

CALGARY, Feb. 9, 2017 /CNW/ - (TSX:PMT) &ndash; [Perpetual Energy Inc.](#) ("Perpetual", the "Corporation" or the "Company") is pleased to release a summary of the Company's year-end 2016 reserves as reported by the independent engineering firm McDaniel and Associates Consultants Ltd. ("McDaniel"). In a drive to preserve value during the extremely low commodity price environment in 2016, Perpetual prioritized liquidity management and preservation of its balance sheet through restricted capital spending, dispositions and a focus on reducing costs and maximizing efficiencies in administration and operations. These strategic decisions resulted in an outright reduction in proved and probable reserves year over year but a material increase in the net asset value of the Company, despite lower future commodity price forecasts.

The Company successfully executed on its asset base high-grading strategy, disposing of a large percentage of its high liability, low netback mature shallow gas properties in east central and northeast Alberta (the "Shallow Gas Disposition"). This transformational transaction included the disposition of 84.5 Bcfe of proved and probable reserves assigned to these properties which had contributed 10.2 Bcfe to 2016 production prior to the closing date of October 1, 2016. With a very limited capital spending program in 2016, Perpetual's proved and probable reserves were effectively flat year over year, adjusting for the Shallow Gas Disposition.

Despite a decrease in McDaniel's forecast for both oil and natural gas prices, and the 21 percent outright reduction in total proved and probable reserves driven by the Shallow Gas Disposition, the net present value ("NPV") of Perpetual's total proved plus probable reserves, discounted at ten percent before income tax, grew by 12 percent to \$380.7 million (2015 - \$338.6 million). Perpetual's reserve-based net asset value ("NAV") (discounted at ten percent) at year-end 2016 is estimated at \$394.8 million (\$7.33 per share). This increase in shareholder value reflects the successful debt and asset retirement liability reduction initiatives completed in 2016, coupled with the strategic high grading of the Company's asset base to focus its diversified commodity portfolio in East Edson and Mannville and provide a solid platform for economic growth for shareholders.

Perpetual is also pleased to announce the partial repayment and refinancing of its financial arrangement previously secured by 840,619 of the Company's shares of [Tourmaline Oil Corp.](#) ("TOU Shares") and maturing in March 2017. Perpetual sold TOU Shares for net proceeds of \$5.7 million and reduced the loan amount outstanding to \$18.9 million and extended the maturity to August 1, 2017. The number of shares pledged as collateral was increased to 891,645 TOU Shares, establishing a floor price on these shares of \$21.14/TOU Share. Perpetual currently owns 1.67 million TOU Shares of which 1.54 million have been pledged as collateral against a total of \$36.5 million TOU Share-based financing arrangements.

## YEAR-END 2016 RESERVES

### 2016 Year-End Reserve Highlights

- Total proved and probable reserves were 61.3 MMboe at December 31, 2016, down 16.5 MMboe from year-end 2015. The Shallow Gas Disposition of 14.1 MMboe accounted for 85 percent of the reduction, while production of 5.1 MMboe was partially offset by positive additions of 2.7 MMboe. Adjusting for production and reserves related to the strategic Shallow Gas Disposition, total proved and probable reserves were effectively flat year over year.
- While proved and probable reserves were down 21 percent, the NPV10 of the proved and probable reserves increased by 12 percent at year-end 2016 to \$380.7 million, highlighting the limited reserve value associated with the disposed Shallow Gas assets, as well as, increased value in the Company's core assets at Edson and Mannville, despite lower forecast commodity prices. The increase in value of the proved and probable reserves was driven by strong well performance in Perpetual's core retained assets as well as a 20 percent reduction to future development capital ("FDC").
- East Edson represented 93 percent (2015 &ndash; 73 percent) of total proved and probable reserves at year-end 2016. Despite the drilling and completion of only one new well in 2016 and production of close to 2.7 MMboe, proved and probable reserves at East Edson were virtually flat at 56.8 MMboe. Positive technical revisions were related to stronger performance from producing wells as well as upward adjustments to both initial productivity and the production decline profile in the type curve to match historical well performance. This increase in type curve resulted in fewer wells required to fill the Company's existing infrastructure and meet firm transportation commitments in the Edson area, largely driving the reduction in FDC within McDaniel's prescribed nine-year development plan. As a result, 8.5 net undeveloped wells at East Edson were shifted from the reserve report to the Company's prospect inventory.
- Heavy oil production at Mannville of 424 Mboe was offset by upward technical revisions to the proved reserves related to the positive impact of waterflood implementation during 2016. While Mannville Heavy Oil reserves account for just 5 percent of Perpetual's total proved and probable reserves, this core area accounts for 18 percent of Perpetual's total proved developed producing reserves and 14 percent of total proved and probable developed producing reserves.
- On a commodity basis, oil and natural gas liquids ("NGL") represent 11 percent of Perpetual's total proved and probable reserves (10 percent of proved reserves) at December 31, 2016.
- Positive technical proved reserve revisions in both East Edson and Mannville Heavy Oil areas nearly offset total Company annual production of 5.1 MMboe, highlighting strong operational performance from the Company's diversifying growth assets.

- Proved reserves of 35.1 MMboe at year-end 2016 were down from 44.4 MMboe at year-end 2015, reflecting production of 5.1 MMboe and the transformative Shallow Gas Disposition which included 8.5 MMboe of proved reserves. While proved reserves were down 21 percent, the NPV10 of the proved reserves increased by 64 percent at year-end 2016 to \$210.9 million, highlighting the shareholder value created through the Shallow Gas Disposition as well as increased value in the Company's core assets at Edson and Mannville, despite lower forecast commodity prices.
- Perpetual's NAV (discounted at ten percent) at year-end 2016 is estimated at \$394.8 million (\$7.33 per share). See the detailed NAV calculation under the heading "NET ASSET VALUE".

## Reserves Disclosure

Working interest reserves included herein refer to working interest reserves before royalty deductions. Reserves information is based on an independent reserves evaluation report prepared by McDaniel with an effective date of December 31, 2016 (the "McDaniel Report"), and has been prepared in accordance with National Instrument 51-101 ("NI 51-101") using McDaniel's forecast prices and costs. Complete NI 51-101 reserves disclosure including after-tax reserve values, reserves by major property and abandonment costs will be included in Perpetual's Annual Information Form ("AIF"), when filed, and will be available on the Corporation's website at [www.perpetualenergyinc.com](http://www.perpetualenergyinc.com) and SEDAR at [www.sedar.com](http://www.sedar.com). Perpetual's reserves at December 31, 2016 are summarized below.

### Working Interest Reserves at December 31, 2016<sup>(1)</sup>

	Light and Heavy Medium Crude Oil (Mbbl)	Oil (Mbbl)	Conventional Natural Gas (MMcf)	Natural Gas Liquids (Mbbl)	Oil Equivalent (Mboe)
Proved Producing	26	1,218	37,555	486	7,989
Proved Non-Producing	-	120	2,122	23	496
Proved Undeveloped	11	335	146,778	1,802	26,611
Total Proved	37	1,672	186,455	2,311	35,096
Probable Producing	20	472	31,909	449	6,259
Probable Non-Producing	-	88	5,810	77	1,134
Probable Undeveloped	(11)	272	102,573	1,437	18,793
Total Probable	9	832	140,292	1,963	26,186
Total Proved and Probable	46	2,504	326,747	4,274	61,283

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Total proved reserves at December 31, 2016 account for 57 percent (2015 &ndash; 57 percent) of total proved and probable reserves. Proved producing reserves of 8.0 MMboe comprise 23 percent (2015 &ndash; 40 percent) of total proved reserves. Proved and probable developed reserves of 15.9 MMboe represent 26 percent (2015 &ndash; 36 percent) of total proved and probable reserves. The material decrease in the percentage of producing and developed reserves at year-end 2016 relative to the prior year reflects the transformational Shallow Gas Disposition which was comprised primarily of producing and developed reserves with very little undeveloped reserves recognized. Although the Shallow Gas Disposition assets included 15.6 MMboe of proved and probable developed reserves recognized at year-end 2015, the value of those proved and probable developed reserves was deemed to be negligible at McDaniel's year-end 2015 commodity price and operating assumptions.

## Reserves Reconciliation

# Working Interest Reserves<sup>(1)</sup>

Barrels of Oil Equivalent (Mboe)	Proved	Probable	Proved and Probable
Opening Balance, December 31, 2015	44,383	33,407	77,790
Discoveries	-	-	-
Extensions and Improved Recovery	5	(1)	5
Technical Revisions	4,338	(1,630)	2,708
Acquisitions	-	-	-
Dispositions	(8,499)	(5,590)	(14,089)
Production	(5,131)	-	(5,131)
Economic Factors	-	-	-
Closing Balance, December 31, 2016	35,096	26,186	61,283

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McDaniel recorded net positive technical revisions of 2.7 MMboe related to performance on a proved and probable basis in 2016. Positive technical revisions were primarily attributed to well performance on East Edson wells drilled in 2014 through 2016 which outperformed the proved and probable type curves used in the McDaniel 2015 reserve evaluation. Additionally, positive technical revisions were related to continued reliable performance of the Company's Mannville Heavy Oil assets.

Proved and Probable reserves from Perpetual's liquids-rich gas and NGL in East Edson area grew four percent, offsetting production of 2.7 MMboe, to represent 93 percent of Perpetual's total proved and probable reserves at year-end 2016. On a commodity basis, oil and NGL represent 11 percent of Perpetual's total proved and probable reserves (10 percent of proved), compared to 10 percent (nine percent of proved) at year-end 2015.

The table below summarizes the FDC estimated by McDaniel by play type to bring non-producing and undeveloped reserves to production.

## Future Development Capital<sup>(1)</sup>

(\$ millions)	2017	2018	2019	2020	2021	Remainder	Total
Eastern Alberta Shallow Gas	0.2	0.1	1.0	-	-	-	1.3
Mannville Heavy Oil	1.0	2.4	2.3	-	-	-	5.7
Greater Edson Wilrich	41.7	39.8	38.3	34.4	34.8	171.7	360.7
Total	42.9	42.3	41.5	34.4	34.8	171.7	367.6

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McDaniel estimates the FDC required to convert proved and probable non-producing and undeveloped reserves to proved producing reserves, to be \$367.6 million at December 31, 2016. Estimated FDC decreased by \$91.0 million, down from \$458.7 million at year-end 2015. On a proved and probable basis, FDC decreased by \$7.9 million as a result of dispositions and a further \$83.1 million related to the future development of reserves at East Edson and in the Mannville Heavy Oil area. Positive adjustments were related to modest 2016 spending as well as revised future costs to reflect reduced labor costs and improved drilling efficiencies due to changes to well design and drilling programs. As well, increased productivity and per well reserves

attributed to future drilling in the Wilrich formation at East Edson has reduced the total number of locations in the total proved plus probable development plan which encapsulates nine years to 73.7 net undeveloped locations (2015 &ndash; 82.2 net locations). These locations previously recognized in the McDaniel reserve report at year-end 2015 remain technically and economically viable and have been mechanically transferred from booked reserves to Perpetual's prospect inventory. East Edson projects are forecast by McDaniel to generate annual operating cash flow in excess of the annual FDC, making the projects self-funding.

## RESERVE LIFE INDEX ("RLI")

Perpetual's proved and probable reserves to production ratio, also referred to as reserve life index, was 15.1 years at year-end 2016 while the proved RLI was 9.3 years, based upon the 2017 production estimates in the McDaniel Report. The following table summarizes Perpetual's historical calculated RLI.

Reserve Life Index <sup>(1)</sup>					
	2016	2015	2014	2013	2012
Total Proved	9.3	7.3	7.3	5.2	6.1
Proved and Probable	15.1	11.9	11.9	8.6	11.0

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## NET PRESENT VALUE OF RESERVES SUMMARY

Perpetual's oil, natural gas and NGL reserves were evaluated by McDaniel using McDaniel's product price forecasts effective January 1, 2017 prior to provision for financial oil and natural gas price hedges, income taxes, interest, debt service charges and general and administrative expenses. The following table summarizes the NPV of funds flows from recognized reserves at January 1, 2017, assuming various discount rates. It should not be assumed that the discounted future net funds flows estimated by McDaniel represent the fair market value of the potential future production revenue of the company.

## NPV of Reserves, before income tax<sup>(1)(2)</sup>

		Discounted at						Unit Value Discounted at 10%/Year  (\$/boe)
(\$millions except as noted)	Undiscounted	5%	8%	10%	15%	20%		
Proved Producing	77.6	75.4	73.4	71.9	68.1	64.5	9.00	
Proved Non-Producing	5.0	4.1	3.6	3.4	2.9	2.5	6.81	
Proved Undeveloped	278.2	191.2	155.0	135.7	99.1	74.0	5.10	
Total Proved	360.7	270.7	232.0	210.9	170.0	140.9	6.01	
Probable Producing	39.6	32.3	28.4	26.1	21.6	18.2	4.18	
Probable Non-Producing	13.2	7.4	5.7	4.9	3.5	2.7	4.29	
Probable Undeveloped	398.3	225.9	167.1	138.8	91.5	64.0	7.39	
Total Probable	451.1	265.6	201.2	169.8	116.6	85.0	6.48	
Total Proved and Probable	811.8	536.3	433.2	380.7	286.6	225.9	6.21	

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McDaniel's estimate of net present value discounted at ten percent, ("NPV10") of Perpetual's total proved and probable reserves at year-end 2016 was \$380.7 million, up 12 percent from \$338.6 million at year-end 2015. The increase in NPV10 reflected strong recycle ratios at East Edson driven by better well performance combined with lower FDC in 2016 which offset the impact of lower forecast commodity prices. At a ten percent discount factor, total proved reserves account for 55 percent (2015 &ndash; 38 percent) of the proved and probable value. Proved and probable producing reserves represent 26 percent (2015 &ndash; 28 percent) of the total proved and probable value (discounted at ten percent).

## FAIR MARKET VALUE OF UNDEVELOPED LAND

Perpetual's independent third party estimate of the fair market value of its undeveloped acreage by region for purposes of the net asset value calculation is based on past Crown land sale activity, adjusted for tenure and other considerations. In West Central Alberta, no undeveloped land value was assigned where proved and/or probable undeveloped reserves have been booked.

### Fair Market Value of Undeveloped Land

	Net Acres Value (\$ millions)		\$/Acre
Eastern	79,527	3.8	47.94
West Central	73,465	27.5	374.79
Oil Sands	188,896	18.5	98.17
Totals	341,888	49.9	145.93

The fair market value of Perpetual's undeveloped land at year-end 2016, adjusted to remove the value of undeveloped lands with reserves assigned in West Central Alberta, is estimated by an external land consultant at \$49.9 million, a decrease of 40 percent from \$83.0 million relative to year-end 2015. The reduction in undeveloped land includes the sale of 23,680 net acres of oil sands leases in 2016 for gross proceeds of \$6.2 million and retention of a one percent gross overriding royalty on the lands.

The fair market value of undeveloped oil sands land incorporates the absolute investment to date in the ongoing bitumen extraction pilot project at Panny.

## NET ASSET VALUE

The following net asset value table shows what is normally referred to as a "produce-out" NAV calculation under which the Corporation's reserves would be produced at forecast future prices and costs. The value is a snapshot in time and is based on various assumptions including commodity prices and foreign exchange rates that vary over time. It should not be assumed that the NAV represents the fair market value of Perpetual's shares. The calculations below do not reflect the value of the Corporation's prospect inventory to the extent that the prospects are not recognized within the NI 51-101 compliant reserve assessment, except as they are valued through the estimate of the fair market value of undeveloped land.

Pre-tax NAV at December 31, 2016<sup>(1)</sup>

(\$ millions, except as noted)		Discounted at		
		Undiscounted	5%	8%
Total Proved and Probable Reserves <sup>(2)</sup>	811.8	536.3	433.2	<del>286.7</del>
TOU Shares <sup>(3)</sup>	66.3	66.3	66.3	66.3
Fair Market Value of Undeveloped Land <sup>(4)</sup>	49.9	49.9	49.9	49.9
Cash Net of Working Capital <sup>(1)</sup>	(5.4)	(5.4)	(5.4)	(5.4)
TOU Share-based Financing Arrangements <sup>(1)</sup>	(40.0)	(40.0)	(40.0)	(40.0)
Senior Notes	(60.6)	(60.6)	(60.6)	(60.6)
Hedge Book <sup>(5)</sup>	3.9	3.9	3.9	3.9
NAV	\$825.9	\$550.4	\$447.4	<del>\$390.8</del>
Shares Outstanding (million) &ndash; basic	53.861	53.861	53.861	53.861
NAV per Share (\$/Share)	15.33	10.22	8.31	<del>7.58</del>

<sup>(1)</sup> Financial information is per Perpetual's 2016 preliminary unaudited consolidated financial statements.

<sup>(2)</sup> Reserve values per McDaniel Report as at December 31, 2016.

<sup>(3)</sup> TOU Share value based on 1.85 million shares at December 31, 2016 closing price (\$35.91/share).

<sup>(4)</sup> Independent third party estimate, excludes undeveloped land in West Central Alberta with reserves assigned.

<sup>(5)</sup> Hedging adjustments as at December 31, 2016 relative to McDaniel price forecast.

The above evaluation includes future capital expenditure expectations required to bring undeveloped reserves recognized by McDaniel that meet the criteria for booking under NI 51-101 on production. Perpetual compiles annually a detailed internal estimate of the Corporation's total future asset retirement obligation based on net ownership interest in all wells, facilities and pipelines, including estimated costs to abandon the wells, facilities and pipelines and reclaim the sites, and the estimated timing of the costs to be incurred in future periods. Costs inclusive in McDaniel's reserve assessment align closely with the Company's estimate of total future asset retirement obligations, net of estimated salvage value of facilities and equipment, therefore no additional future abandonment and reclamation adjustment is included. The fair market value of undeveloped land does not reflect the value of the Company's extensive prospect inventory which is anticipated to be converted into reserves and production over time through future capital investment.

## FINDING AND DEVELOPMENT COSTS

Under NI 51-101, the methodology to be used to calculate Finding and Development ("F&D") costs includes incorporating changes in FDC required to bring the proved undeveloped and probable reserves to production. Changes in forecast FDC occur annually as a result of development activities, acquisitions and disposition activities, undeveloped reserve revisions and capital cost estimates that reflect the independent evaluator's best estimate of what it will cost to bring the proved and probable undeveloped reserves on production. In 2016, F&D costs including changes in FDC cannot be calculated as the change in FDC more than offsets 2016 exploration and development spending. Similarly, Perpetual's Finding, Development and Acquisition ("FD&A") costs cannot be calculated as the change in FDC and impact of dispositions more than offsets exploration and development spending.

## 2016 Capital Spending<sup>(1)(2)</sup>

Exploration and Development ("E&D") Capital Expenditures 2016 (\$ millions)	
West Central Liquids-Rich Gas	10.6
Mannville Heavy Oil	3.3
Shallow Gas	0.5
Panny Pilot	0.1
Total Perpetual E&D Capital Spending	14.5
Acquisitions, net of Dispositions <sup>(3)</sup>	(6.7)
Perpetual 2016 Capital Spending	7.8

<sup>(1)</sup> Financial information is per Perpetual's 2016 preliminary unaudited consolidated financial statements.

<sup>(2)</sup> Excludes corporate assets and abandonment and reclamation spending.

<sup>(3)</sup> Excludes net proceeds from the disposition of Perpetual's 30 percent partnership interest in the Warwick Gas Storage Limited Partnership ("WGS LP") during the second quarter of 2016.

## ADDITIONAL INFORMATION

Perpetual expects to release its 2016 annual audited financial statements and management's discussion and analysis ("MD&A") on or about March 9, 2017.

## Uncertainties in Estimating Reserves

There are numerous uncertainties inherent in estimating quantities of crude oil, natural gas and NGL reserves and the future funds flows attributed to such reserves. The reserve and associated funds flow information set forth above are estimates only. In general, estimates of economically recoverable crude oil, natural gas and NGL reserves and the future net funds flows therefrom are based upon a number of variable factors and assumptions, such as historical production from the properties, production rates, ultimate reserve recovery, timing and amount of capital expenditures, marketability of oil and natural gas, royalty rates, the assumed effects of regulation by governmental agencies and future operating costs, all of which may vary materially. For those reasons, estimates of the economically recoverable crude oil, NGL and natural gas reserves attributable to any particular group of properties, classification of such reserves based on risk of recovery and estimates of future net revenues associated with reserves prepared by different engineers, or by the same engineers at different times, may vary. The Company's actual production, revenues, taxes and development and operating expenditures with respect to its reserves will vary from estimates thereof and such variations could be material.

## Unaudited financial information

Certain financial and operating information included in this press release for the quarter and year-ended December 31, 2016, such as capital expenditures, FD&A costs, funds flow and net debt are based on estimated unaudited financial results for the quarter and year then ended, and are subject to the same limitations as discussed under "Forward-Looking Information". These estimated amounts may change upon the completion of audited financial statements for the year-ended December 31, 2016 and changes could be material.

## BOE Equivalents

Perpetual's aggregate proved and probable reserves are reported in barrels of oil equivalent (boe). Boe may be misleading, particularly if used in isolation. In accordance with NI 51-101 a boe conversion ratio for natural gas of 6 Mcf: 1 boe has been used, which is based on an energy equivalency conversion method primarily applicable at the burner tip and does not necessarily represent a value equivalency at the wellhead. As the value ratio between natural gas and crude oil based on the current prices of natural gas and crude oil is significantly different from the energy equivalency of 6:1, utilizing a conversion on a 6:1 basis may be misleading as an indication of value. The following abbreviations used in this news release have the meanings set forth below:

Bcfe billion cubic feet equivalent

MMboe million barrels of oil equivalent

Mboe thousand barrels of oil equivalent

#### Forward-Looking Information

Certain information regarding Perpetual in this news release including management's assessment of future plans and operations may constitute forward-looking information or statements under applicable securities laws. The forward looking information includes, without limitation, reserve estimates, potential for economic growth for shareholders; anticipated benefits of dispositions, including the Shallow Gas Disposition, anticipated amounts and allocation of capital spending; statements pertaining to cash flow levels, future development and capital efficiencies; statements regarding estimated production and timing thereof; forecast average production; completions and development activities; infrastructure expansion and construction; estimated FDC required to convert proved and probable non-producing and undeveloped reserves to proved producing reserves; anticipated effect of commodity prices on reserves; estimated net asset value; prospective oil and natural gas liquids production capability; projected realized natural gas prices and funds flow; estimated asset retirement obligations; anticipated effect of commodity prices on future development capital and reserves; commodity prices and foreign exchange rates; and gas price management. Various assumptions were used in drawing the conclusions or making the forecasts and projections contained in the forward-looking information contained in this press release, which assumptions are based on management's analysis of historical trends, experience, current conditions and expected future developments pertaining to Perpetual and the industry in which it operates as well as certain assumptions regarding the matters outlined above. Forward-looking information is based on current expectations, estimates and projections that involve a number of risks, which could cause actual results to vary and in some instances to differ materially from those anticipated by Perpetual and described in the forward-looking information contained in this press release. Undue reliance should not be placed on forward-looking information, which is not a guarantee of performance and is subject to a number of risks or uncertainties, including without limitation those described under "Risk Factors" in Perpetual's MD&A for the year-ended December 31, 2015 and those included in other reports on file with Canadian securities regulatory authorities which may be accessed through the SEDAR website ([www.sedar.com](http://www.sedar.com)) and at Perpetual's website ([www.perpetualenergyinc.com](http://www.perpetualenergyinc.com)). Readers are cautioned that the foregoing list of risk factors is not exhaustive. Forward-looking information is based on the estimates and opinions of Perpetual's management at the time the information is released and Perpetual disclaims any intent or obligation to update publicly any such forward-looking information, whether as a result of new information, future events or otherwise, other than as expressly required by applicable securities law.

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