

## PURPOSE, NEED, PROPOSED FACILITIES & TIMING

### Purpose, Need & Proposed Facilities

1. Enbridge Gas Distribution Inc. (“Enbridge”) is proposing to drill two horizontal gas storage wells and two observation wells in the Dow Moore Storage Pool (“DMSP”) in the Geographical Township of Moore, in the County of Lambton (the “Project”). The DMSP is a designated storage area as defined in s. 36.1(1)(a) of the Ontario Energy Board Act. Attachment 1 to this Exhibit shows the geographical location of the wells.

### *Horizontal Wells – TD28H and TD29H*

2. The drilling is a ‘like for like’ replacement and will not result in an increase in storage capacity or an increase in deliverability. The two horizontal gas storage wells are needed to replace 60% of the deliverability lost in the DMSP due to the abandonment of 5 gas storage wells, the abandonment of 1 observation well and the conversion of 1 gas storage well to an observation well in 2017. The two new horizontal wells will form part of regulated storage operations. The abandoned and converted wells were/are a part of regulated storage operations.
3. The wells abandoned in 2017 include: TD 7 (Obs), TD 8, TD 9, TD 21 & TD 22 (Lot 21, Con.12, Moore Twp.) and TD 12 (Lot 22, Con. 12, Moore Twp.). The storage well converted to observation well in 2017 is TD 25 (Lot 21, Con. 12, Moore Twp.). Attachment 2 shows the location of the abandoned wells and the location of the proposed wells. The two new horizontal wells have also been designed to take into consideration the deliverability lost when TD 16, Moore 4-23-XII was abandoned in 2013 and TD 23, Moore 2-21-XII was abandoned in 2015.

*Observation Wells – TD26 and TD27*

4. The observation wells are required pursuant to Section 7.5 of CSA Z341 – Storage of hydrocarbons in underground formations<sup>1</sup>. The observation wells will monitor gas content and pressure in the underground storage area which will assist with the continued safe and reliable delivery of natural gas to existing and future customers. The observation wells will form part of regulated storage operations.
  
5. The TD26 observation well will be drilled to monitor the low-permeability A-1 Formation on the outer edge of the Dow Moore Reef which is adjacent to the Guelph Formation. Attachment 3 shows the juxtaposition of the A-1 and Guelph Formations and how they interrelate. Attachment 3 also shows the position of the observation wells in relation to the A-1 Formation and the Guelph Formation. The Guelph Formation is the geological horizon approximately 750 meters below surface that is comprised of highly permeable and porous dolomitic limestones. The Guelph Formation in the Dow Moore Pool is an ancient pinnacle reef that was formed 425 million years ago in the Silurian Era. The storage reefs were overlain by impermeable Anhydrite and Carbonate layers which completely seals the reefs making them able to hold gas pressure.
  
6. The TD 27 observation well is required to monitor the gas content and pressure in the Guelph Formation. The original Guelph Formation observation well (TD 7) was abandoned in 2017 and an injection/withdrawal well (TD 25) was converted to an

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<sup>1</sup> "Observation wells shall be incorporated into the storage facility and shall monitor pressures and the presence of hydrocarbons within the storage zone and associated permeable zones. The location and design of the observation well shall take into consideration

- (a) locations within the storage zone that are suitable for monitoring reservoir pressures;
- (b) potential migratory paths from the reservoir to another formation;
- (c) fluid interface monitoring at the location of the spill point;
- (d) permeable zones and stratigraphic traps above the storage zone; and
- (e) low-permeability zones or formations adjacent to and in communication with the storage zone."

observation well. During the last injection/withdrawal cycle in 2017/2018, it was discovered that the pressure readings given by TD 25, were lagging behind the actual pressure in the storage formation. A geological review was undertaken and it was determined that an observation well located near the former TD 7 location would provide the most optimum location for a new Guelph Formation observation well.

### Timing

7. The drilling of wells TD 26, TD 28H and TD 29H was originally proposed to occur in the first half of 2018. A drilling application was submitted to MNRF November 28, 2017 and the Ontario Energy Board (the "Board") on November 29, 2017. Enbridge was informed by the Board on January 19, 2018 that more information was required for the Board to process the application. The revised application could not be submitted in time to allow the drilling of the wells in early 2018. The Dow Moore Storage Pool must be operating at an appropriately low pressure to allow the wells to be drilled safely. Enbridge storage operations can only provide a certain window in which the reef can be at an appropriately low pressure. For this reason it was decided to drill the wells in the following year. As discussed above, during 2018, the need for a Guelph observation well was identified when it was determined that TD25 was not providing accurate pressure measurements. Ms. McConnell of Enbridge met with Mr. Jug Manocha of the MNRF on July 10, 2018 and explained the events that transpired with respect to delaying the drilling of the wells and the additional observation well. No technical concerns were raised during this meeting.
8. The Project will commence with the construction of temporary all-weather drilling pads. These drilling pads will be approximately 75m x 90m. The pads will be constructed in compliance with the Environmental Screening Reports completed by Stantec which can be found at Exhibit C, Tab 1, Schedule 1. Upon completion of

drilling activities, permanent access laneways will remain and the remainder of the land will be restored and any drainage tile issues will be resolved.

9. The drilling of the wells will occur from January 2019 through to the end of June 2019. Drilling is scheduled to occur when there will be no injection or withdrawal operations. The drilling work must occur in this time frame to allow the wells to be safely drilled when the reservoir is at a low pressure. The drilling will not cause any disruption to service from the DMSP.

#### Storage Pressures & Deliverability

10. The maximum operating pressure and working capacity at the DMSP will not change as a result of the drilling operations.
11. Enbridge experience to date indicates that 1 horizontal well will replace the deliverability of approximately 3.5 vertical wells; therefore, 2 horizontal wells should replace the deliverability lost through the abandonment of gas storage wells and the conversion of a gas storage well to an observation well. As a result it is anticipated that deliverability from the DMSP will be restored to a deliverability level that was available prior to the aforementioned well abandonments and conversion.
12. The observation wells are being drilled to comply with CSA Z341 and to monitor gas content and pressure in the A-1 formation adjacent to the Guelph reef formation and the Guelph reef formation. The observation wells will also assist with the continued safe and reliable delivery of natural gas to existing and future customers.