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May 11, 2020

VIA EMAIL and COURIER

Ms. Christine Long
Board Secretary
Ontario Energy Board
2300 Yonge Street, 27th Floor
Toronto, ON M4P 1E4

Dear Ms. Long:

**Re: Enbridge Gas Inc. (“Enbridge Gas”)
Ontario Energy Board File: EB-2020-0074
2020 Storage Enhancement – Interrogatory Responses**

In accordance with Procedural Order No. 1, enclosed please find Interrogatory Responses of Enbridge Gas in the above noted proceeding.

Please contact the undersigned if you have any questions.

Yours truly,

(Original Signed)

Stephanie Allman
Regulatory Coordinator

ENBRIDGE GAS INC.
Answer to Interrogatory from
Ministry of Natural Resources and Forestry (MNRF)

Reference:

In the Applicant's **pre-filed evidence, at page 4, item 2**, the Applicant has indicated that they wish to increase delta pressuring to a max of 17.2 kPa/m (0.76 psi/ft) which is allowed in CSA Z341.1–18.

Question(s):

Please confirm that the Applicant intends to follow the current CSA Z341.1–18 standard and going forward intends to adopt any future revisions to CSA Z341.1.

Response:

Enbridge Gas will comply with the current CSA Z341.1-18 standard and will adopt any standards arising from future revisions to CSA Z341.1.

ENBRIDGE GAS INC.
Answer to Interrogatory from
Ministry of Natural Resources and Forestry (MNRF)

Reference:

In the Applicant's **pre-filed evidence, at page 4, item 3** the Applicant has indicated that they will install new well heads and emergency shut down ("ESD") valves. At **page 11, item 17**, the Applicant indicates it intends to install ESD valves on each natural gas storage well in the subject pools.

Question(s):

- a) Why the installation of these new works?
- b) Was it further to a risk assessment related to same?
- c) Does the Applicant intend to install ESD valves on all storage injection/withdrawal wells for all future projects?
- d) Will a new Form 7 (Well Completion) from the Provincial Standards under the *Oil, Gas and Salt Resources Act* be filed with the Ministry of Natural Resources and Forestry with respect to these works?

Response:

- a) The wellheads are being upgraded to meet the current CSA Z341.1 Standard. The ESD valves, while not being required by CSA Z341, are being added to improve the operational safety of the storage injection/withdrawal wells.
- b) The ESDs are not being installed as the result of a risk assessment. Enbridge Gas has chosen, in accordance with its own policies, to install ESD valves for pressure elevation projects, even though this is not a requirement of the CSA Z341.1 Standard.
- c) At this time, Enbridge Gas plans to install ESD valves on all storage injection/withdrawal wells in future pressure elevation projects.
- d) Enbridge Gas will submit Well Completion Forms (Form 7) in compliance with Section 13.4 of the Provincial Standards.

ENBRIDGE GAS INC.
Answer to Interrogatory from
Ministry of Natural Resources and Forestry (MNRF)

Reference:

In the Applicant's **pre-filed evidence, at page 11, item 18**, the Applicant indicates that all above-ground well and piping components have been reviewed to ensure compliance with "all codes and standards" at the increased operating pressure.

Question(s):

a) Please specify the codes and standards that are referred to above.

Response:

The above-ground wellhead components were reviewed for compliance with the CSA Z341 Standard. The above-ground piping components were reviewed for compliance with the CSA Z662-15 Standard as adopted by the Technical Standards & Safety Authority through Ontario Regulation 210/01.

ENBRIDGE GAS INC.
Answer to Interrogatory from
Ministry of Natural Resources and Forestry (MNRF)

Reference:

In the Applicant's **pre-filed evidence, at page 5, item 5** a request is made to include the following as a condition of approval to the application:

Enbridge Gas shall not operate the storage pool above a pressure representing a pressure gradient of 17.2 kPa/m (0.76 psi/ft) of depth without leave of the OEB. Enbridge Gas shall provide summaries of an engineering study and geological study in support of any leave applications and a formal confirmation from the Ministry of Natural Resources and Forestry that operating the pool at the increased operating pressure complies with the requirements of the CSA Z341 standard.

Further, at pages 266, 270 and 274, in model evaluations concerning each of the three reservoirs pressure increases were considered likely to be acceptable at the 0.8 psi/ft threshold.

Question(s):

- a) Are there any plans to further increase to a higher gradient than 0.76 psi/ft?
- b) Does the proposed condition above intend that full application to the OEB be made for approval of any future increased gradient beyond 0.76 psi/ft, involving the potential for a hearing with intervenors?
- c) Does the applicant confirm it is its responsibility to comply with the requirements of the CSA Z341 standard?

Response:

- a) There are no plans to elevate the Black Creek, Coveny and Wilkesport Pools above the 0.76 psi/ft gradient. Any future increase in gradient will need to satisfy technical and economic feasibility.
- b) Enbridge Gas will apply to the OEB for any future gradient increase beyond 0.76 psi/ft. Also, please see Exhibit I.STAFF.2.

- c) Enbridge Gas confirms that it is its responsibility to comply with the CSA Z341 Standard.

ENBRIDGE GAS INC.
Answer to Interrogatory from
Ministry of Natural Resources and Forestry (MNRF)

Reference:

In the Applicant's pre-filed evidence, at pages 264, 268 and 272, the Applicant indicates that the "What If" analyses conducted for each of the pools were done within the scope of the CSA Z341.1-18 regulation. In the Applicant's prefiled evidence, at pages 263 and 271: Regarding the assessment of neighbouring activities, the Applicant concludes that no impact to the integrity of the storage facility or storage zone have been caused by neighbouring wells and subsurface activities.

Question(s):

- a) Was any consideration given to other regulatory public safety and environmental requirements (e.g., under the *Occupational Health and Safety Act* or under the *Environmental Protection Act*)?
- b) Has the proposed increase in pressure:
 - i. been considered from a risk perspective with respect to the impacts of uncontrolled surface or subsurface gas release to the environment and public health and safety?
 - ii. involved an assessment of neighbouring activities?
 - iii. considered potential impacts from potential changes to activities in surrounding storage pools?

Response:

- a) The "What-If" analysis was done in compliance with Section 5.1 of CSA Z341. While not specifically reviewed in reference to these statutes, the safety of the workers, the public and the environment is always considered during the "What-If" sessions. During the sessions, each "What-If" was evaluated for the consequences of the "What-If" and the safeguards that Enbridge Gas has in place in order to mitigate the consequences. Risk ranking is also performed in the sessions for each "What-If". If the safeguards are found to be insufficient, an action item is created for Enbridge Gas to complete. In addition, the analysis includes an examination of public and worker exposure potential in the event of an ignited incident. The analysis also incorporates the findings of the Neighbouring Assessment and any concerns identified in the Neighbouring Assessment are examined in the "What-If" sessions.

Enbridge Gas has many programs outside of the “What-If” analysis that also address these concerns. For example, the Environmental Screening Report (ESR) was completed for the project and includes identification of physical, natural and socio-economic features and the potential effects of the project on these features. Part of this analysis included an Archaeological Assessment and Species at Risk Assessment. The ESR provided guidance to operate the project in a manner that protects the environment and manages potential effects through the implementation of the proposed mitigation outlined in the ESR.

b)

- i. In preparation for the project Enbridge Gas completed a review of all active wells within each of the pools. This review identified the wellhead upgrades that have been included in this project. Based on the construction of the wells and subsequent integrity assessments, Enbridge Gas is confident in the ability of the wells to prevent any subsurface release of gas.

Enbridge Gas also reviewed active and abandoned wells within 1km of the base gas of each of the pools. A well assessment was completed for each well and no concerns were identified concerning the potential for these wells to act as a conduit for the movement of gas from the storage pools into the overlying formations or to the surface. These assessments considered the proximity of nearby residences, roadways and other neighbouring facilities that may be impacted by an uncontrolled surface or subsurface gas release. The quality of these abandonments and the potential for communication was deemed to be acceptable and would not be impacted by the increased operating pressure of each of these storage pools. The risk to the environment and public health and safety did not necessitate any additional work to be done on these abandoned wells.

- ii. A Neighbouring Assessment was done in compliance with Section 5.2 of CSA Z341.
- iii. The proximity and operating characteristics were reviewed as part of the Neighbouring Assessment and “What-if” analysis. Any nearby storage pools are owned and operated by Enbridge Gas and are continuously monitored.

ENBRIDGE GAS INC.
Answer to Interrogatory from
Ministry of Natural Resources and Forestry (MNRF)

Reference:

In the Applicant's pre-filed evidence, at page 13, item 25; page 14, item 32; page 16, item 39: Regarding caprock integrity, reference is made to Geofirma Engineering studies that "incorporated data from geo-mechanical and regional in situ tests completed on the reservoir and caprock formations".

Question(s):

Please specify the studies and tests that are referred to above.

Response:

The reports utilized include a large number of laboratory tests on core samples of caprock, a number of in-situ tests in caprock formations and earlier geological, engineering and modeling studies. The list of studies is categorized into three groups:

1. Laboratory Testing of Caprock
2. In-situ Testing of Caprock
3. Previous Studies and Reports

The list of studies is provided in Attachment 1 to this response.

1. Laboratory Testing of Caprock:

AGAT, 2000. Threshold Pressure and Mechanical Properties Study Union Mandaumin #4 & Bluewater #1 Wells Silurian Formation, AGAT Laboratories, Calgary, Alberta.
AGAT, 2001. Threshold Pressure and Mechanical Properties Study Union Bickford 27, Union Terminus 12, Union Rosedale 9, Union Bentpath 11, Union Dawn 156, Union Dawn 183 & Union Dawn 139 Wells, AGAT Laboratories, Calgary, AB.
AGAT Laboratories, 2005. Threshold Pressure – Airport No.2 Sarnia -33-FLH A2 Anhydrite Formation. AGAT Laboratories Ltd, Calgary, Alberta.
AGAT Laboratories, 2007a. Threshold Pressure Test Results - ICG2 Enniskillen 4-22-II Oil Springs East Storage Pool. AGAT Laboratories Ltd.
AGAT Laboratories, 2007b. Threshold Pressure Test Results – Well St.Clair 1, Sombra 8-B-XI A2 Shale Formation. Calgary, Alberta.
AGAT Laboratories, 2007c. Threshold Pressure Test Results – Wells- Eddy's Mills#1, Dawn 3-32-VIII, ICG2 Enniskillen 4-22-II, Union Enniskillen No.60, and Union Payne No.15. Calgary, Alberta.
Core Laboratories, 1966. Core Analysis – Imp Sombra 4-14-13. Core Laboratories Canada Ltd., Calgary, Alberta.
Core Laboratories. 1988. Core Analysis Results TEC DOW #4 6-21-XII. File Number 52131-88-0548. Core Laboratories, Calgary, AB.
Core Laboratories, 1989. Core Analysis – Union Enniskillen #54. Core Laboratories Canada Ltd., Calgary, Alberta.
Core Laboratories, 1990. ICG #2 Enniskillen 4-22-II A-2 and Guelph Formations Ontario. Core Laboratories Canada Ltd., Calgary, Alberta
Geofirma, 2014a. Union Bentpath 13 – Lab Geomechanical Strength Testing of UB.13 Core, UG-TR-13-02, Geofirma Engineering Ltd., Ottawa, Ontario.
Geofirma, 2014c. Union Bentpath 13 – Lab Geochemical Testing, UG-TR-13-04, Geofirma Engineering Ltd., Ottawa, Ontario.
Geofirma, 2018. Laboratory Geomechanical and Petrophysical Testing of UD.288 Core. Geofirma Engineering Ltd., Ottawa, Ontario.
Hycal Energy Research Laboratories, 1999. Union Gas – Bentpath East Caprock Study. Hycal Energy Research Laboratories Ltd., Calgary, Alberta.
Hycal Energy Research Laboratories, 1999. Union Gas – Booth Creek Caprock Study. Hycal Energy Research Laboratories Ltd., Calgary, Alberta.
Hycal Energy Research Laboratories, 2009. Union Gas Limited Bentpath East Storage Pool Well #1 and #2 Caprock Study. Hycal Energy Research Laboratories Ltd., Calgary, Alberta.
Hycal Energy Research Laboratories, 2009. Union Gas Limited Oil City Storage Pool Union Oil City 1 (Enniskillen -17-V Well) Caprock Study. Hycal Energy Research Laboratories Ltd., Calgary, Alberta.
Hycal Energy Research Laboratories, 2009. Union Gas Limited Bluewater Storage Pool Union Bluewater 1, Sarnia 5-3-II Well Caprock Study. Hycal Energy Research Laboratories Ltd., Calgary, Alberta.
Northwest Labs, 1998. Core Analysis Report – Union Bentpath East 1 Dawn 2-26-V1. Northwest Labs, Calgary, Alberta.
TerraTek. 2006. Failure Characterization of Rotary Sidewall Plugs from Various Wells – Union Gas Storage Program. TerraTek, Salt Lake City, Utah.
TerraTek. 2007. Unconfined and Triaxial Compression Testing for Failure Characterization of: Well UD.282, Dawn 156 Pool, and Well SC.1, St Clair Pool. TerraTek, Weatherford, 2011. Tecumseh Storage Facilities, Caprock Permeability and Rock Mechanics Study (Weatherford Labs File #: 48475). Weatherford Laboratories, Weatherford, 2012. Enbridge Gas Distribution Inc. Caprock Permeability and Rock Mechanics Study. Weatherford Laboratories, Calgary, Alberta.

2. In-situ Testing of Caprock:

Enhanced Well Stimulation. 2007. Comments Concerning Formation Breakdown Tests - Union Gas Ltd. D156 High-Deliverability Project, Enhanced Well Stimulator
Geofirma, 2014b. Union Bentpath 13 – Westbay Installation and Monitoring, UG-TR-13-03, Geofirma Engineering Ltd., Ottawa, Ontario.
Hydro Resolutions, 2013. Analysis of UB.13 Pulse Tests. Hydro Resolutions LLC, Rio Rancho, New Mexico.
Market Hub Partners. 2007. Airport 1 Micro Fracture Test, Market Hub Partners, Ontario, Canada.

3. Previous Studies and Reports:

Calder, N, J Avis, P Humphreys, F King, P Suckling and R Walsh. 2009. Postclosure Safety Assessment (V1): Gas Modeling, NWMO DGR-TR-2009-07. Nuclear Waste Management Organization, Toronto, Ontario.
Enbridge, 2019. Wilkesport Pool Geologic and Engineering Report, Underground Storage Department, Enbridge Gas Inc, Chatham. Ontario.
Enbridge, 2019. Black Creek Pool Geologic and Engineering Report, Underground Storage Department, Enbridge Gas Inc, Chatham. Ontario.
Enbridge, 2019. Coveny Pool Geologic and Engineering Report, Underground Storage Department, Enbridge Gas Inc, Chatham. Ontario.
Gill, D. 1985. Depositional Facies of Middle Silurian (Niagaran) Pinnacle Reefs, Belle River Mills Gas Field, Michigan Basin, Southeastern Michigan. In: Roehl P.O., Choquette P.W. (eds) Carbonate Petroleum Reservoirs, pp. 121-140. Springer, New York, NY.
Hobbs, MY, SK Frape, O. Shouakar-Stash, LR Kennell. 2008. Phase I Regional Hydrogeochemistry, Southern Ontario, OPG 00216-REP-01300-00006-R0, Ontario Power Generation Inc., Toronto, Ontario.
Lam, T and S. Usher. 2011. Regional Geomechanics – Southern Ontario, NWMO DGR-TR-2011-13, Nuclear Waste Management Organisation, Toronto, Ontario.
Raven, KG, DW Lafleur, RA Sweezy. 1990. Monitoring well into abandoned deep-well disposal formations at Sarnia, Ontario., Canadian Geotechnical Journal, 27:
Raven, KG, D McCreath, R Jackson, I Clark, D Heagle, S Sterling, M Melaney. 2011. Descriptive Geosphere Site Model, OPG’s Deep Geologic Repository for Low and Intermediate Level Waste, NWMO DGR-TR-2011-24, Nuclear Waste Management Organisation, Toronto, Ontario.
Sproule. 2012. Enbridge Gas Storage Integrated Reservoir Study – Phase III Volume 3 Black Creek (December 2012), Sproule Associates Limited, Calgary, AB.
Sproule. 2012. Enbridge Gas Storage Integrated Reservoir Study – Phase III Volume 1 Coveny (December 2012), Sproule Associates Limited, Calgary, AB.
Sproule. 2012. Enbridge Gas Storage Integrated Reservoir Study – Phase II Volume 4 Kimball-Colinville, Corunna-Seckerton, Ladysmith and Wilkesport (May 2011), Sproule Associates Limited, Calgary, AB.
Sproule. 2013. Wilkesport Gas Storage Update (December 2013), Sproule Associates Limited, Calgary, AB.
Terralog, 2006. Geomechanical Analysis for Delta pressure Operations at Five Union Gas Storage Fields in Southwestern Ontario. Terralog Technologies USA Inc., Union Gas, 2007. Engineering Review Delta Pressure - Enniskillen 28 Pool. Union Gas Ltd., Sarnia, Ontario.
Union Gas, 2008. Engineering Review Delta Pressure – Dow A Pool. Union Gas Ltd., Sarnia, Ontario.
Union Gas, 2008. Engineering Review Delta Pressure – Oil Springs East Pool. Union Gas Ltd., Sarnia, Ontario.
Union Gas, 2008. Engineering Review Delta Pressure – Enniskillen 28 Pool. Union Gas Ltd., Sarnia, Ontario.
Union Gas, 2009. Engineering Review Delta Pressure - BentPath East Pool. Union Gas Ltd., Sarnia, Ontario.
Union Gas, 2009. Engineering Review Delta Pressure - Oil City Pool. Union Gas Ltd., Sarnia, Ontario.
Union Gas, 2009. Engineering Review Delta Pressure – Bluewater Pool. Union Gas Ltd., Sarnia, Ontario.
Union Gas, 2015. Dawn 59-85 Pool – Geologic and Engineering Report. Union Gas Ltd., Sarnia, Ontario.

ENBRIDGE GAS INC.
Answer to Interrogatory from
Ministry of Natural Resources and Forestry (MNRF)

Reference:

In the Applicant's pre-filed evidence, at page 75, item 2.2.2; Letter to the Ministry of the Environment, Conservation and Parks ("MECP") in Appendix (at page 96): Regarding the Snake Mitigation Plan for Wilkesport and Coveny Pools, the letter to MECP dated December 3, 2019 outlines the proposed Snake Mitigation Plan and asks for MECP "confirmation" as to appropriateness.

Question(s):

- a) What, if any, response has been received from MECP further to the December 3, 2019 letter?

Response:

- a) Please see Exhibit I.STAFF.4.

ENBRIDGE GAS INC.
Answer to Interrogatory from
Ministry of Natural Resources and Forestry (MNRF)

Reference:

In the Applicant's pre-filed evidence, at page 243, item 4: Regarding the well work schedule, there is an indication that "the well work must take place between April and September 2019 to ensure that there will be no disruption to service to ensure that the pressure will be suitable to safely complete the well work."

Question(s):

- a) Please confirm the typo -- we assume the reference to "2019" should read "2020".
- b) Please confirm what impact the COVID-19 pandemic, including the Provincial Declaration of Emergency (O.Reg. 50/20) and related Emergency Orders under the *Emergency Management and Civil Protection Act*, are expected to have on the timing referred to above for the accomplishment of these or other work-related steps related to this proposal.

Response:

- a) Confirmed. It should read 2020.
- b) At the present time, we do not expect there to be any significant impact due to the COVID-19 pandemic. Construction activities will be conducted taking into account necessary precautions during the pandemic.

ENBRIDGE GAS INC.
Answer to Interrogatory from
Ministry of Natural Resources and Forestry (MNRF)

Reference:

In the Applicant's prefiled evidence, there doesn't appear to be any reference to an updated Emergency Response Plan.

Question(s):

- a) Have the ERP(s) that exist for the subject pools been reviewed and updated for the purposes of this application?
- b) If yes, has this update included a consideration of provisions addressing notification of neighbours, the public and public agencies in the event of an emergency (e.g., has contact information been updated)?

Response:

- a) Enbridge Gas has reviewed the ERP and this Project does not trigger any requirement to update the ERP. In addition, Enbridge Gas reviews and updates the ERP annually with any new information or changes.
- b) The ERP is reviewed and updated annually with any new information or changes. The ERP contains the notification protocols and contact information. Contact information is updated regularly.

ENBRIDGE GAS INC.
Answer to Interrogatory from
OEB Staff (STAFF)

Reference:

Exhibit A, Tab 2, Schedule 1 Exhibit B,
Tab 1, Schedule 1

Preamble:

Enbridge Gas Inc. (Enbridge Gas) is applying for leave to vary the maximum operating pressures (MOPs) of its Black Creek, Coveny and Wilkesport natural gas storage pools (Pools). The stated purpose of the 2020 Storage Enhancement Project (Project) is to meet the growing market demand for incremental storage space. The additional capacity would be used to meet the requirements of Enbridge Gas' storage service customers and will be sold at non-utility, market-based prices.

The Project includes the installation of wellhead upgrades and the installation of emergency shut-down valves on each of the natural gas storage wells within the Pools.

Question(s):

- a) Please provide the split of the current capacity of the Pools between regulated and unregulated storage customers.
- b) Please confirm that the proposed facilities (i.e., upgraded wellheads and new emergency shutdown valves) will not benefit regulated customers. If this cannot be confirmed, please explain.
- c) If regulated customers will benefit from the proposed facilities, please provide a complete breakdown of all capital costs associated with the Project. Also, provide an explanation for why all costs are proposed to be allocated to unregulated storage operations.
- d) Please provide a summary of the forecast long-term demand in Ontario for regulated and unregulated storage space and deliverability annually, starting in 2020. Please make reference to any studies or other sources of information used for the forecast.

Response:

- a) The current capacity of the Black Creek pool is 100% regulated. The Coveny pool is 96% regulated and 4% unregulated. The Wilkesport pool is 96% regulated and 4% unregulated.
- b) Confirmed. The proposed facilities will not benefit regulated customers.
- c) Please see response to part b). All costs are proposed to be allocated to unregulated storage operations as the benefits from the proposed facilities will be entirely to unregulated storage operations.
- d) Enbridge Gas's regulated customer storage space forecast for the 2019/20 Gas Year to the 2023/24 Gas Year can be found in the Company's 2020 Annual Update to 5 Year Gas Supply Plan, EB-2020-0135, page 36, Table 4, filed on May 1, 2020.

	Storage Space Forecast (PJ)				
	2019/20	2020/21	2021/22	2022/23	2023/24
Regulated – EGD Rate Zone	126.1	126.1	126.1	126.1	126.1
Regulated – UG Rate Zone	97.1	96.9	98.0	99.1	99.1
Regulated – Total	223.2	223.0	224.1	225.2	225.2

	Deliverability (PJ/D)				
	2019/20	2020/21	2021/22	2022/23	2023/24
Regulated – EDG Rate Zone (1)	1.9	1.9	1.9	1.9	1.9
Regulated – UG Rate Zone	2.1	2.1	2.2	2.3	2.3
Total Regulated	3.9	4.0	4.1	4.2	4.2

1) Regulated deliverability capacity, EB-2017-0086, Exhibit D1, Tab 2, Schedule 9, Page 2

In 2019/20, 2.1 PJ of unregulated deliverability was sold. Enbridge Gas does not forecast unregulated storage deliverability demands. Enbridge Gas is currently fully contracted and has historically been fully contract with respect to storage space and deliverability. In our most recent open season, the demand for storage space exceeded space awarded by a ratio of 6:1.

ENBRIDGE GAS INC.
Answer to Interrogatory from
OEB Staff (STAFF)

Reference:

Exhibit A, Tab 2, Schedule 1, page 2

Preamble:

The OEB Act permits the OEB, when making an order, to “impose such conditions as it considers proper.”¹ In its application, Enbridge Gas requests that the following condition be placed on the Pools:

Enbridge Gas shall not operate the storage pool above a pressure representing a pressure gradient of 17.2 kPa/m (0.76 psi/ft) of depth without leave of the OEB. Enbridge Gas shall provide summaries of an engineering study and geological study in support of any leave applications and a formal confirmation from the Ministry of Natural Resources and Forestry that operating the pool at the increased operating pressure complies with the requirements of the CSA Z341 standard.

Enbridge Gas says that a similar condition was “attached” to the OEB’s approval in the proceeding for the delta pressuring of the Sarnia Airport Pool, EB-2017- 0362².

OEB staff notes that a similar condition was *proposed* in the Sarnia Airport Pool case. However, the OEB only approved the first part of the condition. In its decision and order³, the OEB stated:

The OEB considers it inappropriate to set the requirements for filing evidence in support of any request for a further increase of the maximum operating pressure at this time. The OEB also notes that the form and the scope of the MNRF’s formal confirmation that operating the pool at the increased operating pressure complies with the requirements of the CSA Z341.1-14 standard does not have

¹ OEB Act, s. 23

² Exhibit A, Tab 2, Schedule 1, page 2, paragraph 5

³ EB-2017-0362, Sarnia Airport Storage Pool LP delta pressure application, Decision and Order issued April 26, 2018, page 5

to be set at this time as the future regulatory framework may differ from the current framework. The MNRF expressed a concern in its interrogatories to SASP that the wording of the condition as proposed by SASP leads to "...an abridged process for any future gradient increase request, as set out in the condition request...".

Question(s):

Please explain why Enbridge Gas believes the second part of the proposed conditions is appropriate in this case.

Response:

Enbridge Gas mischaracterized the Sarnia Airport Pool proposed condition in its evidence, as correctly noted by Board Staff. This was an unintentional error. Enbridge Gas does not seek to abridge any regulatory processes for future gradient requests and accepts the following wording as a Board condition of approval:

Enbridge Gas shall not operate the storage pool above a pressure representing a pressure gradient of 17.2 kPa/m (0.76 psi/ft) of depth without leave of the OEB.

ENBRIDGE GAS INC.
Answer to Interrogatory from
OEB Staff (STAFF)

Reference:

Exhibit B, Tab 1, Schedule 1, page 3

Preamble:

Enbridge Gas states that the Project is the first phase of a larger project to increase deliverability and storage capacity at Enbridge Gas' storage facilities. The additional deliverability and storage capacity will be sold as part of Enbridge Gas' unregulated storage portfolio. In developing this Project, Enbridge Gas determined that the Pools were preferred for increases in pressure.

Question(s):

- a) Please provide an overview of the overall project in terms of the proposed types of work (e.g., delta pressuring, well drilling, pipeline construction), pool names and locations, increased capacity per pool, possible timing, estimated costs, proposed treatment of costs (i.e., allocation between regulated and unregulated operations), expected land use requirements, unusual environmental concerns, and any potential Indigenous consultation concerns. Bulleted lists and summary tables are acceptable.
- b) Please discuss the rationale for Enbridge Gas' decision to enhance deliverability in more than one phase. Address business, economic, environmental and cost aspects, as well as technical and operational aspects of the multi-phase plan. Would there be any efficiencies gained by addressing the full demand at once (e.g., from the perspectives of regulatory approvals, permits, consultations, construction, etc.)?
- c) Please indicate which studies or models were the basis for Enbridge Gas' assessment and selection of the Pools as the preferred options for meeting

the identified needs. Please summarize and define the criteria used to select the Pools for the Project.

Response:

- a) In order to meet growing market demand for incremental storage space, Enbridge Gas is proposing to increase the pool pressure in eight (8) Designated Storage Areas – Black Creek Storage Pool, Coveny Storage Pool, Corunna Storage Pool, Dow Moore Storage Pool, Ladysmith Storage Pool, Payne Storage Pool, Seckerton Storage Pool and Wilkesport Storage Pool. The following tables show the proposed types of work, pool names and locations, proposed capacity increase per pool and proposed timing. There is potential for additional storage enhancement projects beyond 2022 depending on demand and project suitability.

In accordance with the Board’s decision in the Natural Gas Electricity Interface Review proceeding, EB-2005-0551 (NGEIR decision), any new capacity added to the storage pools is allocated to Enbridge Gas’s unregulated storage operations. Any additional storage capacity created will be sold to third parties as part of Enbridge Gas’s unregulated storage portfolio. Enbridge Gas’ ratepayers will not incur any rate impacts as a result of the storage enhancement projects as all related costs will be at the shareholder’s expense. As such, Enbridge Gas has not been required to file costs or economic information for unregulated storage projects. Similarly, Enbridge Gas maintains that such financial cost information is not relevant for this application.

Table 1 – Proposed Storage Enhancement Project Summary

Phase	Year(s)	Pool(s)	Location	Pressure Gradient Increase (kPa/m)	Capacity Increase (10 ³ m ³)
1	2019 to 2021	Black Creek	Sombra Township, Lambton County	15.9kPa/m to 17.2kPa/m	3,400 (0.13 PJ)
		Coveny	Sombra Township, Lambton County	15.9kPa/m to 17.2kPa/m	13,100 (0.51 PJ)
		Wilkesport	Sombra Township,	15.9kPa/m to	30,300 (1.19 PJ)

			Lambton County	17.2kPa/m	
		Ladysmith	Moore Township, Lambton County	15.9kPa/m to 16.5kPa/m	16,500 (0.65 PJ)
2	2021 to 2022	Corunna	Moore Township, Lambton County	15.9kPa/m to 17.2kPa/m	23,500 (0.92 PJ)
		Seckerton	Moore Township, Lambton County	15.9kPa/m to 17.2kPa/m	58,700 (2.31 PJ)
		Payne	Moore Township, Lambton County	15.9kPa/m to 17.2kPa/m	41,500 (1.63 PJ)
		Dow Moore	Moore Township, Lambton County	15.9kPa/m to 16.5kPa/m	46,800 (1.84 PJ)

Table 2 – Phase 1 - Proposed Storage Enhancement Project – Activity and Timing

Pool	Year	Activity Summary
Black Creek, Coveny, Wilkesport	2019	<ul style="list-style-type: none"> • Engineering, Geological, Risk and Environmental Assessments. • OEB application (No. 2)
	2020	<ul style="list-style-type: none"> • Wellhead upgrades
Ladysmith	2019	<ul style="list-style-type: none"> • OEB Application (No. 1 - completed) • Drill Stratigraphic test well
	2020	<ul style="list-style-type: none"> • Engineering, Geological, Risk and Environmental Assessments. • OEB application (No. 3)
	2021	<ul style="list-style-type: none"> • Convert stratigraphic test well to I/W well & connect to gathering system • Drill A-1 observation well • Upgrade Ladysmith gathering system • Upgrades within the Ladysmith Station

Table 3 - Phase 2 - Proposed Storage Enhancement Project – Activity, Timing

Pool	Year	Activity Summary
Corunna Seckerton	2020	<ul style="list-style-type: none"> • Engineering, Geological, Risk and Environmental Assessments. • OEB application (No. 3) • Corunna well abandonment
	2021	<ul style="list-style-type: none"> • Wellhead upgrades • Seckerton well abandonment
Dow Moore Payne	2021	<ul style="list-style-type: none"> • Engineering, Geological, Risk and Environmental Assessments. • OEB application (No. 4)
	2022	<ul style="list-style-type: none"> • Wellhead upgrades • Dow Moore station upgrades
NPS 24 Pipeline	2020	<ul style="list-style-type: none"> • Engineering design
	2021	<ul style="list-style-type: none"> • OEB application (No. 4) • Tie-in at Corunna Compressor Station • Permanent easement and temporary land use agreement for NPS 24 pipeline
	2022	<ul style="list-style-type: none"> • Construct 2.2 km NPS 24 pipeline between Payne and Corunna compressor stations
Station construction and modifications	2021	<ul style="list-style-type: none"> • Engineering design • Land purchase or permanent easement and temporary land use agreement required for Payne/Ladysmith connection station
	2022	<ul style="list-style-type: none"> • Construct Payne / Ladysmith connection station • Complete piping modifications within the Dawn station

With respect to Indigenous consultation for Phase 2, Enbridge Gas will request clarification on duty to consult requirement from the Ministry of Energy, Northern Development and Mines. If a duty to consult is triggered, Enbridge Gas will engage with potentially affected Indigenous groups on the project related interests while ensuring that regulatory requirements are met and the impacts on Indigenous interests are mitigated or avoided.

- b) Each phase of the project, as outlined above, includes the facilities required to create the deliverability associated with the storage capacity developed (i.e. a standard storage contract often includes 1.2% deliverability). Phase 2 also includes additional deliverability that will be marketed to third parties as part of Enbridge Gas' unregulated business.

The phased approach will allow time to complete technical studies, such as Environmental Screening Reports, including Species at Risk studies and Archaeological Assessments; Engineering Assessments, Geological Assessments; Neighbouring Activities Assessments and Risk Assessments. Due to pipeline and station construction, more time is required to complete Phase 2 technical studies.

Completing the work in phases minimizes the impact on operations. Enbridge Gas is only able to complete the necessary upgrades on a limited number of storage pools in a single year and maintain injectability. Only a limited number of pools can be taken out of service at any one time without causing an interruption to gas supply operations and this will allow Enbridge Gas to meet any contracted requirements. Enbridge Gas has contemplated shortening the length of the proposed developments and has concluded that it would not be feasible.

- c) The pools for the Project were chosen based on their geological similarity to other Enbridge Gas pools that have undergone a pressure increase and have been operated successfully at an elevated pressure gradient of 17.2 kPa/m (0.76 psi/ft) for many years.

Enbridge Gas selected the order based on technical information that it had available for each pool, the impact on operations, the availability of contractors and the additional planning required to develop pipeline and station improvements required for Phase 2.

ENBRIDGE GAS INC.
Answer to Interrogatory from
OEB Staff (STAFF)

Reference:

Exhibit C, Tab 1, Schedule 1, page 2

Preamble:

Enbridge Gas engaged Stantec Consulting Ltd. (Stantec) to complete the necessary Environmental Screenings. The Environmental Screening process was completed in October 2019. The screening results have been documented in Environmental Screening Reports (ESRs). Enbridge Gas says the ESRs conform to the OEB's *Environmental Guidelines for the Location, Construction and Operation of Hydrocarbon Pipelines and Facilities in Ontario* (7th Edition, 2016) and the generally accepted principles of *Environmental Screening Principles for Distribution System Expansion Projects by Ontario Natural Gas Utilities*, as outlined in E.B.O. 188.

Based on results of a background records review, habitat assessment and Stantec's experience for the surrounding landscape, Butler's Gartersnake and Eastern Foxsnake are the only Species at Risk (SAR) that may be impacted by the Project. In order to limit impacts to this species, Enbridge Gas has begun consultation with the Ministry of Environment, Conservation and Parks (MECP) to confirm recommended mitigation measures. On December 3, 2019, Enbridge Gas provided the MECP recommendations to be implemented during the Project.

Question(s):

Please provide an update on consultations with the MECP regarding the SARs that may be impacted by the Project and any other topics that have arisen since December 3, 2019.

Response:

March 12, 2020 – an email was sent by Enbridge Gas' Environmental Consultant, Stantec Consulting Ltd. (Stantec), to MECP requesting an update of the status of the review of the proposed Mitigation Plan.

March 13, 2020 – an email was sent by MECP to Stantec that the MECP Biologist was reviewing the file, but the MECP was currently experiencing a high volume of

requests.

April 20, 2020 – an email was sent by Stantec to MECP requesting an update. Included December 3, 2019 SAR Screening and Mitigation Plan as an attachment to the email.

April 21, 2020 – an email was sent by the MECP to Stantec that the file is in the queue, but still experiencing a high volume of requests.

April 23, 2020 – an email was sent by Stantec to the MECP outlining proposed start date of the well work. The original letter only referenced the spring of 2020.

May 7, 2020 – an email was sent by Enbridge Gas requesting that the file be expedited.

There has been no other correspondence with MECP concerning SARs or any other issues.

ENBRIDGE GAS INC.
Answer to Interrogatory from
OEB Staff (STAFF)

Reference:

Exhibit E, Tab 1, Schedule 1

Preamble:

As of the date of application, one landowner in the Coveny Pool had not yet been contacted. Enbridge states that all work in this pool will be completed off of the existing laneways. However, Enbridge Gas says that if any of this landowner's property is affected by the work, they will be compensated accordingly. All other lands are owned by Enbridge Gas. Enbridge Gas is not aware of any unresolved land matters.

Question(s):

- a) Please confirm that there is one or more existing land use agreement(s) between Enbridge Gas and the affected Coveny Pool landowner that apply to the existing laneways. If so, please confirm whether the existing agreement(s) also apply to land adjacent the existing laneways. If so, please confirm that the nature and extent of any compensation would be governed by the existing agreement(s). If any of the preceding cannot be confirmed, please explain how land use and compensation would be addressed with this landowner.
- b) Please confirm that this landowner has been served with the Notice of Hearing for this application. If not, please provide a status update on service.
- c) Aside from the Notice of Hearing, has the landowner in the Coveny Pool been contacted by Enbridge Gas to discuss the potential need for a portion of their lands? If so, please summarize the discussions including any concerns the landowner has expressed and the actions Enbridge Gas proposes to address those concerns. If not, please explain why not.

Response:

- a) The Gas Storage Lease Agreement ("GSLA") registered on title as instrument number L790583 gives Enbridge Gas the "right, liberty and privilege in, upon, or across the surface lands, to lay down, construct, operate, maintain, inspect, remove, replace, reconstruct and repair roadways, pipes or pipe lines, tanks, stations, structures, compressors and equipment necessary or incidental to the operations".

The lease is for the entire parcel and it includes the land adjacent to the laneways. Enbridge Gas's current compensation will be as per the terms in the GSLA with the landowner.

- b) This landowner received the Notice on April 24, 2020.
- c) The landowner in the Coveny Pool was contacted on April 24, 2020 through a phone call for an initial discussion on the potential need for a portion of their land. Enbridge Gas subsequently sent an email to the landowner which included the landowner drawing and compensation estimate. The Company will continue to work with the landowner to resolve any issues with regards to their property and the project.

ENBRIDGE GAS INC.
Answer to Interrogatory from
OEB Staff (STAFF)

Reference:

Exhibit F, Tab 1, Schedule 1

Preamble:

On September 23, 2019, Enbridge Gas received a letter from the Ministry of Energy, Northern Development and Mines (MENDM) indicating that it did not anticipate any appreciable adverse impact on the asserted or established rights of First Nation or Métis communities. Based on this determination, no duty to consult was triggered and the MENDM will not be providing a letter of opinion regarding the adequacy of consultation. Should new information on the Project become available that indicates a potential to impact Aboriginal and treaty rights, Enbridge Gas will notify the MENDM.

Question(s):

After the Notice of Hearing was published on March 12, 2020, did Enbridge Gas receive any communications from Indigenous communities? If so, please provide a summary of the communications and any actions taken by Enbridge Gas in response.

Response:

Enbridge Gas did not receive any communications from indigenous communities after March 12, 2020.

ENBRIDGE GAS INC.
Answer to Interrogatory from
OEB Staff (STAFF)

Reference:

Exhibit H, Tab 1, Schedule 1

Preamble:

Section 10 of the *Oil, Gas and Salt Resources of Ontario, Provincial Operating Standards*⁴ requires that facilities for storage of hydrocarbons in underground formations shall be designed, constructed, operated, maintained and abandoned in accordance with CSA Standard Z341 – *Storage of Hydrocarbons in Underground Formations* (CSA Z341).

As a condition of approval in past proceedings, the OEB has required that the applicant conform with the relevant requirements of the CSA Z341 to the satisfaction of the Ministry of Natural Resources and Forestry (MNRF)⁵.

Enbridge Gas advises that it met with the MNRF on January 7, 2020, to discuss the Project, and that, at that meeting, Enbridge Gas provided the MNRF with the following reports (Reports) for its review:

- i. Engineering Assessments by Geofirma Engineering Ltd. that confirm the maximum safe operating pressure for the Pools exceeds 17.2 kPa/m
- ii. An Assessment of Neighbouring Activities for each of the storage pools
- iii. An analysis of hazards and operability (HAZOP) for each of the storage pools

Enbridge Gas stated that it understands that the MNRF will file comments on compliance with the Z341 and on the Reports in its final submissions in this proceeding.

⁴ <https://www.ontario.ca/document/oil-gas-and-salt-resources-ontario-provincial-operating-standards>

⁵ E.g.: EB-2017-0363, Decision and Order, Union Gas Limited, 2018 Storage Enhancement Project; EB- 2017-0362, Decision and Order, Sarnia Airport Storage Pool LP, Delta Pressure Project; EB-2016-0322, Decision and Order, Union Gas Limited, 2017 Storage Enhancement Project

Question(s):

- a) Did Enbridge Gas discuss with the MNRF the option of obtaining its comments on Enbridge Gas' compliance with the Z341 prior to the date for written submissions in this proceeding? If so, please provide a summary of those discussions.
- b) Does Enbridge Gas have any objection the OEB imposing a condition of approval that requires Enbridge Gas to conform to the relevant requirements of the CSA Z341 to the satisfaction of the Ministry of Natural Resources and Forestry? If so, please explain Enbridge Gas' opposition to such a condition.

Response:

- a) During the meeting Enbridge Gas did offer to answer any questions or concerns of MNRF raised by the Reports, after the MNRF had had a chance to review. There was no commitment from MNRF to review the Reports or provide comments prior to the date of written submissions in this proceeding.
- b) Enbridge Gas does not have any objection to the proposed condition.