps. The independent reserves auditor can give negative assurance, but not an opinion. For example, “Nothing came to my attention that would indicate the reserves information has not been prepared and presented in accordance with principles and definitions adopted by the SPEE (Calgary Chapter), and APEGA (Practice Standard for the Evaluation of Oil and Gas Reserves for Public Disclosure).

Reviews do not require examination of the detailed document that supports the reserves information, unless this information does not appear to be plausible.

# Resource and reserve definitions

## Resource classification

Resources and reserves in this evaluation are classified by Deloitte in accordance with the definitions in Section 1.3 of the Canadian Oil and Gas Evaluation Handbook, Consolidated 3rd Edition.

The term “resources” encompasses all petroleum quantities that originally existed on or within the earth’s crust in naturally occurring accumulations, including discovered and undiscovered (recoverable and unrecoverable) and quantities already produced. Accordingly, total resources are equivalent to total petroleum-initially-in-place (“PIIP”).

## Classification of resources and reserves



Image adapted from: SPE-PRMS, 2007

**Total petroleum-initially-in-place** is that quantity of petroleum that is estimated to exist originally in naturally occurring accumulations. It includes that quantity of petroleum that is estimated, as of a given date, to be contained in known accumulations, prior to production, plus those estimated quantities in accumulations yet to be discovered (equivalent to “total resources”).

**Discovered petroleum-initially-in-place** (equivalent to discovered resources) is that quantity of petroleum that is estimated, as of a given date, to be contained in known accumulations prior to production. The recoverable portion of discovered petroleum-initially-in-place includes production, reserves, and contingent resources; the remainder is unrecoverable.

**Production** is the cumulative quantity of petroleum that has been recovered at a given date.

**Reserves** are estimated remaining quantities of oil and natural gas and related substances anticipated to be recoverable from known accumulations, as of a given date, based on: the analysis of drilling, geological, geophysical, and engineering data; the use of established technology; and specified economic conditions, which are generally accepted as being reasonable. Reserves are further classified in accordance with the level of certainty associated with the estimates and may be sub-classified based on development and production status. Refer to the full definitions on reserves in Section 1.3.8 of COGEH.

**Contingent resources** are those quantities of petroleum estimated, as of a given date, to be potentially recoverable from known accumulations using established technology or technology under development, but which are not currently considered commercially recoverable due to one or more contingencies. Contingencies may include factors such as economic, legal, environmental, political and regulatory matters, or a lack of markets. It is also appropriate to classify as contingent resources the estimated discovered recoverable quantities associated with a project in the early evaluation stage. Contingent resources are further classified in accordance with the level of certainty associated with the estimates and may be sub-classified based on project maturity and/or characterized by their economic status. Refer to COGEH and Figure 1-2.

**Unrecoverable** is that portion of discovered and undiscovered PIIP quantities which is estimated, as of a given date, not to be recoverable by future development projects. A portion of these quantities may become recoverable in the future as commercial circumstances change or technological developments occur; the remaining portion may never be recovered due to the physical/chemical constraints represented by subsurface interaction of fluids and reservoir rocks.

**Undiscovered petroleum-initially-in-place** (equivalent to undiscovered resources) is that quantity of petroleum that is estimated, on a given date, to be contained in accumulations yet to be discovered. The recoverable portion of undiscovered petroleum-initially-in-place is referred to as prospective resources, the remainder as unrecoverable.

**Prospective resources** are those quantities of petroleum estimated, as of a given date, to be potentially recoverable from undiscovered accumulations by application of future development projects. Prospective resources have both an associated chance of discovery and a chance of development. Prospective resources are further subdivided in accordance with the level of certainty associated with recoverable estimates assuming their discovery and development and may be sub-classified based on project maturity. Refer to COGEH and Figure 1-2.

Reserves, contingent resources, and prospective resources should not be combined without recognition of the significant differences in criteria associated with their classification. For example, the sum of reserves, contingent resources, and prospective resources may be referred to as remaining recoverable resources. When resources categories are combined, it is important that each component of the summation also be provided, and it should be made clear whether and how the components in the summation were adjusted for risk.

### Uncertainty ranges

The range of uncertainty of estimated recoverable volumes may be represented either by deterministic scenarios or by a probability distribution. Resources should be provided as low, best, and high estimates as follows:

**Low estimate:** This is considered a conservative estimate of the quantity that will actually be recovered. It is likely that the actual remaining quantities recovered will exceed the low estimate. If probabilistic methods are used, there should be at least a 90 percent probability (P90) that the quantities actually recovered will equal or exceed the low estimate.

**Best estimate:** This is considered the best estimate of the quantity that will actually be recovered. It is equally likely that the actual remaining quantities recovered will be greater or less than the best estimate. If probabilistic methods are used, there should be at least a 50 percent probability (P50) that the quantities actually recovered will equal or exceed the best estimate.

**High estimate:** This is considered an optimistic estimate of the quantity that will actually be recovered. It is unlikely that the actual remaining quantities recovered will exceed the high estimate. If probabilistic methods are used, there should be at least a 10 percent probability (P10) that the quantities actually recovered will equal or exceed the high estimate.

This approach to describing uncertainty may be applied to reserves, contingent resources, and prospective resources. There may be significant risk that sub-commercial and undiscovered accumulations will not achieve commercial production. However, it is useful to consider and identify the range of potentially recoverable quantities independently of such risk.

### Assessing commerciality

In order to assign recoverable resources of any category, a development plan consisting of one or more projects needs to be defined. In-place quantities for which a feasible project cannot be defined using established technology or technology under development are classified as unrecoverable. In this context, “technology under development” refers to technology that has been developed and verified by testing as feasible for future commercial applications to the subject reservoir. In the early stage of exploration or development, project definition will not be of the detail expected in later stages of maturity. In most cases recovery efficiency will be largely based on analogous projects.

Estimates of recoverable quantities are stated in terms of the sales products derived from a development program, assuming commercial development. It must be recognized that reserves, contingent resources, and prospective resources involve different risks associated with achieving commerciality. The likelihood that a project will achieve commerciality is referred to as the “chance of commerciality”. The chance of commerciality varies in different categories of recoverable resources as follows:

**Reserves:** To be classified as reserves, estimated recoverable quantities must be associated with a project(s) that has demonstrated commercial viability. Under the fiscal conditions applied in the estimation of reserves, the chance of commerciality is effectively 100 percent.

**Contingent resources:** Not all technically feasible development plans will be commercial. The commercial viability of a development project is dependent on the forecast of fiscal conditions over the life of the project. For contingent resources, the risk component relating to the likelihood that an accumulation will be commercially developed is referred to as the “chance of development”. For contingent resources the chance of commerciality is equal to the chance of development.

**Prospective resources:** Not all exploration projects will result in discoveries. The chance that an exploration project will result in the discovery of petroleum is referred to as the “chance of discovery”. Thus, for an undiscovered accumulation the chance of commerciality is the product of two risk components – the chance of discovery and the chance of development.

### Economic status

By definition, reserves are commercially (and hence economically) recoverable. A portion of contingent resources may also be associated with projects that are economically viable but have not yet satisfied all requirements of commerciality. Accordingly, it may be a desirable option to sub-classify contingent resources by economic status.

**Economic contingent resources** are those contingent resources that are currently economically recoverable.

**Sub-economic contingent resources** are those contingent resources that are not currently economically recoverable.

Where evaluations are incomplete such that it is premature to identify the economic viability of a project, it is acceptable to note that project economic status is “undetermined” (i.e., “contingent resources – economic status undetermined”).

In examining economic viability, the same fiscal conditions should be applied as in the estimation of reserves, i.e. specified economic conditions, which are generally accepted as being reasonable (refer to COGEH, Section 1.3.7).

### Reserve categories

Reserves are classified by Deloitte in accordance with the following definitions published by COGEH and which meet the standards established by National Instrument 51-101, Standards of Disclosure for Oil and Gas Activities and found in Appendix 1 to Companion Policy 51-101 CP, Part 2 Definition of Reserves.

Reserves are estimated remaining quantities of oil and natural gas and related substances anticipated to be recoverable from known accumulations, as of a given date, based on:

- Analysis of drilling, geological, geophysical, and engineering data;
- The use of established technology; and
- Specified economic conditions, which are generally accepted as being reasonable and shall be disclosed.

Reserves are classified according to the degree of certainty associated with the estimates:

**Proved reserves** are those reserves that can be estimated with a high degree of certainty to be recoverable. It is likely that the actual remaining quantities recovered will exceed the estimated proved reserves.

**Probable reserves** are those additional reserves that are less certain to be recovered than proved reserves. It is equally likely that the actual remaining quantities recovered will be greater or less than the sum of the estimated proved plus probable reserves.

**Possible reserves** are those additional reserves that are less certain to be recovered than probable reserves. It is unlikely that the actual remaining quantities recovered will exceed the sum of the estimated proved plus probable plus possible reserves.

### Development and production status

Each of the reserves categories (proved, probable and possible) may be divided into developed and undeveloped categories:

**Developed reserves** are those reserves that are expected to be recovered from existing wells and installed facilities or, if facilities have not been installed, that would involve a low expenditure (for example, when compared to the cost of drilling a well) to put the reserves on production. The developed category may be subdivided into producing and non-producing.

**Developed producing reserves** are those reserves that are expected to be recovered from completion intervals open at the time of the estimate. These reserves may be currently producing, or if shut-in, they must have previously been on production, and the date of resumption of production must be known with reasonable certainty.

**Developed non-producing reserves** are those reserves that either have not been on production, or have previously been on production, but are shut-in, and the date of resumption of production is unknown.

**Undeveloped reserves** are those reserves expected to be recovered from known accumulations where a significant expenditure (for example, when compared to the cost of drilling a well) is required to render them capable of production. They must fully meet the requirements of the reserves category (proved, probable, possible) to which they are assigned.

In multi-well pools, it may be appropriate to allocate total pool reserves between the developed and undeveloped categories or to subdivide the developed reserves for the pool between developed producing and developed non-producing. This allocation should be based on the estimator's assessment as to the reserves that will be recovered from specific wells, facilities, and completion intervals in the pool and their respective development and production status.

### Levels of certainty for reported reserves

The qualitative certainty levels referred to in the definitions above are applicable to individual reserves entities (which refers to the lowest level at which reserves calculations are performed) and to reported reserves (which refers to the highest – level sum of individual entity estimates for which reserves estimates are presented). Reported reserves should target the following levels of certainty under a specific set of economic conditions:

- At least a 90 percent probability that the quantities actually recovered will equal or exceed the estimated proved reserves;
- At least a 50 percent probability that the quantities actually recovered will equal or exceed the sum of the estimated proved plus probable reserves; and
- At least a 10 percent probability that the quantities actually recovered will equal or exceed the sum of the estimated proved plus probable plus possible reserves.

A quantitative measure of the certainty levels pertaining to estimates prepared for the various reserves categories is desirable to provide a clearer understanding of the associated risks and uncertainties. However, the majority of reserves estimates are prepared using deterministic methods that do not provide a mathematically derived quantitative measure of probability. In principle, there should be no difference between estimates prepared using probabilistic or deterministic methods.

# Resource and reserve estimation

Deloitte generally assigns reserves to properties via deterministic methods. Probabilistic estimation techniques are typically used where there is a low degree of certainty in the information available and is generally used in resource evaluations. This will be stated within the detailed property reports.

## **Deterministic**

Reserves and resources were estimated either by i) Volumetric, ii) Decline curve analysis, iii) Material balance techniques, or iv) Performance predictions.

Volumetric reserves were estimated using the wellbore net pay and an assigned drainage area or, where sufficient data was available, the reservoir volumes calculated from isopach maps. Reservoir rock and fluid data were obtained from available core analysis, well logs, PVT data, gas analysis, government sources, and other published information either on the evaluated pool or from a similar reservoir in the immediate area. In mature (producing) reservoirs, decline curve analysis and/or material balance was utilized in all applicable evaluations.

## **Probabilistic**

Because of the uncertainty inherent in reservoir parameters, probabilistic analysis, which is based on statistical techniques, provides a formulated approach by which to obtain a reasonable assessment of the petroleum-initially-in-place (PIIP) and/or the recoverable resource. Probabilistic analysis involves generating a range of possible outcomes for each unknown parameter and their associated probability of occurrence. When probabilistic analysis is applied to resource estimation, it provides a range of possible PIIPs or recoverable resources.

In preparing a resource estimate, Deloitte assesses the following volumetric parameters: areal extent, net pay thickness, porosity, hydrocarbon saturation, reservoir temperature, reservoir pressure, gas compressibility factor, recovery factor, and surface loss. A team of professional engineers and geologists experienced in probabilistic resource evaluation considers each of the parameters individually to estimate the most reasonable range of values. Working from existing data, the team discusses and agrees on the low (P90) and high (P10) values for each parameter. To help test the reasonableness of the proposed range, a minimum (P99) and maximum (P1) value are also extrapolated from the low and high values. After ranges have been established for each parameter, these independent distributions are used to determine a P90, P50, and P10 result, which comprise Deloitte's estimated range of PIIP or recoverable resource.

It is important to note that the process used to determine the final P10, P90, and P50 results involves multiplying the various volumetric parameters together. This yields results, which require adjustments to maintain an appropriate probability of occurrence. For example, when calculating total reservoir volume (Area x Pay), the chance of getting a volume greater than the P10 Area x P10 Pay is less than 10 percent – the chance of getting the calculated result is only 3.5 percent (p3.5). As you multiply additional P10 values, the probability of achieving the calculated value becomes less likely. Similarly, multiplying P90 parameters together will yield a result that has a probability greater than P90. As such, when multiplying independent distributions together the results must be adjusted via interpolation to determine final P90 and P10 values.

The results appearing in this report represent interpolated P90 and P10 values. As defined by COGEH (and the Petroleum Resource Management System "PRMS"), the P50 estimate is the "best estimate" for reporting purposes.



# Production forecasts

Production forecasts were based on historical trends or by comparison with other wells in the immediate area producing from similar reservoirs. Non-producing gas reserves were forecast to come on-stream within the first two years from the effective date under direct sales pricing and deliverability assumptions, if a tie-in point to an existing gathering system was in close proximity (approximately two miles). If the tie-in point was of a greater distance (and dependent on the reserve volume and risk), the reserves were forecast to come on-stream in years three or four from the effective date. These on-stream dates were used when the company could not provide specific on-stream date information.

For reserve volumes that meet all reserve category rules but are behind casing and waiting on depletion of the producing zone, these volumes are forecast to be brought on-stream following the end of the existing production.

# Land schedules and maps

The evaluated company provided schedules of land ownership, which included lessor and lessee royalty burdens. The land data was accepted as factual and no investigation of title by Deloitte was made to verify the records.

Well maps included within this report represent all of the company's interests that were evaluated in the specified area.

# Geology

An initial review of each property is undertaken to establish the produced maturity of the reservoir being evaluated. Where extensive production history exists a geologic analysis is not conducted since the remaining hydrocarbons can be determined by productivity analysis.

- For properties that are not of a mature production nature, a geologic review is conducted. This work consists of:
- Developing a regional understanding of the play,
- Assessing reservoir parameters from the nearest analogous production,
- Analysis of all relevant well data including logs, cores, and tests to measure net formation thickness (pay), porosity, and initial water saturation,
- Auditing of client mapping or developing maps to meet Deloitte's need to establish volumetric hydrocarbons-in-place.

Procedures specific to the project are discussed in the body of the report.

# Royalties and taxes

## General

All royalties and taxes, including the lessor and overriding royalties, are based on government regulations, negotiated leases or farm-out agreements that were in effect as of the evaluation effective date. If regulations change, the net after royalty recoverable reserve volumes may differ materially.

Deloitte utilizes a variety of reserves and valuation products in determining the result sets.

# Capital and operating considerations

Operating and capital costs were based on current costs escalated to the date the cost was incurred, and are in current year dollars. The economic runs provide the escalated dollar costs as found in the Pricing Table 1 in the Price and Market Demand section.

Reserves estimated to meet the standards of NI 51-101 for constant prices and costs (optional), are based on unescalated operating and capital costs.

Capital costs were both provided by the Company (and reviewed by Deloitte for reasonableness); or determined by Deloitte taking into account well capability, facility requirement, and distance to markets. Facility expenditures for shut-in gas are forecast to occur prior to the well's first production.

Operating costs were determined from historical data on the property as provided by the evaluated Company. If this data was not available or incomplete, the costs were based on Deloitte experience and historical database. Operating costs are defined into three types.

The first type, variable (dollar per unit), covers the costs directly associated with the product production. Costs for processing, gathering and compression are based on raw gas volumes. Over the life of the project, the costs are inflated in escalated runs to reflect the increase in costs over time. In a constant dollar review the costs remain flat over the project life.

The second type, fixed plant or battery (dollar per year), is again a fixed component over the project life and reflects any gas plant or battery operating costs allocated back to the evaluated group. The plant or battery can also be run as a separate group and subsequently consolidated at the property level.

The third type takes the remaining costs that are not associated with the first two and assigns them to the well based on a fixed and variable component. A split of 65 percent fixed and 35 percent variable assumes efficiencies of operation over time, i.e.: the well operator can reduce the number of monthly visits as the well matures, workovers may be delayed, well maintenance can also be reduced. The basic assumption is that the field operator will continue to find efficiencies to reduce the costs over time to maintain the overall dollar per Boe cost. Thus as the production drops over time the 35 percent variable cost will account for these efficiencies. If production is flat, all the costs will also remain flat. Both the fixed and variable costs in this type are inflated in the escalated case and held constant in the constant dollar review. These costs also include property taxes, lease rentals, government fees, and administrative overhead.

In reserve evaluations conducted for purposes of NI 51-101, or, if an economic analysis was prepared for a resource evaluation, well abandonment and reclamation costs have been included and these costs were either provided by the company (and reviewed by Deloitte for reasonableness) or based on area averages (only the base abandonment costs were utilized and no consideration for groundwater protection, vent flow repair costs, or gas migration costs were considered). If there were multiple events to abandon, the costs were increased by a 25 percent factor. Site reclamation costs were based on information provided by the company or based on area averages. For undeveloped reserve estimates for undrilled locations, both abandonment and site reclamation costs are also included for determining whether reserves should be attributed to that property in the first year in which the reserves are considered for attribution to the property. For the purposes of this report, Deloitte has included abandonment and reclamation costs at the entity level for locations. These are based on area averages taken from the Alberta Energy Regulator (AER) Directive 011 called the "Alberta Regional Well Abandonment Cost Tables", and from the AER Directive 011 section called "Alberta Regional Well Reclamation Cost Table". No abandonment or reclamation costs have been applied to existing wells or facilities.

# Price and market demand forecasts

## **Base case forecast effective June 30, 2019**

The attached price and market forecasts have been prepared by Deloitte, based on information available from numerous government agencies, industry publications, oil refineries, natural gas marketers, and industry trends.

The prices are Deloitte's best estimate of how the future will look, based on the many uncertainties that exist in both the domestic Canadian and international petroleum industries. Inflation forecasts and exchange rates, an integral part of the forecast, have also been considered.

In preparing the price forecast Deloitte considers the current monthly trends, the actual and trends for the year-to-date, and the prior year actual in determining the forecast. The base forecast for both oil and gas is based on NYMEX futures in US dollars.

The crude oil and natural gas forecasts are based on yearly variable factors weighted to higher percent in current data and reflecting a higher percent to the prior year historical. These forecasts are Deloitte's interpretation of current available information and while they are considered reasonable, changing market conditions or additional information may require alteration from the indicated effective date.

# Canadian domestic forecast

Forecast effective: June 30 2019

				Crude Oil Pricing							Natural Gas Liquids Pricing Edmonton Par Prices					Natural Gas Pricing							Sulphur	
				WTI at Cushing Oklahoma US\$/bbl Real	WTI at Cushing Oklahoma US\$/bbl Current	Edmonton City Gate C\$/bbl Real	Edmonton City Gate C\$/bbl Current	WCS 20.5 Deg. API Hardisty C\$/bbl Current	Bow River 25 Deg. API Hardisty C\$/bbl Current	Heavy Oil 12 Deg. API Hardisty C\$/bbl Current	Ethane C\$/bbl Current	Propane C\$/bbl Current	Butane C\$/bbl Current	Pentanes + Condensate C\$/bbl Current	Alberta Reference Average Price C\$/mcf Current	Alberta AECO Average Price C\$/mcf Real	Alberta AECO Average Price C\$/mcf Current	B.C. Direct Stn. 2 Sales C\$/mcf Current	NYMEX Henry Hub US\$/Mcf Real	NYMEX Henry Hub US\$/Mcf Current	Ontario Dawn Reference Point C\$/mcf Current	Alberta Plant Gate C\$/lt Current		
H	2009	0.3%	0.3%	0.880	\$72.30	\$61.65	\$77.51	\$66.10	\$58.66	\$59.80	\$54.40	\$11.61	\$34.62	\$56.21	\$69.49	\$3.85	\$4.64	\$3.96	\$4.17	\$4.63	\$3.95	\$4.80	(\$5.08)	
I	2010	1.8%	1.8%	0.971	\$92.82	\$79.40	\$90.96	\$77.80	\$67.22	\$68.18	\$60.62	\$11.53	\$45.19	\$68.79	\$84.02	\$3.76	\$4.69	\$4.01	\$4.01	\$5.13	\$4.39	\$4.79	\$56.94	
S	2011	2.9%	2.9%	1.012	\$108.98	\$94.88	\$109.73	\$95.54	\$77.12	\$78.42	\$69.60	\$10.30	\$52.41	\$86.98	\$105.24	\$3.46	\$4.17	\$3.63	\$3.34	\$4.59	\$4.00	\$4.34	\$101.60	
T	2012	1.5%	1.5%	1.001	\$104.94	\$94.11	\$96.53	\$86.57	\$73.10	\$74.41	\$64.07	\$6.73	\$30.80	\$75.47	\$99.67	\$2.25	\$2.66	\$2.39	\$2.29	\$3.07	\$2.75	\$3.11	\$126.81	
O	2013	0.9%	0.9%	0.972	\$107.51	\$97.91	\$102.52	\$93.36	\$74.97	\$76.29	\$65.49	\$8.68	\$38.54	\$77.44	\$103.52	\$2.98	\$3.48	\$3.17	\$3.11	\$4.09	\$3.73	\$4.13	\$62.17	
R	2014	1.9%	1.9%	0.906	\$101.45	\$93.26	\$102.25	\$94.00	\$81.06	\$81.49	\$73.70	\$12.46	\$42.93	\$59.43	\$101.47	\$4.22	\$4.90	\$4.50	\$4.16	\$4.78	\$4.39	\$5.76	\$88.99	
I	2015	1.1%	1.1%	0.783	\$51.95	\$48.69	\$60.82	\$57.00	\$44.80	\$45.23	\$39.63	\$7.49	\$5.35	\$33.70	\$55.15	\$2.56	\$2.87	\$2.69	\$1.81	\$2.81	\$2.63	\$3.72	\$107.45	
C	2016	1.4%	1.4%	0.755	\$45.53	\$43.15	\$55.09	\$52.22	\$38.90	\$39.23	\$34.08	\$6.04	\$8.71	\$31.45	\$52.43	\$1.93	\$2.28	\$2.16	\$1.75	\$2.65	\$2.52	\$3.46	\$45.40	
A	2017	1.6%	1.6%	0.771	\$52.91	\$50.88	\$64.35	\$61.88	\$50.53	\$50.86	\$45.01	\$6.11	\$27.92	\$40.98	\$63.65	\$2.13	\$2.28	\$2.19	\$1.56	\$3.10	\$2.99	\$3.97	\$41.85	
I	2018	2.3%	2.3%	0.772	\$66.44	\$64.94	\$70.70	\$69.10	\$49.68	\$50.00	\$45.34	\$6.90	\$29.76	\$46.17	\$75.74	\$1.36	\$1.57	\$1.54	\$1.26	\$3.24	\$3.17	\$4.07	\$89.25	
2	6 Mths H	1.8%	1.8%	0.749	\$57.22	\$57.22	\$70.90	\$70.90	\$61.65	\$61.98	\$58.77	\$7.58	\$19.67	\$25.50	\$68.74	\$1.60	\$1.88	\$1.88	\$0.96	\$2.76	\$2.76	\$3.56	\$67.48	
0	6 Mths F	0.0%	0.0%	0.760	\$55.00	\$55.00	\$61.85	\$61.85	\$53.95	\$54.35	\$48.95	\$5.20	\$21.65	\$27.85	\$61.85	\$1.25	\$1.50	\$1.50	\$1.10	\$2.65	\$2.65	\$3.45	\$75.00	
1	Avg.	N/A	N/A	0.755	\$56.11	\$56.11	\$66.37	\$66.37	\$57.80	\$58.16	\$53.86	\$6.39	\$20.66	\$26.68	\$65.30	\$1.43	\$1.69	\$1.69	\$1.03	\$2.70	\$2.70	\$3.51	\$71.24	
F	2019	0.0%	0.0%	0.760	\$55.00	\$55.00	\$61.85	\$61.85	\$53.95	\$54.35	\$48.95	\$5.20	\$21.65	\$27.85	\$61.85	\$1.25	\$1.50	\$1.50	\$1.10	\$2.65	\$2.65	\$3.45	\$75.00	
O	2020	2.0%	2.0%	0.760	\$58.00	\$59.15	\$65.80	\$67.10	\$55.05	\$55.90	\$49.95	\$5.30	\$30.20	\$36.90	\$67.10	\$1.65	\$1.85	\$1.90	\$1.50	\$2.85	\$2.90	\$3.75	\$76.50	
R	2021	2.0%	2.0%	0.770	\$61.00	\$63.45	\$71.45	\$74.35	\$59.45	\$60.80	\$54.25	\$6.15	\$33.45	\$48.35	\$74.35	\$1.90	\$2.10	\$2.20	\$1.75	\$3.05	\$3.15	\$4.05	\$78.05	
E	2022	2.0%	2.0%	0.790	\$65.00	\$69.00	\$77.20	\$81.95	\$64.45	\$68.15	\$59.15	\$7.00	\$36.90	\$53.25	\$81.95	\$2.25	\$2.35	\$2.50	\$2.05	\$3.15	\$3.35	\$4.20	\$79.60	
C	2023	2.0%	2.0%	0.800	\$70.00	\$75.75	\$82.50	\$89.30	\$71.70	\$75.25	\$66.30	\$8.15	\$40.20	\$58.05	\$89.30	\$2.65	\$2.70	\$2.90	\$2.50	\$3.30	\$3.55	\$4.45	\$81.20	
A	2024	2.0%	2.0%	0.800	\$70.00	\$77.30	\$82.50	\$91.10	\$73.15	\$76.75	\$67.60	\$9.10	\$41.00	\$59.25	\$91.10	\$3.00	\$2.95	\$3.25	\$2.80	\$3.50	\$3.85	\$4.80	\$82.80	
S	2025	2.0%	2.0%	0.800	\$70.00	\$78.85	\$82.50	\$92.90	\$74.60	\$78.25	\$69.00	\$10.10	\$41.85	\$60.40	\$92.90	\$3.30	\$3.20	\$3.60	\$3.15	\$3.50	\$3.95	\$4.90	\$84.45	
T	2026	2.0%	2.0%	0.800	\$70.00	\$80.40	\$82.50	\$94.75	\$76.10	\$79.85	\$70.35	\$10.30	\$42.65	\$61.65	\$94.75	\$3.40	\$3.20	\$3.70	\$3.20	\$3.50	\$4.00	\$5.00	\$86.15	
	2027	2.0%	2.0%	0.800	\$70.00	\$82.00	\$82.50	\$96.65	\$77.60	\$81.45	\$71.75	\$10.50	\$43.55	\$62.85	\$96.65	\$3.45	\$3.20	\$3.75	\$3.30	\$3.50	\$4.10	\$5.10	\$87.85	
	2028	2.0%	2.0%	0.800	\$70.00	\$83.65	\$82.50	\$98.60	\$79.15	\$83.05	\$73.20	\$10.70	\$44.40	\$64.10	\$98.60	\$3.55	\$3.20	\$3.80	\$3.35	\$3.50	\$4.20	\$5.20	\$89.65	
	2029	2.0%	2.0%	0.800	\$70.00	\$85.35	\$82.50	\$100.55	\$80.75	\$84.70	\$74.65	\$10.90	\$45.30	\$65.40	\$100.55	\$3.60	\$3.20	\$3.90	\$3.40	\$3.50	\$4.25	\$5.30	\$91.40	
	2030	2.0%	2.0%	0.800	\$70.00	\$87.05	\$82.50	\$102.60	\$82.35	\$86.40	\$76.15	\$11.15	\$46.20	\$66.70	\$102.60	\$3.65	\$3.20	\$4.00	\$3.50	\$3.50	\$4.35	\$5.40	\$93.25	
	2031	2.0%	2.0%	0.800	\$70.00	\$88.80	\$82.50	\$104.65	\$84.00	\$88.15	\$77.70	\$11.35	\$47.10	\$68.05	\$104.65	\$3.75	\$3.20	\$4.05	\$3.55	\$3.50	\$4.45	\$5.50	\$95.10	
	2032	2.0%	2.0%	0.800	\$70.00	\$90.55	\$82.50	\$106.70	\$85.70	\$89.90	\$79.25	\$11.60	\$48.05	\$69.40	\$106.70	\$3.80	\$3.20	\$4.15	\$3.60	\$3.50	\$4.55	\$5.65	\$97.00	
	2033	2.0%	2.0%	0.800	\$70.00	\$92.35	\$82.50	\$108.85	\$87.40	\$91.70	\$80.80	\$11.80	\$49.00	\$70.80	\$108.85	\$3.90	\$3.20	\$4.20	\$3.70	\$3.50	\$4.60	\$5.75	\$98.95	
	2034	2.0%	2.0%	0.800	\$70.00	\$94.20	\$82.50	\$111.05	\$89.15	\$93.55	\$82.45	\$12.05	\$50.00	\$72.20	\$111.05	\$3.95	\$3.20	\$4.30	\$3.75	\$3.50	\$4.70	\$5.85	\$100.95	
	2035	2.0%	2.0%	0.800	\$70.00	\$96.10	\$82.50	\$113.25	\$90.95	\$95.40	\$84.10	\$12.30	\$51.00	\$73.65	\$113.25	\$4.05	\$3.20	\$4.40	\$3.85	\$3.50	\$4.80	\$5.95	\$102.95	
	2036	2.0%	2.0%	0.800	\$70.00	\$98.00	\$82.50	\$115.50	\$92.75	\$97.30	\$85.75	\$12.55	\$52.00	\$75.10	\$115.50	\$4.15	\$3.20	\$4.50	\$3.90	\$3.50	\$4.90	\$6.10	\$105.00	
	2037	2.0%	2.0%	0.800	\$70.00	\$100.00	\$82.50	\$117.85	\$94.60	\$99.25	\$87.50	\$12.80	\$53.05	\$76.65	\$117.85	\$4.20	\$3.20	\$4.55	\$4.00	\$3.50	\$5.00	\$6.20	\$107.10	
	2038	2.0%	2.0%	0.800	\$70.00	\$102.00	\$82.50	\$120.20	\$96.50	\$101.25	\$89.25	\$13.05	\$54.10	\$78.15	\$120.20	\$4.30	\$3.20	\$4.65	\$4.10	\$3.50	\$5.10	\$6.35	\$109.25	
	2038+	2.0%	2.0%	0.800	0.0%	2.0%	0.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	0.0%	2.0%	0.0%	2.0%	2.0%	2.0%	2.0%	

- Notes:
- All prices are in Canadian dollars except WTI and NYMEX gas which are in U.S. dollars
  - Edmonton city gate prices based on historical light oil par prices posted by the government of Alberta and Net Energy differential futures (40 Deg. API < 0.5% Sulphur)
  - Natural Gas Liquid prices are forecasted at Edmonton therefore an additional transportation cost must be included to plant gate sales point
  - 1 Mcf is equivalent to 1 mmbtu
  - Real prices listed in 2019 dollars with no escalation considered
  - Alberta gas prices, except AECO, include an average cost of service to the plant gate
  - NGL prices have been switched from a mix reference to a spec reference

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# Glossary of terms

Deloitte subscribes to the Glossary of Terms as defined by the Canadian Oil and Gas Evaluation Handbook, Appendix A.

In this report, any reference to M\$ means thousands and MM\$ means millions.



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