<u>Section 16-Twp 36- Rge 5w5</u> <u>Lease #: 0512110306</u> -PNG below base Mannville to the base Basement

July 11, 2017

Taylor Hill Exploration Ltd. ("Taylor Hill") currently has a one section lease in the Garrington area located at Section 16, Township 36, Range 5w5 which is continued indefinitely under Section 15 (1) (e) due to evidence from the subsurface geological mapping which shows that these leases are capable of producing natural gas from the Elkton Formation The company believes a significant volume of recoverable gas remains and can be exploited with a recompletion.

Regional Information

Several geological intervals produce oil and gas in the *Garrington Field* area where the company's expiring lease is located. Intervals which produce within 4 miles of Taylor Hill's lease include shallow Horseshoe Canyon sands, Cretaceous Cardium sands and conglomerates, Second White Specks fractured silts, Viking Sand and Conglomerates, three Cretaceous Mannville Formations (Ellerslie Member sands (including the Basal Quartz), Ostracod and Glauconitic Sandstones), Jurassic sands including Rock Creek, Mississippian Elkton and finally Devonian Formation (Swan Hills).

Mississippian Turner Valley Fm. (Elkton Member) Geology

The Mississippian Turner Valley (Elkton Member) consists of dolomite and to a lesser extent limestone which is typically fine to coarse crystalline. The zone is at a depth of 2639-2652 m in the 100/09-16-36-5w5 well on the Cross Section. Above, the Turner Valley (Elkton Member) is unconformably overlain by the sands, silts and limestone units of the Jurassic.

The Elkton dolomites are the uppermost units within the Mississippian in the immediate area. Pre-Jurassic and pre-Cretaceous erosion has occurred creating Paleovalleys which have removed the Elkton cutting down into the Mississippian Formation. When present the Elkton thickness ranges between 7.5 to 16 meters. All units within the Mississippian dip to the southwest regionally. The Jurassic sands silts and limestones have been deposited on this paleosurface. Oil and gas is trapped within erosional "salients" where migration of hydrocarbon has occurred updip through the formation until the migration was terminated by the removal of the porous carbonates and lateral replacement by tight silts, shales and limestones within the Jurassic. The pool which exists adjacent to, and underlying, Taylor Hill's lease is the overlying the Garrington Commingled Pool 008. This pool is commingled Elkton and Jurassic sandstones which appear to be in both Rock Creek and Nordegg Member sands within the Fernie Formation.

The porosity cut off for sands in the Turner Valley (Elkton Mbr) is typically 3% on the Density log which has been indicated in red on the Cross Section. Pay zones in the Elkton has porosity over between 6.0 to 15.0% and resistivity of 40 to 2000 ohms. A gas/water contact is not apparent in the Elkton pool in the immediate area.

Several wells produce, or have produced, from the Elkton interval adjacent to, or on, the Taylor Hill lease. The nearest well currently producing is 346.1 meters south of section 16 at 100/16-9-36-05w5/00. The well is producing approximately 9-16-36-5w5/003.0 10 M3 per day and has produced 868.7 e6m3 since October 1986. The initial rate was between 111 to 315 e3m3/d and initial reservoir pressure of 24,530 kpa. Other adjacent wells in the Garrington Commingled Pool 008 are located at 100/14-10-36-

5w5/00 which produced 647,220 e3m3 and in April 2017 was producing at a rate 1.7 e3m3, 100/16-9-36-5w5/00 which produced 868,683 e3m3 and in April 2017 was producing at a rate 3.0 e3m3 and 100/7-15-36-5w5/100 which produced 271,880 e3m3 and in April 2017 was producing at a rate 7.4 e3m3. All wells are immediately adjacent to Taylor Hill's lease.

The well on Taylor Hill's lease (100/9-16-36-5w5/00) has a clean 13.0 meter thick dolomite lithology with an average 10% density porosity in the 11.5 meters of gas pay. Overlying the Elkton pay zone a thick unit of Jurassic sands exist. Three sands interval within the sequence above had gas pay and two were completed at the same time as the Elkton via perforations in a 19 meter interval between 2629-2648 meters. The rate when recompleted uphole into a very thick (8.0 Meter) Cretaceous Ellerslie sand was 30.7 e3m3. The well was simply completed in order to produce a sand which not present in other wellbores <u>not</u> because the well had depleted. In fact pressure plots indicate that between 203.8 e3m3 (7.2 Bcf) "worst" case and 764.6 e3m3 (27 Bcf) "optimistic" case remains in the reservoir. (see Pressure Listing exhibit)

Conclusion

The geological mapping demonstrates the presence of commercial natural gas in the Missippian Elkton Member which are being produced in wells adjacent to Taylor Hill's expiring lease. Currently four adjacent wells are producing gas from these reservoirs at commercial rates. (6-8-36-5w5, 14-10-36-5w5, 16-9-36-5w5 and 7-15-36-5w5). The company plans to pursue recompletion back to the originally produced intervals through re-entry of the 9-16-36-5w5 wellbore. For this reason Taylor Hill Exploration Ltd. requests that Lease No. *0512110306* be continued under Section 15 (1) (e) based on geological mapping demonstrating productive capability from the Base of the Mannville to the base Turner Valley Fm (Elkton).

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Taylor Hill Exploration Ltd. is authorized to engage in the practice of Geoscience in Alberta under APEGA Permit to Practice # P10149.

Date	<u>Well</u>	<u>Pressure</u>	<u>Zone</u>	Shut In Time	Cum Production	Cum Production
		(kpa)		(Hrs)	(Bcf)	(e9m3)
	Initial pressure	24,530	Elkton		0	0
	Initial pressure	23,550	Nordegg		0	0
22-Aug-84	6-8-36-5w5	19,198	Nordegg	Ş	0.07	
18-May-84	7-15-36-5w5	24,315	Elkton	72	0.07	
6-Sep-84	6-8-36-5w5	22,048	Nordegg	272	0.07	
4-Mar-85	16-9-36-5w5	24,712	Elkton	230	0.07	
19-Oct-85	14-10-36-5w5	24,278	Elkton	263	0.08	
19-Jun-88	7-15-36-5w5	22,730	Elkton	?	6.41	
9-Feb-89	9-16-36-5w5	20,721	Nordegg DST		8.99	
8-Mar-89	14-10-36-5w5	20,799	Elkton	?	9.53	
29-May-89	16-9-36-5w5	20,174	Elkton	234	10.54	
2-Nov-89	9-16-36-5w5	19,044	Elkton/ Nordegg	?	15.05	
9-Jun-90	7-15-36-5w5	15,941	Elkton	251	23.09	
6-Jun-91	9-16-36-5w5	11,835	Elkton/ Nordegg	?	36.3	
28-Jul-92	9-16-36-5w5	8,297	Elkton/ Nordegg	49	44.09	
28-Jul-92	16-9-36-5w5	8,307	Elkton	52	45.58	
30-Jun-94	16-9-36-5w5	4,608	Elkton	146	57.54	
31-May-17	Current Cumulative				75.65	

