

2026 Kimball-Colinville Wells Drilling Project: Environmental Report

November 7, 2025

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2026 Kimball-Colinville Wells Drilling Project: Environmental Report
Limitations and Sign-Off
 November 7, 2025

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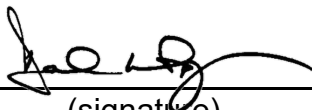
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Executive Summary

Enbridge Gas Inc. doing business as Enbridge Gas Ontario (Enbridge Gas) is proposing to construct the 2026 Kimball-Colinville Wells Drilling Project (the Project) to replace deliverability due to well abandonments to continue to provide residents, businesses, and industries located in the Project area with safe and reliable natural gas services. The new wells are located adjacent to existing natural gas infrastructure with temporary working space required during construction.

Project activities at TKC 70 and TKC 71 will commence with the construction of two temporary gravel drilling pads that will be approximately 8000 square meters each. Access to the pads will be via existing permanent access laneways. Upon completion of drilling activities, approximately 100 to 140 metres of Nominal Pipe Size 10-inch lateral pipeline will be constructed to connect the new natural gas storage wells to the existing Kimball-Colinville gathering system, and portions of the temporary gravel drilling pads will be removed such that permanent gravel pads of 96 square meters will remain.

As part of the planning process, Enbridge Gas has retained Stantec Consulting Ltd. to undertake an environmental study for the Project. The environmental study fulfills the requirements of the Ontario Energy Board's (OEB) *Environmental Guidelines for the Location, Construction and Operation of Hydrocarbon Projects and Facilities in Ontario, 8th Edition (2023)* (OEB Environmental Guidelines 2023).

Enbridge Gas is also required to obtain additional permits and approvals from federal, provincial, and municipal authorities that have jurisdiction, as required. This Environmental Report (ER) will serve to support these permit and approval applications.

An extensive engagement and consultation program was conducted for the Project with Indigenous peoples, federal and provincial agencies, municipal personnel and elected officials, residents, and businesses. The engagement and consultation program included development and maintenance of various Project contact lists which were used



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to distribute the required notices, Virtual Information Session information, and provision of feedback to those who had questions, issues, concerns or feedback about the Project. Enbridge Gas is committed to ongoing engagement and consultation with interested and potentially affected parties through detailed design and construction and will respond to concerns throughout the life of the Project.

The potential effects and impacts of the Project on physical, biophysical, and socio-economic features have been assessed. In the opinion of Stantec, the recommended program of supplemental studies, mitigation, protective, and contingency measures are considered appropriate to protect the features encountered. Monitoring will assess that mitigation and protective measures have been effective in both the short and long term.

The potential cumulative effects of the Project were assessed by considering development that may begin during construction or that may begin sometime in the future. The Study Area boundary was used to assess potential effects of the Project and other developments on environmental and socio-economic features. The cumulative effects assessment determined that, provided ongoing consultation and appropriate mitigation and protective measures are implemented, potential cumulative effects will be of low probability and magnitude, short duration, and reversible, and are, therefore, not anticipated to be significant.

With the implementation of the recommendations in the ER, ongoing communication and consultation, and adherence to permit, regulatory, and legislative requirements, potential adverse residual environmental and socio-economic impacts of this Project are not anticipated to be significant.



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Abbreviations

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Abbreviations

AAFC	Agriculture and Agri-Food Canada
AMO	Atlas of the Mammals of Ontario
CEA	Cumulative effects assessment
CER	Canada Energy Regulator
COSEWIC	Committee on the Status of Endangered Wildlife in Canada
DFO	Fisheries and Oceans Canada
DSA	Designated Storage Area
EASR	Environmental Activity and Sector Registry
ECCC	Environment and Climate Change Canada
Enbridge Gas	Enbridge Gas Ontario
END	Endangered
ER	Environmental Report
ESA	Endangered Species Act, 2007
ESC	Erosion and Sediment Control
HVA	Highly Vulnerable Aquifer
IAAC	Impact Assessment Agency of Canada
IPZ	Intake Protection Zone
LTC	Leave to Construct
MCM	Ministry of Citizenship and Multiculturalism
MECP	Ministry of the Environment, Conservation and Parks
MNR	Ministry of Natural Resources
MEM	Ministry of Energy and Mines



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MOECC	Ministry of the Environment and Climate Change
MTO	Ministry of Transportation
NAR	Not at Risk
NHIC	Natural Heritage Information Centre
OBA	Ontario Butterfly Atlas
OBBA	Ontario Breeding Bird Atlas
OEB	Ontario Energy Board
OEB Environmental Guidelines	Environmental Guidelines for the Location, Construction and Operation of Hydrocarbon Projects and Facilities in Ontario, 8th Edition (2023)
OGS	Ontario Geological Survey
OHA	Ontario Heritage Act
OMA	Ontario Moth Atlas
OPCC	Ontario Pipeline Coordinating Committee
ORAA	Ontario Reptile and Amphibian Atlas
O. Reg.	Ontario Regulation
PTTW	Permit to Take Water
SAR	Species at Risk
SARA	Species at Risk Act, 2002
SARO	Species at Risk in Ontario
SC	Special Concern
SCA	Species Conservation Act
SCN	Soybean Cyst Nematode
SGRA	Significant Groundwater Recharge Area



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SOCC	Species of Conservation Concern
Stantec	Stantec Consulting Ltd.
SWH	Significant Wildlife Habitat
SWHTG	Significant Wildlife Habitat Technical Guide
THR	Threatened
VIS	Virtual Information Session
WHPA	Well Head Protection Area



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1 Introduction

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1 Introduction

1.1 Project Description

Enbridge Gas Inc. doing business as Enbridge Gas Ontario (Enbridge Gas) is proposing to construct the 2026 Kimball-Colinville Wells Drilling Project (the Project) to replace deliverability due to well abandonments to continue to provide residents, businesses, and industries located in the Project area with safe and reliable and natural gas services. The new wells are located adjacent to existing natural gas infrastructure with temporary working space required during construction.

Project activities at TKC 70 and TKC 71 will commence with the construction of two temporary gravel drilling pads that will be approximately 8000 square meters each. Access to the pads will be via existing permanent access laneways. Upon completion of drilling activities, approximately 100 - 140 metres of Nominal Pipe Size 10-inch lateral pipeline will be constructed to connect the new natural gas storage wells to the existing Kimball-Colinville gathering system, and portions of the temporary gravel drilling pads will be removed such that permanent gravel pads of 96 square meters will remain.

As part of the planning process, Enbridge Gas has retained Stantec Consulting Ltd. (Stantec) to undertake an environmental study for the Project. The environmental study fulfills the requirements of the Ontario Energy Board's (OEB) *Environmental Guidelines for the Location, Construction and Operation of Hydrocarbon Projects and Facilities in Ontario, 8th Edition (2023)* (OEB Environmental Guidelines 2023).

1.2 Environmental Study

1.2.1 Objectives

A multidisciplinary team of environmental planners and scientists from Stantec conducted the environmental study. Enbridge Gas provided environmental support and engineering expertise throughout the study.



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The environmental study was completed in accordance with the OEB Environmental Guidelines (2023), as well as relevant federal and provincial environmental guidelines and regulations.

The principal objective of the environmental study was to outline various environmental mitigation and protection measures for the construction and operation of the Project while meeting the intent of the OEB Environmental Guidelines (2023). To meet this objective, the environmental study was prepared to:

- Complete a detailed review of environmental and socio-economic features and assess the potential environmental and socio-economic impacts of the Project on these features.
- Establish mitigation and protective measures that may be used to reduce or eliminate potential environmental and socio-economic impacts of the Project.
- Develop an engagement and consultation program to receive input from interested and potentially affected parties.
- Identify any necessary supplemental studies, monitoring, and contingency plans.

1.2.2 Process

The environmental study was divided into the following two main phases:

- Phase I: Environmental Constraints Review and Consultation
- Phase II: Environmental Report



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Phase I: Environmental Constraints Review and Consultation

The environmental study began by identifying environmental constraints associated with the well locations. The well locations were determined by Enbridge Gas based on their engineering considerations. The Study Area for the Project was then delineated, and the following groups were notified of the Project:

- Indigenous communities
- Federal and provincial agencies and authorities
- Municipal personnel and elected officials
- Residents and businesses in proximity to the preferred location

Feedback on the well locations and environmental constraints was sought from these groups through notices and a Virtual Information Session (VIS) that was accessible from July 23 – August 8, 2025.

Concurrent with consultation, environmental and socio-economic features in the Study Area were mapped and characterized using relevant published literature, maps, and digital data sources. Geographically based features were incorporated onto a series of digital base maps. Discussions with relevant agencies provided information for compiling the existing conditions inventory and mapping.

The maps produced of existing conditions are located in Appendix B (see Figures B.1 and B.9).

Phase II: Environmental Report

The final phase of the study involved determining potential environmental and socio-economic impacts and cumulative effects that would result from the Project and developing mitigation and protective measures, supplemental studies, monitoring, and contingency plans to reduce or avoid potential impacts.



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The environmental study concluded with the preparation of this Environmental Report (ER) as well as Environmental Alignment Sheets to identify site-specific mitigation and protective measures to be implemented during construction (see Appendix F).

1.2.3 The Environmental Report

The environmental study has relied on technically sound and consistently applied procedures that are replicable and transparent. The ER, which documents the environmental study, will form the foundation for future environmental management activities related to the Project.

The ER is organized into the following sections:

- **Introduction:** provides a description of the Project and the environmental study
- **Engagement and Consultation Program:** provides a description of engagement and consultation activities that were undertaken during the environmental study
- **Existing Conditions:** describes the existing conditions of the physical, biophysical, and socio-economic features in the Study Area
- **Potential Impacts, Mitigation, and Protective Measures:** predicts potential effects and impacts the Project may have upon the existing conditions; describes the mitigation and protective measures to eliminate or reduce the potential effects and impacts of the Project on physical, biophysical, and socio-economic features that have been assessed in the Study Area
- **Cumulative Effects Assessment:** provides an analysis of potential cumulative effects associated with the proposed Project
- **Monitoring and Contingency Plans:** describes monitoring and contingency plans to address potential environmental impacts of the proposed Project
- **Conclusion:** provides a discussion and consideration of the potential environmental impacts associated with the proposed Project



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The ER also includes references and appendices for documentation.

1.2.4 The OEB Regulatory Process

The OEB will review the ER for the Project (including details of engagement and consultation) as part of the proceeding to obtain a well drilling licence under section 40(1) of the OEB Act. Once the Ministry of Natural Resources (MNR) refers the well drilling licence applications to the OEB for a report, the OEB may order a written or oral hearing based upon the complexity of the Project and the level of public concern. During the hearing, any party with an interest in the Project may apply to the Board to become ‘intervenor’ or ‘interested parties’ in order to participate in the decision-making process. Following their review of the application, the OEB will determine whether the Project is in the public interest.

The OEB typically attaches conditions to approved projects. Enbridge Gas must comply with these conditions at all stages of the Project, including during construction and site restoration.

1.2.5 Additional Regulatory Processes

Enbridge Gas will also be required to obtain additional environmental permits, approvals, and notifications from federal, provincial, and municipal authorities as outlined in Table 1.1 below. This ER will serve to support these permit and approval applications and notifications.



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Table 1.1 Summary of Potential Environmental Permit and Approval Requirements

Type of Approval	Permit/Approval	Administering Agency	Description
Provincial	Environmental Activity and Sector Registry (EASR) (surface and groundwater) under the <i>Ontario Water Resources Act</i> (1990) (amended in June 2021)	Ministry of the Environment, Conservation and Parks (MECP)	Under O. Reg. 63/16, all construction dewatering projects regardless of dewatering volume can be completed under an EASR.
Provincial	Review of Built Heritage and Cultural Heritage Landscapes under the Ontario Heritage Act (<i>OHA</i>)	Ministry of Citizenship and Multiculturalism (MCM)	A review of potential impacts to built heritage resources and cultural heritage landscapes is required.
Provincial	Permitting or registration (e.g., O.Reg. 242/08, 830/21) under the <i>Endangered Species Act</i> (ESA) (2007)	MECP	An ESA permit or Registration is required for activities that could impact species protected under the ESA. Bill-5 proposes substantial changes to the ESA that will ultimately result in the dissolution of the ESA and its replacement with the Species Conservation Act, 2025 (SCA). The SCA will be based on a registration-first approach and is expected to come into force no later than early 2026.



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Type of Approval	Permit/Approval	Administering Agency	Description
Provincial	Development Permit under O. Reg 41/24 <i>of the Conservation Authorities Act</i>	St. Clair Region Conservation Authority	Required for works in St. Clair Region Conservation Authority Regulated Area.
Municipal	Noise By-Law No. 44 of 2014	St. Clair Township	Project activities should adhere to the local noise by-law.



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2 Engagement and Consultation Program

2.1 Objectives

Consultation is an important component of the OEB *Environmental Guidelines* (2023). As noted by the OEB (2023), consultation is the process of identifying interested and potentially affected parties and informing them about the Project, soliciting information about their values and local environmental and socio-economic circumstances, and receiving input into key Project decisions before those decisions are finalized.

Stantec believes that community involvement and consultation is a critical and fundamental component of this environmental study, and that Indigenous community participation is essential to the Project. We also recognize that each potentially affected Indigenous community has unique conditions and needs and that the process followed may not satisfy the “duty to consult” component from an Indigenous community’s perspective. To demonstrate that we respect this view, we will use the term “engagement” throughout the remainder of this Report when we refer to seeking input from Indigenous peoples.

The engagement and consultation program for the Project included the following objectives:

- Identify interested and potentially affected parties early in the process
- Inform and educate interested parties about the nature of the Project, potential impacts, proposed mitigation measures, and how to participate in the engagement and consultation program
- Provide a forum for the identification of issues
- Identify how input will be used in the planning stages of the Project
- Summarize issues for resolution, and resolve as many issues as feasible
- Revise the program to meet the needs of those being consulted, as feasible



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- Develop a framework for ongoing communication and engagement during the construction and operation phases of the Project

An extensive consultation program was undertaken for the Project and is described in Sections 2.2 – 2.4 below.

2.2 Identifying Interested and Potentially Affected Parties

2.2.1 Identifying Indigenous Peoples

Engagement with Indigenous peoples was guided by the OEB *Environmental Guidelines* (2023), as noted above, but also by the Enbridge Inc. Indigenous Peoples Policy.

Indigenous engagement commenced with the submission of a Project Description to the Ministry of Energy and Mines (MEM), formerly the Ministry of Energy and Electrification. This submission to the MEM provided details on the Project location and sought to determine the requirements of the duty to consult. Potentially impacted Indigenous peoples were identified by the MEM in a Letter of Delegation dated June 17, 2025 (See Appendix A.1).

The Letter of Delegation confirmed that the MEM would be delegating the procedural aspects of consultation in respect to the Project and that, based on the Crown's assessment, the following Indigenous peoples should be consulted:

- Aamjiwnaang First Nation
- Bkejwanong (Walpole Island First Nation)
- Chippewas of Kettle and Stony Point First Nation
- Chippewas of the Thames First Nation
- Oneida Nation of the Thames



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2.2.2 Identifying Interested and Potentially Affected Parties

Identification of interested and potentially affected parties was undertaken using a variety of sources, including the OEB Ontario Pipeline Coordinating Committee (OPCC) Members List, MECP Environmental Assessment Government Review Team Master Distribution List, and the experience of Enbridge Gas and Stantec.

The parties listed below were among those considered when developing the initial stakeholder contact list:

- Federal and provincial agencies and authorities
- Municipal personnel and elected officials

As the environmental study progressed, the initial stakeholder contact list evolved, and updates were made in response to changes in personnel, correspondence, and feedback gathered from Project notices. The Project contact lists are provided in Appendix A.1.

2.3 Communication Methods

2.3.1 Letters and Emails

2.3.1.1 Notice of Upcoming Project

A Notice of Upcoming Project was emailed to Indigenous Communities and Elected Officials on the contact list on June 20, 2025. The Notice was emailed to Agencies, OPCC, and Municipal Officials on the contact list on June 24, 2025. The Notice provided a project description, an overview of the environmental study, contact details, as well as a map of the Study Area. A generic copy of the Notice is included in Appendix A.2.



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2.3.1.2 Notice of Study Commencement and Virtual Information Session

A Notice of Study Commencement and Virtual Information Session was emailed to Indigenous Communities and Elected Officials on the contact list on July 11, 2025. The Notice was emailed to Agencies, OPCC, and Municipal Officials on the contact list on July 11, 2025. The Notice was also mailed to the landowner list on July 11, 2025, through Mail-It. A project description and dates for the Virtual Information Session were provided. A generic copy of the Notice is included in Appendix A.3.

2.3.2 Project Summary Report

A Project Summary Report was to provide Indigenous communities a chance to review and comment on project baseline conditions, impacts, and mitigation ahead of the ER. A copy of the Project Summary Report is included in Appendix A.4.

2.3.3 Virtual Information Session – Presentation Slides and Questionnaire

The VIS was hosted online and accessible from July 23 to August 8, 2025, and the comment period was available until August 26, 2025. The materials provided information on the Project, the OEB regulatory process, environmental study process, anticipated environmental and socio-economic impacts and mitigation, and next steps.

A Project email address and phone number were provided in the VIS for attendees to ask questions and leave comments. The VIS received 20 visits to the visual/audio presentation, 6 of which were located in Ontario. Following the VIS, 0 questionnaires were received.

Following the VIS slide presentations, a link to an online version of the questionnaire and an interactive map were provided. A downloadable version of the presentation slides, script, and the exit questionnaire was provided in the “Resources” tab on the VIS Project webpage (as described below). The exit questionnaire requested feedback on potential impacts, and the content of the VIS. The interactive map allowed attendees to view the proposed location and Study Area on a web-based map. A search function was



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made available on the interactive map to locate a specific address. Following closure of the VIS, it was determined that the CSA standard for pipelines (CSA Z-662) was referenced, incorrectly, whereas the reference should have been to the CSA standard for wells (CSA Z-341).

Copies of the questionnaire and display boards that were used for the Information Sessions are provided in Appendix A.5.

2.3.4 Project Webpage

Information on the Project, the OEB regulatory process, Environmental Study process, and Enbridge Gas' commitment to the environment was provided on the webpage created for the Project (<http://www.solutions.ca/KimballColinvilleWellsER>).

The webpage, referred to in this ER as the VIS webpage, was developed using the ArcGIS StoryMaps platform to host the VIS presentation. This webpage contained a "Resources" tab with a link to a downloadable version of the presentation slides, the exit questionnaire, and the presentation voiceover script.

A webpage was developed on the Enbridge Gas website (<https://www.enbridgegas.com/kimball-colinville-wells>) and was designed to provide information on the Project and a link to the VIS. Once the VIS was complete, copies of the presentation slides, the exit questionnaire and the presentation voiceover script were made available. Upon completion of this ER, it will be posted on the Enbridge Gas website.



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2.4 Consultation Events

2.4.1 Meetings

Meetings regarding the Project may occur, if required or requested, between Enbridge Gas and Indigenous peoples, and interested and potentially affected parties, as the Project progresses towards detailed design and construction. There have been no meetings to-date.

2.5 Input Received

The engagement and consultation program allowed input into the Project. Input was evaluated and where applicable integrated into the ER and Project. Comment-response summary tables are provided in Appendix A.6.

2.5.1 Indigenous Input

Enbridge Gas is committed to creating processes that support meaningful engagement with potentially affected Indigenous peoples. Enbridge Gas works to build an understanding of project related interests, ensure regulatory requirements are met, mitigate, or avoid project-related impacts on Aboriginal interests including rights, and provide mutually beneficial opportunities where possible.

One in-person meeting was held with the Aamjiwnaang First Nation on September 2, 2025, and a virtual meeting occurred with Three Fires Group and the Chippewas of the Kettle and Stony Point First Nation on August 26, 2025. A summary of correspondence with Indigenous communities as of October 27, 2025, can be found in Appendix A.6; as consultation with Indigenous communities is on-going, an Indigenous Consultation Report summarizing comments and responses will be included as a component of the OEB filing. A review of the correspondence received from Indigenous communities has determined that responses will not require any updates to the ER.

Enbridge Gas will continue to meaningfully engage with affected Indigenous peoples through phone calls, virtual and in-person meetings, and email communications. During



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these engagement activities, Enbridge Gas representatives will provide an overview of the Project, respond to questions and concerns, and address any interests or concerns expressed by Indigenous peoples to appropriately mitigate any Project-related impacts. Enbridge Gas will continue to work with Indigenous peoples following the distribution of the ER.

To accurately document Indigenous engagement activities and ensure follow-up, applicable supporting documents are tracked. Indigenous consultation has been included in the comment-response summary table and corresponding comment records will be submitted to the OEB upon the filing of the Project application.

2.5.2 Public Input

Zero comments were received via email correspondence or via phone calls as of October 27, 2025, in response to the Notice of Upcoming Project or Notice of Commencement and Virtual Information Session.

Zero questionnaires were filled out and submitted via email.

2.5.3 Agency Input

Federal Agencies and Authorities

No comments from federal agencies or authorities were received.

Provincial Agencies and Authorities

Eight comments have been received as of October 27, 2025, from Provincial Agencies and Authorities and were considered in the preparation of this ER. A summary of the comments received is provided below:

- MNR provided a Southern Region Information Package – For External Proponent Environmental Assessments.
- MCM provided an initial letter regarding cultural heritage and archaeological assessments.



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- MEM provided a Letter of Delegation detailing the Indigenous peoples who's Aboriginal and treaty rights may be impacted by the Project. During the draft ER review, MEM requested more information regarding Indigenous consultation for the Project.
- MNR reviewed the draft ER with no comments.
- MECP's Conservation and Source Projection Branch provided comments on the draft ER regarding consideration of source protection during construction.
- MCM provided comments on the draft ER which focused on mapping depicting the location of TKC 71, adding a new section to the ER titled 3.6.6 Archaeological Resources, and revisions to Section 6.2.3.
- OMAFA provided feedback on the draft ER regarding potential impacts to adjacent agricultural lands, tile drainage, and temporary work areas. OMAFA recommends consultation with landowners/farmers to ensure potential impacts are mitigated where possible.
- St. Clair Region Conservation Authority stated that portions of the Study Area are in regulated lands and would require a permit prior to construction.

Ontario Pipeline Coordinating Committee Members

Comments received are summarized above under 'Provincial Agencies and Authorities'.

2.5.4 Municipal Input

No comments from municipal officials were received.

2.6 Issues Resolution

Through the engagement and consultation program, no input was received that remains unresolved. Public and stakeholder input received were primarily in favour of the Project.



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Should feedback occur that cannot immediately be resolved, Enbridge Gas will endeavor to reach a resolution through meetings and discussions as appropriate and will inform the OEB where there are issues that have not been resolved.

2.7 Refinements Based on Input

At each stage of the engagement and consultation program, input received was compiled, reviewed, and incorporated into the environmental study process. Responses were provided, as applicable, to questions and comments received. Responses to comments received can be found in Appendix A.6. No comments or concerns were received to cause a change in the Project.

Enbridge Gas has committed to on-going engagement and consultation with directly affected and interested parties through detailed design and construction and will continue to respond to concerns through the life of the Project.



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3.1 Study Area

A Study Area is the area in which direct or indirect interactions with the environment could occur. For the purposes of the environmental study, the extent of the Study Area was determined by applying an approximate buffer of 200 m from wells (see Appendix B.1, B.2).

3.2 Data Sources

Information requests were made to agencies. Information collected assisted in identifying environmental and socio-economic features located in the Study Area.

Existing conditions figures (Appendix B) have been generated from data obtained from Ontario GeoHub. Additional mapping sources are identified on the respective figures and in the references section. Other background documents and information sources that were reviewed to identify the physical, biophysical, and socio-economic features present in the Study Area will be discussed in Sections 3.4 to 3.6.

For the socio-economic elements of the assessment, the most recent economy and employment statistics were extracted from the 2016 and 2021 Census of Population (Statistics Canada 2023). The selected census divisions included Ontario, the County of Lambton and St. Clair Township (Statistics Canada 2023).

3.3 Interaction Screening

A Screening Interactions Table (Table 3.1) has been prepared to screen interactions between valued components (VCs) and project features. Only components with potential to be impacted as identified in the screening table were carried forward in the Impacts and Mitigation section of the ER.



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Table 3.1 Screening Interactions Table

VC	Access Road	Well Pads	Pipeline Laterals
Bedrock Geology and Drift Thickness			
Physiography and Surficial Geology	X	X	X
Groundwater		X	X
Aggregates and Petroleum Resources	X	X	X
Soil and Soil Capability	X	X	X
Agricultural Tile Drainage	X	X	X
Soybean Cyst Nematode	X	X	X
Regulated Area and Natural Hazards	X	X	X
Aquatic Resources			
Terrestrial Resources	X	X	X
Residents	X	X	X
Economy and Employment	X	X	X
Community Services & Municipal Infrastructure			
Infrastructure			
Culture, Tourism & Recreational Facilities			
Air Quality and Noise	X	X	X
Indigenous Interests, Land Use & Traditional Knowledge	X	X	X
Land Use			
Landfills and Contaminated Sites			
Archaeological Resources ¹			
Built Heritage & Cultural Heritage Landscapes	X	X	X

Notes: X = VCs potentially present in the Study Area

¹The Study Area was assessed for archaeological impacts through previous Enridge projects, which determined no potential impacts. See Appendix D for Ministry acceptance of the reports.



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3.4 Physical Features

3.4.1 Physiography and Surficial Geology

The topography of the Study Area slopes gradually from approximately 195 m above mean sea level at TKC71 to about 193 m above mean sea level at TKC70. The area surrounding the Study Area is relatively flat, with overall topography sloping slightly southward (Appendix B.3).

The Study Area is located in the St. Clair Clay Plains, which is characterized by beveled till plains (Chapman and Putnam 2007). Surficial geology mapping suggests that the majority of the Study Area is located in fine-textured glaciolacustrine deposits (Ontario Geological Survey (OGS) 2010). Glaciolacustrine-derived silty to clayey till deposits are found close to the Study Area, as well as modern alluvial deposits of clay, silt, sand, gravel, to the southeast associated with watercourses (OGS 2010).

3.4.2 Regulated Area and Natural Hazards

Natural hazards are elements of the physical environment that have the potential to affect a Project in an adverse manner. Potential natural hazards are limited but may include flooding and seismic activity. The St. Clair Region Conservation Authority regulates areas prone to flooding and erosion hazards as well as shorelines, watercourses, and wetlands. According to online mapping, the TKC 70 & 71 Study Areas are located in regulated areas (St. Clair Region Conservation Authority n.d.) (Appendix B.4).

Both Study Areas lie in the Southern Great Lakes Seismic Zone (Natural Resources Canada 2021). This zone has a low to moderate level of seismicity when compared to the more active seismic zones to the east, such as the Western Quebec Seismic Zone which captures the area along the Ottawa River and Quebec. According to data from Natural Resources Canada (2019), over the last 30 years, on average, 2 to 3 magnitude 2.5 or larger earthquakes have been recorded in the Southern Great Lakes region. By



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comparison, over the same time period, the smaller region of Western Quebec experienced 15 magnitude 2.5 or greater earthquakes per year.

Three moderately sized (magnitude 5) events have occurred in the 250 years of European settlement of this region, all of them in the United States - 1929, Attica, New York, 1986, near Cleveland, Ohio, and 1998, near the Pennsylvania/Ohio border. All three earthquakes were widely felt but caused no damage in Ontario.

3.4.3 Soil and Soil Capability

There are two soil types identified in the Study Area: Caistor Clay, and Brookston Clay (Ontario GeoHub, 2023) (Appendix B.5, B.6). The majority of the Study Area consists of Caistor Clay, while Brookston Clay soils are found near TKC 71. The Soil Survey of Lambton County (1957) describes these soil as follows:

Caistor Clay - classified as a Grey-Brown Podzolic soil and belongs to the Caistor series. The topography associated with this soil series is slightly undulating. The internal drainage is hindered by a compact subsoil and the external drainage is imperfect because of the numerous saucer-like depressions.

Brookston Clay – dark coloured fine textured, poorly drained soils that predominate in the County.

Soil capability for agriculture is mapped by Agriculture and Agri-Food Canada (AAFC) (2013). Based on the Canada Land Inventory (CLI) system (AAFC 2013), the AAFC identifies seven classes for soil capability, which explains different limitations for each class of soil.

The following consists of a description for each soil capability class:

- Class 1 - soils have no significant limitations in use for crops.
- Class 2 - soils have moderate limitations that restrict the range of crops or require moderate conservation practices.



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- Class 3 - soils have moderately severe limitations that restrict the range of crops or require special conservation practices.
- Class 4 - soils have severe limitations that restrict their capability in producing perennial forage crops, and improvement practices are feasible.
- Class 5 - soils have very severe limitations that restrict their capability in producing perennial forage crops, and improvement practices are feasible.
- Class 6 – soils are capable only of producing perennial forage crops, and improvement practices are not feasible.
- Class 7 – soils have no capacity for arable culture or permanent pasture.
- Class O - Organic Soils.

TKC 70 is comprised of Class 3 soils – soils have moderately severe limitations that restrict the range of crops or require special conservation practices. TKC 71 is comprised of Class 2 soils – which have moderate limitations that restrict the range of crops or require moderate conservation practices.

3.4.4 Groundwater

Based on physiographic and surficial geology mapping (Chapman and Putnam, 2007; OGS, 2010), the Study Area traverses fine-textured glaciolacustrine deposits, clay to silt-textured till and localized modern alluvial deposits (Appendix B.7). A review of Source Water mapping indicates there are no highly vulnerable aquifers near the Study Area (MECP 2025a). Proposed well TKC70 is located in a significant groundwater recharge area (SGRA) (MECP 2025a).

There are no MECP Water Well Records within 500 m of the proposed wells (MECP 2024c). The nearest domestic well to TKC71 is located about 1 km north on Rokeby line, and the nearest domestic well to TKC70 is about 0.5 km south on Moore Line (MECP 2024c).

Regional groundwater flow near the Study Area in the overburden aquifer as well as the deeper bedrock aquifer is modeled as flowing generally to the southwest towards Lake



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St. Clair (Waterloo Hydrogeologic Inc. 2007). Local groundwater flow conditions are impacted by surface water features.

There are no Well Head Protection Areas (WHPAs), or Intake Protection Zones (IPZs) near the Study Area since there are no municipal groundwater supply systems nearby. The closest WHPA to the Study Area is approximately 57 km to the southeast and is associated with the Ridgetown Well Supply System (MECP 2025a). A review of surface water system IPZ indicates the closest IPZ-1 or IPZ-2 for a surface water system is about 18 km north along Lake Huron associated with the Lambton Area Water Supply System (MECP 2025a).

3.4.5 Aggregates and Petroleum Resources

Map 'B' of the County of Lambton Official Plan (2020) identifies mineral and aggregate resources throughout the municipality. Potential Aggregate Deposits, shown on Map 'B' of the Official Plan, are concentrated along the shores of Lake Huron and the nearest Potential Aggregate Deposit is located 10 km northwest of the TKC 70 Project location. There are seven (7) designated Aggregates Sites located in Wyoming, well outside the Project location.

The Project locations are situated in Designated Storage Areas (DSAs) as defined in s. 36.1(1)(a) of the *Ontario Energy Board Act*. These are lands that contain geological formations used for subsurface storage of natural gas. The location of these designated Natural Gas Storage Pools is shown on the County of Lambton Official Plan (2020) Map 'C'.

3.4.6 Agricultural Tile Drainage

Agricultural tile drains consist of perforated tubing inserted into the ground below the topsoil with the intention of improving drainage in the upper root zone and, ultimately, agricultural productivity. No Tile Drainage Types were found in the Study Area for TKC 70 (Ontario GeoHub 2024b). There is a limited area of agricultural tile drainage in the Study Area for TKC 71 (Ontario GeoHub 2024b) (Appendix B.8).



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3.4.7 Soybean Cyst Nematode

Soybean cyst nematode (SCN) (*Heterodera glycines*) is a soil borne parasite that can significantly impact soybean yields by causing 30 percent yield loss in affected agricultural fields. SCN can be spread in many ways such as wind, animals, or in topsoil stuck to machinery as the machinery passes from an impacted field to a non-impacted field. Once a field has been infested, there is significant potential for soybean crop yield reductions. SCN concerns occur in agricultural fields that will be traversed by construction equipment. SCN has been identified on the TKC 70 property during a previous Enbridge project and may be present on the TKC 71 property.

3.5 Biophysical Features

3.5.1 Methods

3.5.1.1 Background Data Review

The purpose of the background review was to determine locations and characteristics (e.g., flow regime, thermal regime, drain classification) of potential surface water features, and to identify the presence of designated natural heritage areas and records of species at risk (SAR) and species of conservation concern (SOCC) that overlap with the Study Area. A variety of background documents and sources of information were consulted during the preparation of the ER to identify records of natural heritage features and areas and recent records (i.e., records from 2005 or later) of SAR and SOCC in the Study Area, including the following information sources:

- County of Lambton Official Plan (County of Lambton 2020)
- Natural Heritage Information Centre (NHIC) database (MNR 2025a)
- Geospatial Ontario On-line Natural Heritage Mapping (MNR 2025b)
- MECP Species at Risk in Ontario (SARO) List (MECP 2025b)
- Environment and Climate Change Canada (ECCC) Species at Risk Public Registry (ECCC 2025)
- Fisheries and Oceans Canada (DFO) Aquatic Species at Risk Map (DFO 2025)



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- Ontario Breeding Bird Atlas (Cadman et al. 2007)
- Ontario Reptile and Amphibian Atlas (Ontario Nature 2020)
- Atlas of the Mammals of Ontario (Dobbyn 1994)
- Ontario Butterfly Atlas (Macnaughton et al. 2024)
- Ontario Moth Atlas (Kaposi et al. 2023)
- Ontario Odonata Atlas Database (OOA; MNRF 2023)
- iNaturalist Canada (iNaturalist 2025)
- eBird Canada (eBird 2025)
- High resolution satellite imagery of the Study Area (Google Earth Pro 2024)

A list of SAR and SOCC with recent records (i.e., in that past 20 years) in the Study Area was compiled based on the background data review. Some of the desktop sources provide data at a scale of 10 x 10 kilometer (km), and a recent species record is not confirmation that the species may be present in the Study Area, as suitable habitat may not occur. Therefore, SAR and SOCC desktop results were screened to assess their relevance to the Study Area. Species were removed from consideration if there was no potential habitat observed in the Study Area on satellite imagery (e.g., marsh species) and/or if there were no recent records of the species in the Study Area. SAR and SOCC that have the potential to occur in the Study Area (i.e., recent records and potential habitat) were carried forward for a habitat assessment discussed in subsequent Sections.

3.5.1.2 Habitat Assessment

Natural environment features and areas identified during the background data review were assessed for habitat suitability using the definitions and criteria for SAR or SOCC described below. The potential for SAR and SOCC to occur in the Study Area were assessed using the following criteria:

- Recent records of the species in the Study Area from background sources
- Range overlap in the Study Area
- Presence of suitable habitat in the Study Area



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3.5.1.2.1 *Species at Risk*

For this report, SAR are defined as:

- Species designated under the SARO list of the provincial ESA as threatened, endangered or extirpated
- Aquatic (fish and mussels) and migratory bird species designated under Schedule 1 of the federal *Species at Risk Act* (SARA) as threatened, endangered or extirpated

Species listed as threatened, endangered and/or extirpated on the SARO list receive both individual and habitat protection under the ESA. Aquatic species listed as threatened, endangered and/or extirpated on Schedule 1 of the SARA receive both individual and habitat protection under the SARA. Non-aquatic species and non-migratory birds listed on Schedule 1 of the SARA are excluded because protection under the SARA is generally not provided outside of federal lands.

Based on Stantec's background data review, a list of SAR with the potential to occur in the Study Area was developed, along with the federal and provincial status for each species. Habitat suitability in the Study Area was assessed for each of the SAR based on the background data review, satellite imagery, and photographs of the Study Area provided by Enbridge Gas.

3.5.1.2.2 *Natural Heritage Features and Areas*

The *Significant Wildlife Habitat Technical Guide* (SWHTG) (MNR 2000) and Ecoregion Criteria Schedules for 7E (MNR 2015) provide standard provincial guidance and were used to identify significant wildlife habitat (SWH) and assess their significance and sensitivity.

Wildlife habitat is defined as an area where plants, animals and other organisms live, including areas where species concentrate at a vulnerable point in their life cycle and that are important to migratory and non-migratory species (MNR 2010). Wildlife habitat is considered significant if it is ecologically important in terms of features, functions,



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representation, or amount, and contributing to the quality and diversity of an identifiable geographic area or Natural Heritage System (MNR 2010).

Habitats in the Study Area were assessed for candidate SWH using the Ecoregion 7E Criteria Schedules (MNR 2015). The presence of SWH was determined through desktop review (NHIC database) and, if present in the Study Area, were characterized during field investigations.

Targeted surveys, and in some cases, multi-year targeted species-use surveys are generally required to determine if candidate features qualify as confirmed SWH. Because multi-year targeted species-use surveys have not been conducted, SWH features identified during field investigations are considered as candidate, unless they were confirmed through direct observations or background review.

The SWHTG defines four categories of SWH:

1. Habitats of Seasonal Concentrations of Animals
2. Rare Vegetation Communities or Specialized Habitats for Wildlife
3. Habitats of SOCC
4. Animal Movement Corridors

Provincial ranks (S-Ranks) are status rankings assigned for the province by the MNR and are available in the NHIC database (MNR 2025a). S-Ranks are used by the NHIC to set protection priorities for rare species and vegetation communities. They are based on the number of occurrences in Ontario and are not legal designations. Provincially rare species are species with S-Ranks of S1, S2, or S3 (MNR 2025). S-Ranks are defined as follows:

- S1 – Critically Imperiled, very high risk of extinction or extirpation; usually fewer than 5 occurrences
- S2 – Imperiled, high risk of extinction or extirpation; usually fewer than 20 occurrences
- S3 – Vulnerable; usually fewer than 100 occurrences



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- S4 – Apparently secure; uncommon but not rare, usually more than 100 occurrences
- S5 – Secure, common, widespread, and abundant
- S? – An S-Rank followed by a “?” indicates the rank is still uncertain
- SNA – Introduced

The Natural Heritage Reference Manual was developed to provide technical guidance for implementing the natural heritage policies of the Provincial Policy Statement (MNR 2010). SWH includes the habitat of SOCC.

For this report, SOCC are defined as:

- Species designated under the SARO list as *special concern* (SC)
- Species assessed as SC by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) regardless of respective listings on Schedule 1 of SARA
- Species with provincial ranks of S1 to S3

Although these SOCC do not receive legal protection under the ESA or SARA, their habitat is protected under the Provincial Policy Statement (e.g., if it qualifies as SWH), and they may also be afforded protection under the federal *Migratory Birds Convention Act, 1994* or the Ontario *Fish and Wildlife Conservation Act, 1997*.

3.5.2 Results

3.5.2.1 Terrestrial Resources

The species described in-text herein use provincial common names (MNR 2025a). All common names and associated scientific names and species status of SAR and SOCC are detailed below in Table 3.1 and Table 3.2.

3.5.2.1.1 Natural Heritage Features and Areas

No designated natural heritage features and areas were identified in the Study Area during the background review.



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3.5.2.1.2 Forest and Vegetation Cover

The Study Area falls in Ecoregion 7E in the St. Thomas Ecodistrict 7E-2 (Wester et al. 2018). Land cover in this Ecodistrict is approximately 82% pasture/cropland, 15% deciduous forest [associated with the Eastern Temperate Deciduous Forest Vegetation Type and the Niagara Section of the Deciduous Forest Region (Rowe 1972)], 2% other natural communities. Deciduous tree species associated with this Ecodistrict include Sugar Maple, American Beech, White Ash, Silver Maple, Yellow Birch, Black Ash, American Elm, Red Maple, Bur Oak, American Basswood, Eastern Hop-hornbeam, Green Ash, Black Cherry, Bitternut Hickory, Trembling Aspen, Large-toothed Aspen, Balsam Poplar, Butternut, and Manitoba Maple (Wester et al. 2018).

Vegetation Communities

The Study Area is predominantly row-crop agricultural (AG) fields. The only naturally vegetated community within the Study Area is a narrow hedgerow located east of TKC 71 along a field access road which consists of shrubs and trees.

Significant Natural Areas

There are no significant natural areas identified in the Study Area.

3.5.2.1.3 Species at Risk

Based on the background data review, suitable habitat for a total of 12 SAR was assessed as potentially present in the Study Area. The SAR habitat assessment used background data review, satellite imagery, and photographs of the Study Area provided by Enbridge Gas to assess the habitat suitability for a SAR that had the potential to occur in the Study Area. The SAR habitat suitability assessment is provided in Table 3.1.

The following 7 SAR were assessed as having suitable habitat in the Study Area:

- Eastern Red Bat, Eastern Small-footed Myotis, Hoary Bat, Little Brown Myotis, Northern Myotis, Silver-haired Bat, Tricolored Bat



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Table 3.1 Terrestrial Species at Risk with Potential to Occur in the Study Area

Terrestrial Species	Common Name ¹	Scientific Name ¹	S-Rank ²	Provincial Status (SARO) ³	National Status (SARA) ⁴	Source(s)	Potential Habitat in the Study Area
Herptiles	Butler's Gartersnake	<i>Thamnophis butleri</i>	S2	END	END	ORAA	No – no suitable habitat for Butler's Gartersnake (dense grasslands / old fields, with small wetlands) is present in the Study Area.
Birds	Barn Swallow	<i>Hirundo rustica</i>	S4B	SC	THR	OBBA	No – no suitable nesting habitat for Barn Swallow (anthropogenic structures) is present in the Study Area.
Birds	Bobolink	<i>Dolichonyx oryzivorus</i>	S4B	THR	THR	OBBA	No – no suitable nesting habitat for Bobolink (hayfields / grasslands) is present in the Study Area.
Birds	Eastern Meadowlark	<i>Sturnella magna</i>	S4B,S3N	THR	THR	OBBA	No – no suitable nesting habitat for Eastern Meadowlark (hayfields / grasslands) is present in the Study Area.
Birds	Wood Thrush	<i>Hylocichla mustelina</i>	S4B	SC	THR	OBBA	No – no suitable nesting habitat for Wood Thrush (forested interior habitat) is present in the Study Area.
Mammals	Eastern Red Bat	<i>Lasiurus borealis</i>	S3	END	Not Listed	AMO	Yes – suitable roosting habitat for Eastern Red Bat may be present in the hedgerow in the Study Area.
Mammals	Eastern Small-footed Myotis	<i>Myotis leibii</i>	S2S3	END	UC	AMO	Yes – suitable roosting habitat for Eastern Small-footed Myotis may be present in the hedgerow in the Study Area.
Mammals	Hoary Bat	<i>Lasiurus cinereus</i>	S3	END	UC	AMO	Yes – suitable roosting habitat for Hoary Bat may be present in the hedgerow in the Study Area.
Mammals	Little Brown Myotis	<i>Myotis lucifugus</i>	S3	END	END	AMO	Yes – suitable roosting habitat for Little Brown Myotis may be present in the hedgerow in the Study Area.



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Terrestrial Species	Common Name ¹	Scientific Name ¹	S-Rank ²	Provincial Status (SARO) ³	National Status (SARA) ⁴	Source(s)	Potential Habitat in the Study Area
Mammals	Northern Myotis	<i>Myotis septentrionalis</i>	S3	END	END	AMO	Yes – suitable roosting habitat for Northern Bat may be present in the hedgerow in the Study Area.
Mammals	Silver-haired Bat	<i>Lasionycteris noctivagans</i>	S3	END	UC	AMO	Yes – suitable roosting habitat for Silver-haired Bat may be present in the hedgerow in the Study Area.
Mammals	Tricolored Bat	<i>Perimyotis subflavus</i>	S3?	END	END	AMO	Yes – suitable roosting habitat for Tri-colored Bat may be present in the hedgerow in the Study Area.

Notes:

¹Scientific Name and Common Name: The scientific name, and English common name of a species as published by the Natural Heritage Information Centre hosted by the MNR and Forestry / Land Information Ontario.

²S-Rank: Subnational Rank (S-Rank) is the conservation status of a species or plant community within a particular province, territory, or state. In this scenario, it is the provincial level ranking system as published by the Natural Heritage Information Centre hosted by the MNR.

³SARO Status: Species at Risk in Ontario (Provincial Status as defined by the Endangered Species Act, 2007 as amended).

⁴SARA Status: Federal status as defined by the Species at Risk Act.

Endangered Species Act and Species at Risk Act Acronyms

END: Endangered - a species facing imminent extinction or extirpation

THR: Threatened - a species that is at risk of becoming endangered

SC: Special Concern - a species with characteristics that make it sensitive to human activities or natural events

UC: Under Consideration for Addition and/or Status Change under Schedule 1 of SARA

Endangered Species Act and Species at Risk Act Acronyms

END: Endangered - a species facing imminent extinction or extirpation

THR: Threatened - a species that is at risk of becoming endangered

SC: Special Concern - a species with characteristics that make it sensitive to human activities or natural events

UC: Under Consideration for Addition and/or Status Change under Schedule 1 of SARA

Subnational Rankings (S RANK)

S1: Critically Imperiled - Critically imperiled in the province (often 5 or fewer occurrences)

S2: Imperiled - Imperiled in the province, few populations (often 20 or fewer)

S3: Vulnerable - Vulnerable in the province, relatively few populations (often 80 or fewer)

S4: Apparently Secure - Uncommon but not rare

S?: Rank Uncertain

S#B: Breeding status rank

S#M: Migration status rank

References

AMO: Atlas of the Mammals of Ontario (Dobbyn 1994)

NHIC: Ontario’s NHIC database (MNR 2025a)

OBBA: Ontario Breeding Bird Atlas (Cadman et al. 2007)

ORAA: Ontario Reptile and Amphibian Atlas (Ontario Nature 2020)



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3.5.2.1.4 *Significant Wildlife Habitat*

As part of the desktop review, the Study Area was assessed for potential SWH described by the *Significant Wildlife Habitat Criteria Schedules for Ecoregion 7E* (MNR 2015). A full SWH assessment is provided in Appendix D.

Habitats of Seasonal Concentrations of Animals

Habitats of seasonal concentrations of animals are those sites where large numbers of a species gather together at one time of the year, or where several species congregate. These areas include deer yards, turtle overwintering areas, snake and bat hibernacula, bat maternity colonies, waterfowl staging areas, raptor roosts, bird nesting colonies, shorebird staging areas, and passerine migration concentrations. Only the best examples of these concentration areas are usually designated as SWH. Areas that support a SAR, or areas where a large proportion of the population may be lost if the habitat is destroyed, are examples of habitats of seasonal concentrations of animals which should be designated as significant (MNR 2000).

Waterfowl Stopover and Staging Area (Terrestrial): Low-lying areas to support SWH for waterfowl stopover and staging areas (terrestrial) may be present in agricultural fields in the Study Area.

Bat maternity colonies: The hedgerow in the Study Area may provide candidate SWH habitat for bat maternity colonies.

Reptile Hibernacula: Rural agriculture fields and the hedgerow may have rock piles, fences and/or crumbling foundations that could provide reptile hibernacula in the Study Area.



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Rare Vegetation Communities or Specialized Habitats for Wildlife

Rare vegetation communities and specialized habitats for wildlife are two separate components. Rare vegetation communities are those with vegetation communities that are considered rare in the province (e.g., S1-S3). The SWHTG (MNR 2000) identifies many habitats that could be considered specialized habitats, such as habitat for area-sensitive species, forests providing a high diversity of habitats, amphibian woodland breeding ponds, turtle nesting habitat, highly diverse sites, as well as seeps and springs. High quality habitat features generally occur in interior landscapes where habitat is not influenced by edge effects and wildlife mortality that are associated with major roadways.

No candidate rare vegetation communities or specialized habitats for wildlife are present in the Study Area.

Habitat for Species of Conservation Concern

Habitat for SOCC includes four types of species: (a) those that are rare, (b) those whose populations are significantly declining, (c) those that have been identified as being at risk to certain common activities, and (d) those with relatively large populations in Ontario compared to the remainder of the globe. The Significant Wildlife Habitat Criteria Schedules for Ecoregion 7E (MNR 2015) identifies marsh, open country and shrub/early successional bird breeding habitat and SC and rare wildlife species in this category.

Rare species are considered at five levels: globally rare, federally rare with designations by COSEWIC, provincially rare by the Committee on the Status of Species at Risk in Ontario, regionally rare (at the site region level), and locally rare (at the municipality or site district level). This is also the order of priority that should be assigned to the importance of maintaining species.

Some species have been identified as being susceptible to certain practices, and their presence may result in an area being designated SWH.



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Special Concern and Rare Wildlife Species:

Based on the background data review, suitable habitat for a total of 7 SOCC was assessed as potentially present in the Study Area. The SOCC habitat assessment used background data review, satellite imagery, and photographs of the Study Area provided by Enbridge Gas to assess the habitat suitability for SOCC that had the potential to occur in the Study Area. The SOCC habitat assessment is provided in Table 3.3.

The following seven SOCC were assessed as having suitable habitat in the Study Area:

- Tortricid Moth, Betrothed Underwing Moth, Monarch, Obscure Underwing Moth, Orange-tipped Oakworm Moth, Eastern Wood-Pee wee, Purple Martin

Animal Movement Corridors

Migration corridors are areas that are traditionally used by wildlife to move from one habitat to another, typically to access different seasonal habitat requirements.

Amphibian Corridors require consideration in Ecoregion 7E once significant amphibian breeding habitat is confirmed.

No candidate animal movement corridors are present in the Study Area.



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Table 3.2 Terrestrial Species of Conservation Concern Habitat Suitability Assessment

Terrestrial Species	Common Name ¹	Scientific Name ¹	S-Rank ²	Provincial Status (SARO) ³	National Status (SARA) ⁴	Source	Potential Habitat in the Study Area
Plants	Yellow-fruited Sedge	<i>Carex annectens</i>	S2	Not Listed	Not Listed	iNaturalist	No – no suitable habitat for Yellow-fruited Sedge (dry prairie, open woods, old fields) is present in the Study Area.
Insects	Tortricid Moth	<i>Xenotemna pallorana</i>	S2	Not Listed	Not Listed	iNaturalist	Yes – suitable foraging habitat for Tortricid Moth larvae may be present in the hedgerow in the Study Area.
Insects	Betrothed Underwing Moth	<i>Catocala innubens</i>	S3	Not Listed	Not Listed	OMA	Yes – suitable foraging habitat for Betrothed Underwing Moth larvae may be present in the hedgerow in the Study Area.
Insects	Carolina Sphinx Moth	<i>Manduca sexta</i>	S2	Not Listed	Not Listed	OMA	No – there is no suitable habitat for Carolina Sphinx Moth larvae (tobacco and tomato plants) present in the Study Area.
Insects	Monarch	<i>Danaus plexippus</i>	S2N,S4B	SC	END	OBA	Yes – suitable habitat for Monarch larvae (Milkweed) may be present in the hedgerow in the Study Area.
Insects	Obscure Underwing Moth	<i>Catocala obscura</i>	S3	Not Listed	Not Listed	OMA	Yes – suitable foraging habitat for Obscure Underwing Moth larvae may be present in the hedgerow in Study Area.
Insects	Orange-tipped Oakworm Moth	<i>Anisota senatoria</i>	S3	Not Listed	Not Listed	OMA	Yes – suitable foraging habitat for Orange-tipped Oakworm Moth larvae may be present in the hedgerow in Study Area.
Herptiles	Snapping Turtle	<i>Chelydra serpentina</i>	S4	SC	SC	NHIC, ORAA	No – no suitable nesting habitat for Snapping Turtles is present in the Study Area.
Birds	Eastern Wood-pewee	<i>Contopus virens</i>	S4B	SC	SC	OBBA	Yes – suitable nesting habitat for Eastern Wood-pewee is present in the hedgerow in the Study Area.



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Terrestrial Species	Common Name ¹	Scientific Name ¹	S-Rank ²	Provincial Status (SARO) ³	National Status (SARA) ⁴	Source	Potential Habitat in the Study Area
Birds	Purple Martin	<i>Progne subis</i>	S3B	Not Listed	Not Listed	OBBA	Yes – suitable nesting habitat for Purple Martin may be present in the hedgerow in the Study Area.

Notes:

¹Scientific Name and Common Name: The scientific name, and English common name of a species as published by the Natural Heritage Information Centre hosted by the MNR and Forestry / Land Information Ontario.

²S-Rank: Subnational Rank (S-Rank) is the conservation status of a species or plant community within a particular province, territory, or state. In this scenario, it is the provincial level ranking system as published by the Natural Heritage Information Centre hosted by the MNR.

³SARO Status: Species at Risk in Ontario (Provincial Status as defined by the *Endangered Species Act, 2007* as amended).

⁴SARA Status: Federal status as defined by the *Species at Risk Act*.

Endangered Species Act and Species at Risk Act Acronyms

END: Endangered - a species facing imminent extinction or extirpation

THR: Threatened - a species that is at risk of becoming endangered

SC: Special Concern - a species with characteristics that make it sensitive to human activities or natural events

UC: Under Consideration for Addition and/or Status Change under Schedule 1 of SARA

Subnational Rankings (S RANK)

S1: Critically Imperiled - Critically imperiled in the province (often 5 or fewer occurrences)

S2: Imperiled - Imperiled in the province, few populations (often 20 or fewer)

S3: Vulnerable - Vulnerable in the province, relatively few populations (often 80 or fewer)

S4: Apparently Secure - Uncommon but not rare

S?: Rank Uncertain

S#B: Breeding status rank

S#M: Migration status rank

References

iNaturalist: iNaturalist. 2025.

NHIC: Ontario’s NHIC database (MNRF 2025a)

OBA: Ontario Butterfly Atlas database (Macnaughton et al. 2024)

OBBA: Ontario Breeding Bird Atlas (Cadman et al. 2007)

OMA: Ontario Moth Atlas (Kaposi et al. 2023)

ORAA: Ontario Reptile and Amphibian Atlas (Ontario Nature 2020)



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3.6 Socio-Economic Environment

3.6.1 Residents

The population breakdown in the Province of Ontario, the County of Lambton, and the Township of St. Clair is presented in Table 3.3 below.

Table 3.3 Population, 2021

Location	Total Population	Land Area (km ²)	Population Density per (km ²)
Ontario	14,223,942	892,411.8	15.9
County of Lambton	128,154	2,999.93	42.7
Township of St. Clair	14,659	618.57	23.7

Source: Statistics Canada, 2023

The County of Lambton is a rural county and Township of St. Clair is proportionally less populated. Table 3.4 below shows the population growth from 2016 to 2021 in the Province of Ontario, the County of Lambton, and the Township of St. Clair.

Table 3.4 Population Growth from 2016-2021

Location	Total Population 2016	Total Population 2021	Population percentage change (%)
Ontario	13,448,494	14, 223,942	5.8
County of Lambton	126,638	128,154	1.2
Township of St. Clair	14,086	14,659	4.1

Source: Statistics Canada, 2023



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As shown in Table 3.4, the County of Lambton experienced the smallest population increase of 1.2% while Township of St. Clair and the province experienced a larger population increase of 4.1% and 5.8% respectively (Statistics Canada 2023). The population in Township of St. Clair was forecasted to reach 13,876 by 2031 but has already exceeded the prediction (The Independent 2023). The Township of St. Clair is currently revising their Official Plan and were forced to re-examine the Township's future needs for housing, jobs and land use (The Independent 2023). On a larger scale, the County of Lambton has experienced a small population percentage increase due to aftermath of the pandemic and the population movement and job creation. Some municipalities in Lambton County experienced population growth such as Sarnia, however some townships such as Enniskillen Township and Oil Springs experienced a population decrease of 88 people and 50 people respectively (Morden 2021).

3.6.2 Economy and Employment

As shown in Table 3.5 below, in 2021, the employment rate was highest in the province (55.1%) followed by Township of St. Clair (52.8%) and the County of Lambton (49.8%) (Statistics Canada 2023). The province also had the highest unemployment rate (12.2%), followed by the County of Lambton and Township of St. Clair (Statistics Canada 2023).



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Table 3.5 Labour Characteristics for Persons > 15 years, 2021¹

Location	Total Population 15 years and Over	Labour Force	Employed	Participation Rate (%)	Employment Rate (%)	Unemployment Rate (%)
Ontario	11,782,820	7,399,200	6,492,895	62.8	55.1	12.2
County of Lambton	106,375	59,655	53,000	56.1	49.8	11.2
Township of St. Clair	12,160	7,040	6,425	57.9	52.8	8.7

Source: Statistics Canada (2023)

¹ Table 4.6 data for Total – Population aged 15 years and over by labour force status was 25% sampled data. The data also refers to whether a person aged 15 years and over was employed, unemployed or not in the labour force during the week of Sunday, May 2 to Saturday, May 8, 2021.
 For information on the comparability of the 2021 Census labour force status data with those of the Labour Force Survey, see Appendix 2.11 of the Dictionary, Census of Population, 2021.



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As shown in Table 3.6 below, the 2021 Census Profile for these census divisions referred to the 2020 calendar year for Median Total Income of Households and Individuals. In 2020, the median income of households was the greatest in Township of St. Clair, followed by the province and the County. The median income of individuals was also the greatest in Township of St. Clair at \$47,600 followed by the County and the Province (Statistics Canada 2023).

Table 3.6 Median Income of households and individuals, 2020

Location	Median Total Income of Households	Median Total Income of Individuals
Ontario	\$91,000	\$41,200
County of Lambton	\$83,000	\$42,400
Township of St. Clair	\$98,000	\$47,600

Source: Statistics Canada (2023)

The top three occupation classifications between all three comparisons were quite similar. Healthcare and social assistance were the top occupational category among the province, County and Township (Statistics Canada 2023). Retail trade was the second most common occupation in the province and in the Township compared to manufacturing in the County (Statistics Canada 2023). The third most common occupation in the Township and the County was construction while on a provincial scale was professional scientific and technical services (Statistics Canada 2023).

3.6.3 Air Quality and Noise

The landscape of the Study Area is comprised of hydrocarbon infrastructure, agriculture, and natural heritage features. Agricultural activities and everyday vehicle use have the potential to expel air emissions.



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According to the Environmental Noise Guidelines (Ministry of the Environment and Climate Change (MOECC) 2021), the Study Area is located in a rural area and is classified as a Class 3. Class 3 areas have acoustic environments that are dominated by natural sounds with little to no traffic (MOECC 2021). The Study Area is expected to experience light traffic volume that represents a source of noise. Moderate noise sources in the Study Area may result from day-to-day traffic and occasional sounds due to anthropogenic domestic activities such as property maintenance and agricultural activities.

3.6.4 Indigenous Interests, Land Use and Traditional Knowledge

Ontario, as the Crown, has a legal duty to consult with Indigenous peoples regarding projects or decisions that may adversely impact constitutionally protected Indigenous or treaty rights. The Project is in the traditional territories and areas of interest of Aamjiwnaang First Nation, Chippewas of Kettle and Stony Point First Nation, Chippewas of the Thames First Nation, Oneida Nation of the Thames and Walpole Island First Nation as identified through provision of a Project Summary to the MEM on December 31, 2024 (see A.1). The Project is located in the Southern Ontario Treaties (1764-1862) and Treaty 7: Sombra Township (Government of Canada 2024). There are no Indigenous Reserves located in the Study Area (Government of Canada 2024).

Enbridge Gas and Stantec respectfully acknowledge the value of traditional knowledge and oral history that is shared among Indigenous peoples is acknowledged and welcomed and provides context and background to the findings of archaeological studies. We recognize that Indigenous peoples have strong ties to their lands and that the use of these lands, from a development, ecosystems, and sustainability perspective, is of vital importance to communities.



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We also recognize that the worldviews shared by Indigenous peoples contain a rich knowledge of rare plants and animals. An Indigenous worldview is one that is developed through a mutually beneficial relationship, where one sees themselves as deeply connected to the natural world. This ER and the studies and databases that influence the findings in, are the product of Western knowledge and a Western worldview. In this vein, we acknowledge that the discussions in this Report on Provincially and Federally protected species, for instance, do not capture the full breadth of the value these species have to Indigenous peoples.

We welcome the opportunity for Indigenous peoples to share context and background to the findings of both the archaeological studies as well as the natural heritage studies completed for the Project so that we may gain a sense of the full value of the species and ecosystems (and subsequent impacts) discussed in this Report.

3.6.5 Built Heritage Resources and Cultural Heritage Landscapes

TKC 70

A cultural heritage assessment was previously completed for the land on which TKC70 is located, as part of Enbridge Gas' Dawn-Corunna project (EB-2022-0086). The cultural heritage features identified are not located in the Study Area for this Project.

TKC 71

Stantec prepared a Cultural Heritage Memo for the Study Area of TKC 71 (Appendix E). The objective of the Memo was to identify known built heritage resources and cultural heritage landscapes in, adjacent to, or crossed by the Study Area. The Study Area met one indicator of cultural heritage value or interest on the MCM Checklist, for the "Smith and White Cemetery." However, this cemetery is located over one kilometre northeast of TKC 71.



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3.6.6 Archaeological Resources

Two Stage 1-2 archeological assessments (AA, under Project Information Form number P256-0840-2024 & P256 0693-2021) were carried out by Stantec for Coveny and Kimball-Colinville Well Drilling, and Kimball-Colinville Wells Maximum Operating Pressure Increase project. A Stage 1-2 AA consists of a review of geographic, land use, and historical information for the property and the relevant surrounding area, a property visit to inspect its current condition, and contacting MCM to find out whether, or not, there are any known archaeological sites on or near the property. Its purpose is to identify areas of archaeological potential and further archaeological assessment (e.g., Stage 3-4) as necessary. The Stage 1-2 AA's are included in Appendix D.

TKC 70

An archaeological assessment was previously completed for the land on which TKC 70 is located, as part of Enbridge Gas' Kimball-Colinville Wells Maximum Operating Pressure Increase project (**Appendix D**).

During the Stage 2 survey one new archaeological location was identified – Location 1. Location 1 was a single, isolated find of one retouched flake of Kettle Point chert. Location 1 is sufficiently documented in accordance with Section 2.2 of the 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011). Thus, no further archaeological assessment was recommended for

Location 1.

TKC 71

As part of Enbridge Gas' Coveny and Kimball-Colinville Well Drilling project, a Stage 1-2 Archaeological Assessment was completed that overlaps with the location of TKC 71 (**Appendix D**).



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Four new archaeological locations were identified during the Stage 2 survey of the Study Area. The Stage 2 assessment of Location 1, 2, 3, and 4 resulted in the identification of a chipped lithic knife made of Kettle Point chert, a broken projectile point manufactured from an indeterminate chert, a broken projectile point manufactured from Kettle Point chert, and a retouched flake of indeterminate chert, respectively.

No further archaeological assessment was recommended for Location 1, 2, 3, and 4. No other archaeological resources were identified during the Stage 2 survey of the Study Area. Thus, in accordance with Section 2.2 and Section 7.8.4 Standard 3 of the 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011), no further archaeological assessment of the surveyed portions of the Study Area was recommended.



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4.1 Methodology

The potential effects and impacts of the Project on physical, biophysical, and socio-economic features have been assessed in the Study Area upon review of the existing conditions outlined in Sections 3.4 to 3.6. With an understanding of construction and operation activities (see Sections 4.1.1 and 4.1.2, respectively) the assessment:

- Describes the environmental and socio-economic components
- Predicts the effects and associated impacts of construction and operation activities
- Recommends supplemental studies, mitigation, and protective measures (including construction methods and timing, site-specific mitigation, environmental protection measures, and compensation measures)
- Outlines the net impacts that are likely to remain

The determination of effects, impacts, and mitigation and protective measures considered:

- Comments expressed during the engagement and consultation program
- Information available from published and unpublished literature
- Maps and digital data
- Mitigation guidance documents
- The experience of Enbridge Gas and Stantec



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By necessity, the analysis, integration, and synthesis of the data is an iterative process because information becomes available at various stages of the study and at different mapping scales. The level of detail of data and mapping increases as the study moves from analysis of the Study Area to a site-specific survey of features in the Project footprint. The data available at the current stage of the environmental study is appropriate for predicting effects and potential impacts and recommending mitigation and protective measures.

Specific information requests were made to several agencies throughout the Project. The information collected assisted in identifying environmental features and constraints located on and adjacent to the Study Area, the potential presence of SAR and their habitat, predicting effects and potential impacts, and developing mitigation and protective measures. Where agencies requested that information be kept confidential, such as the precise location of rare, threatened, vulnerable or endangered species and archaeological sites, such information has been withheld from the report or mapped in such a way that specific site locations cannot be determined.

The existing conditions maps in Appendix B have been generated from data obtained from Ontario GeoHub and other sources as indicated on the maps and in the references. Scales have been adjusted from the original source to better represent the features mapped. The environmental and socio-economic information presented in the ER is based on sources cited throughout.

Table 4.1 below notes the potential impacts, mitigation, and protective measures, including recommended supplemental studies, and net impacts for the existing conditions as described in Sections 3.4 to 3.6.



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4.1.1 Construction

Project construction activities at the TKC 70 and 71 Project location involve a permanent access laneway, a temporary gravel drilling pad (later reduced to a smaller permanent well pad), a new natural gas storage well, and pipeline laterals. All activities will occur on agricultural land.

Construction will start with preparing the construction area by installing environmental silt fencing at required locations. Laneways and drill pads will be installed by excavation of topsoil and placement of crushed gravel on top of the native subsoil.

The new natural gas storage well will be drilled with a rotary tool (with a rotating bit). This method will involve the removal of drill cuttings via a fluid. Drill cuttings and the medium to remove them will be stored in tanks on the drilling pad, prior to testing for contaminants and subsequent removal to an appropriate facility.

The pipeline installation will follow typically construction techniques: excavation of a trench (separating topsoil from subsoil), pipe welding, lowering the pipe into the trench, hydrostatic testing, then drying the pipe, connections with existing pipe infrastructure, backfilling of the trench with suitable material, purging the pipe of air, and filling the pipe with natural gas.

Following construction of the new natural gas storage well and pipeline, the temporary gravel drilling pad will be reduced in size by removing extraneous crushed gravel, importing additional subsoil as required, and replacing the stockpiled topsoil.



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4.1.2 Operation and Maintenance

Once the Project is operational, the following activities will be undertaken to patrol and maintain the Project:

- Completing inspection by Enbridge Gas at least once a year to check for exposed pipelines, evidence of damage to aboveground equipment and piping, evidence of damage to underground piping and gas leaks, and identify any unassociated construction activity nearby.
- Checking cathodic corrosion protection – an electric current that runs along the length of the pipeline to prevent the development of corrosion.
- Reviewing operating conditions of pipeline facilities such as storage wells and valve sites.



4.2 Summary Table

Table 4.1 Potential Impacts and Recommended Mitigation and Protective Measures

Feature Types	Environmental Feature(s)	Potential Impact(s)	Mitigation and Protective Measures	Net Impacts
Physical Features	Physiography and Surficial Geology <i>Section 3.4.1</i>	Disturbance to the overburden may cause surface soil erosion.	Erosion and sediment control (ESC) mitigation measures that should be followed include: <ul style="list-style-type: none">Where there is potential for soil erosion, the need for and location of ESC measures should be determined by an inspector with appropriate qualifications and installed prior to the commencement of work in the area.The contractor must obtain adequate quantities of materials to control erosion. Additional supplies should be maintained in a readily accessible location for maintenance and contingency purposes. ESC structures should be monitored to maintain their effectiveness throughout the life of construction and post-construction rehabilitation.Even with ESC measures, extreme precipitation events could result in collapse of silt fencing and other situations which could lead to erosion. When site conditions permit, permanent protection measures should be installed on erosion susceptible surfaces. If the erosion is resulting from a construction-related activity, the activity should be halted immediately until the situation is rectified.ESC should be maintained during construction. Where evidence of erosion exists, corrective control measures should be implemented as soon as conditions permit.Permits obtained under Ontario Regulation 41/24: Prohibition Activities, Exemptions and Permits of the <i>Conservation Authorities Act</i>.	With the implementation of the mitigation and protective measures, no significant adverse residual impacts due to physiography and surficial geology are anticipated.
Physical Features	Groundwater <i>Section 3.4.2</i>	<u>Hydrostatic Testing</u> Where hydrostatic testing occurs, the water will remain in the drilled wells and therefore no impacts are anticipated. <u>Dewatering</u> Where excavation encounters shallow groundwater conditions or following a large precipitation event, removing water (known as dewatering) may be necessary. During dewatering, discharge water will be released to the environment. An uncontrolled discharge of water could cause downstream flooding, erosion,	<u>Dewatering</u> <ul style="list-style-type: none">For groundwater dewatering, the MECP allows registration under the EASR for construction dewatering projects.To reduce the potential for erosion and scouring at discharge locations during construction dewatering, energy dissipation techniques should be used. Discharge piping should be free of leaks and should be properly anchored to prevent bouncing or snaking during surging. Protective measures may include dewatering at low velocities, dissipating water energy by discharging into a filter bag or diffuser, and using protective riprap or equivalent. If energy dissipation measures are found to be inadequate, the rate of dewatering should be reduced or dewatering discontinued until satisfactory mitigation measures are in place. Discharge should be monitored to make sure that no erosion or flooding occurs.	With the implementation of the mitigation and protective measures, no significant adverse residual impacts on groundwater are anticipated.



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Feature Types	Environmental Feature(s)	Potential Impact(s)	Mitigation and Protective Measures	Net Impacts
		<p>sedimentation, or contamination. Other potential effects of uncontrolled discharge may include introduction of foreign aquatic organism to a drainage basin and introduction of hazardous materials or pollutants to soils or bodies of water.</p> <p><u>Private Water Wells</u></p> <p>The nearest domestic well to TKC71 is located about 1 km north on Rokeby line, and the nearest domestic well to TKC70 is about 0.5 km south on Moore Line. Depending on the proximity to private wells, the depth of the well installation, and the groundwater levels encountered, dewatering has the potential to impact water well quality or quantity.</p>	<p><u>Private Water Wells</u></p> <ul style="list-style-type: none">A private well survey should be conducted to assess domestic groundwater use near the Project and a private well monitoring program may be recommended for residents who rely on overburden groundwater supply for domestic use. This monitoring program may include pre-construction water quality monitoring as well as water level monitoring, if available. Should a private water well be affected by Project construction, a potable water supply should be provided, and the water well should be repaired or restored as required.	
Physical Features	Aggregates and Petroleum Resources <i>Section 3.4.3</i>	As the Study Area is located in DSAs, Project construction may interact with existing infrastructure.	Enbridge Gas will follow internal procedures and communication protocols to identify and avoid adverse impacts to existing infrastructure in the DSAs.	With following procedures and communication, no significant adverse residual impacts on aggregates and petroleum resources are anticipated.
Physical Features	Soil and Soil Capability <i>Section 3.4.4</i>	<p>Excess soil may be generated on-site during construction activities that will require off-site management.</p> <p>Trenching and construction activities have the potential to affect soil quality. The movement of heavy machinery on wet soil may cause rutting and mixing of topsoil with subsoil. When exposed, soils are more prone to erosion due to the loss of vegetative cover. Improperly salvaged topsoil can result in topsoil and subsoil mixing, rutting, and erosion.</p>	<p><u>Excess Soil</u></p> <ul style="list-style-type: none">It is noted that the MECP has new regulations for the movement of excess soils in the province of Ontario. Though the Project is not expected to generate significant quantities of excess soil, Enbridge Gas should retain or consult with a qualified person who is knowledgeable in the current excess soils guidelines, to make recommendations for the management of excess soils. <p><u>Wet Soil Shutdown</u></p> <ul style="list-style-type: none">To the extent feasible, construction activities should occur during drier times of the year. Lands affected by heavy rainfall events should be monitored for wet soil conditions, to avoid the potential for topsoil and subsoil mixing and loss of structure. Construction activities should be temporarily halted on lands where excessively wet soil conditions are encountered. Enbridge Gas's on-site inspection team should determine when construction activities may be resumed.	With the implementation of the mitigation and protective measures, no significant adverse residual impacts on soil or soil capability are anticipated.



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Feature Types	Environmental Feature(s)	Potential Impact(s)	Mitigation and Protective Measures	Net Impacts
			<ul style="list-style-type: none">If a situation develops that necessitates construction during wet soil conditions, soil protection measures should be implemented, such as confining construction activity to the narrowest area practical, installing surface protection measures, and using wide tracked or low ground pressure vehicles <p><u>High Winds</u></p> <ul style="list-style-type: none">During construction activities, weather should be monitored to identify the potential onset of high wind conditions and to preserve topsoil. In the event that high winds occur, the contractor should implement protective measures such as:<ul style="list-style-type: none">Suspend earth moving operationsApply dust suppressants or vegetate the pilesProtect soil stockpiles with a barrier or windscreenIn conjunction with the above measures, all required materials and equipment should be readily accessible and available for use as required. <p><u>Soil Stripping</u></p> <ul style="list-style-type: none">Enbridge Gas should review the construction footprint and determine if soil stripping is feasible. If stripping is undertaken, topsoil/organize layer and subsoil should be stripped and stockpiled separately to avoid mixing.If clean-up is not practical during the construction year, it should be undertaken in the year following construction, starting once the soils have sufficiently dried. Interim soil protection measures should be implemented in sensitive areas to stabilize the soil for over-wintering. <p><u>Soil Compaction</u></p> <ul style="list-style-type: none">Within agricultural lands where soil has been compacted by the construction process, an agrologist should determine where decompaction may be necessary. Compaction can be alleviated by using farm equipment such as an agricultural subsoiler prior to replacing the topsoil. Sub-soiling with an agricultural subsoiler, followed by discing, chisel ploughing and cultivating, to smooth the surface, should be considered on agricultural lands. In high traffic areas where deep compaction persists, additional deep tillage or subsoiling may be required on a site-specific basis. Soil density and/or penetrometer measurements on and off the easement may be used as a means of assessing the relative degree of soil compaction caused by construction as well as determining that soil has been sufficiently de-compacted.	



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Feature Types	Environmental Feature(s)	Potential Impact(s)	Mitigation and Protective Measures	Net Impacts
Physical Features	Agricultural Tile Drainage <i>Section 3.4.5</i>	Where there is interaction with agricultural land, construction activities have the potential to crush and/or sever agricultural tile drains.	<p>Enbridge should consult with landowners of compacted agricultural lands to confirm the presence of random and systematic tile drainage. If tile drainage is present, Enbridge Gas should undertake standard mitigation during ground disturbance:</p> <ul style="list-style-type: none">• Develop site specific tile plans with an independent tile contractor.• Conduct pre-tiling and install header tile to maintain tile system function.• Record and flag severed or crushed tile drains• If a main drain, header drain, or large diameter drain is severed, maintain field drainage and prevent flooding of the work area and adjacent lands through temporary repairs• Cap the downstream side of severed drains that cross the excavation to prevent the entry of soil, debris and rodents, as required• Repair damaged and severed drains following construction• After repair and before backfilling, invite the landowner to inspect and approve the repair	With the implementation of the mitigation and protective measures, no significant adverse residual impacts on agricultural tile drains are anticipated.
Physical Features	Soybean Cyst Nematode <i>Section 3.4.6</i>	Lands with SCN or other pests and/or diseases have the potential to impact soil productivity, and to be transported by construction equipment from infected to non-infected locations.	<ul style="list-style-type: none">• In consultation with the landowner(s) and an agrologist, Enbridge Gas may develop and implement an agricultural soil sampling plan for potential pests and/or diseases that are known to the area. If the results indicate an issue or concern, in consultation with the landowner, Enbridge Gas will work with the agrologist to develop a best practice protocol.• Any imported topsoil used for rehabilitation will have a composite sample analyzed for identified concerns.	With the implementation of the mitigation and protective measures, no significant adverse residual impacts as a result of SCN are anticipated.
Physical Features	Regulated Area and Natural Hazards <i>Section 3.4.7</i>	<p>The likelihood of a flooding event interfering with Project construction is reduced by construction occurring outside of the spring freshet. A flooding event during construction could result in construction delays, soil erosion, trench slumping, and damage or loss of construction equipment as a result of equipment entering a watercourse. The nature of these impacts would depend on the spatial extent, duration, and magnitude of the event.</p> <p>The probability of significant seismic activity or tornado in the Study Area is low; therefore, no potential impacts are anticipated.</p>	<ul style="list-style-type: none">• If flooding necessitates a change in the construction schedule, affected landowners and regulatory agencies should be notified and construction should continue at non-affected locations.• All work in the floodplain will be subject to a permit under O. Reg 41/24 of the <i>Conservation Authorities Act</i> from the St. Clair Region Conservation Authority.	With the implementation of the mitigation and protective measures, no significant adverse residual impacts from natural hazards are anticipated.



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Feature Types	Environmental Feature(s)	Potential Impact(s)	Mitigation and Protective Measures	Net Impacts
Biophysical Features	Forest and Vegetation Cover <i>Section 3.5.2.1.2</i>	Natural vegetation in the Study Area is restricted to a narrow, naturalized hedgerow located east of TKC 71 along a field access road which consisted of shrubs and trees. No vegetation removal is required along the hedgerow is required to accommodate construction.	As no impacts are anticipated, no mitigation or protective measures are recommended.	As no impacts are anticipated, no net impacts will occur.
Biophysical Features	Wildlife Habitat, Wildlife, and Species at Risk <i>Section 3.5.2.1.3 – 3.5.2.1.4</i>	Impacts on wildlife populations from construction will be limited as no vegetation removal is planned. Impacts that may occur include direct mortality from animal-vehicle collisions from increased construction traffic and construction machinery, and temporary avoidance behavior due to the presence of humans and equipment.	<u>General Wildlife Mitigation</u> <ul style="list-style-type: none">• Equipment and vehicles should yield the ROW to wildlife.• Trench operations should be followed as closely as practical with backfill operations, to facilitate the movement of wildlife across the trench.• Gaps in stockpiles should be created, in consultation with a biologist, to allow for the potential movement of wildlife across the ROW.• Fencing should be installed around deep excavations to prevent wildlife entrapment.• The contractor should inform their personnel not to threaten, harass or injure wildlife.• If wildlife is encountered during construction, personnel are required to move away from the animal and wait for the animal to move off the construction site.• SAR cannot be handled unless authorized by MECP and MNRF.• A Wildlife Scientific Collector’s Permit (MNR authorization) will be required to handle wildlife.	With the effective implementation of the mitigation and protective measures, significant adverse residual impacts on wildlife, wildlife habitat, and SAR are not anticipated.



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Feature Types	Environmental Feature(s)	Potential Impact(s)	Mitigation and Protective Measures	Net Impacts
Socio-Economic Environment	Residents Section 3.6.1	Despite the lack of residents in vicinity to the Project, those travelling near the areas during construction may experience nuisance concerns of increased noise, equipment exhaust, and dust.	<ul style="list-style-type: none">During construction, motorized construction equipment should be equipped with mufflers. Company and construction personnel should avoid idling of vehicles; vehicles or equipment should be turned off when not in use unless required for operation of the vehicle or equipment. To the greatest extent activities that could create noise should be restricted to daylight hours and adhere to local noise by-laws. Sources of continuous noise, such as portable generators, should be shielded or situated to reduce disturbance to residents and businesses.Site practices during construction should be implemented that are in line with the document 'Best Practices for the Reduction of Air Emissions from Construction and Demolition Activities' prepared by Cheminfo Services Inc. for Environment Canada (Cheminfo Services Inc., 2005), which may include:<ul style="list-style-type: none">Maintaining equipment in compliance with regulatory requirementsProtecting stockpiles of friable material with a barrier or windscreen in the event of dry conditions and dustDust suppression of source areasCovering loads of friable materials during transportWatering for dust control must not result in the formation of puddles, rutting by equipment or vehicles, the tracking of mud onto roads, or the siltation of watercourses.	With the implementation of the mitigation and protective measures, no significant adverse residual impacts on residents are anticipated.



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Feature Types	Environmental Feature(s)	Potential Impact(s)	Mitigation and Protective Measures	Net Impacts
Socio-Economic Environment	Economy and Employment <i>Section 3.6.2</i>	<p>Project demands for labour and goods and services can result in both beneficial and adverse effects. Positive effects may not be evenly distributed among populations, with some residents in a better position to receive economic benefits than others. Similarly, adverse effects may affect some residents more than others. Residual effects on employment are related to the Project's labour demand compared to the labour supply. Three types of employment are considered:</p> <ul style="list-style-type: none">• Direct employment: labour that is hired directly for the Project• Indirect employment: labour hired by companies in order to produce and provide goods and services needed for the Project• Induced employment: labour hired by industries that produce and provide consumer items and services purchased by people who are directly or indirectly employed by the Project <p>During all phases of the Project, labour conditions will be affected by direct, indirect, and induced employment.</p> <p>The required workforce will create work opportunity for those living in Lambton County and will result in increased employment income and municipal government revenue.</p> <p>Local businesses, including businesses owned by Indigenous peoples, will also likely benefit from the Project through purchases of labour, goods, and services that will be needed to complete construction of the Project.</p> <p>While construction will generally result in positive effects on employment, some local businesses may be temporarily adversely impacted by increases in noise and traffic volumes during construction.</p>	<ul style="list-style-type: none">• Overall, it is expected that the Project will generally result in positive effects on employment by providing work opportunity for local and Indigenous people and increasing the employment rate. These positive effects do not require mitigation, but Enbridge Gas will identify and implement various mechanisms to enhance project benefits.• To further increase the positive effects generated from the Project, contractors should make all reasonable efforts, where practicable, to procure services and materials from local suppliers, where services or materials are available in required quantity and at competitive prices. To help encourage further local and Indigenous content on the Project, it is recommended that Enbridge Gas post purchasing requirements in advance, so that businesses can position themselves to effectively bid to supply goods and services needed for construction and operation. Increased participation of local and Indigenous businesses will enhance positive local economic effects.• To mitigate adverse impacts to existing businesses, see the measures recommended above for 'Residents'.	<p>With the aforementioned initiatives to encourage local and Indigenous participation on the Project, it is anticipated that the effects from the Project on employment and business will be positive, including creating positive economic activity through new direct, indirect, and induced employment. Project expenditures on local businesses and suppliers also have the potential to positively affect the local economies.</p> <p>Consultation with residents and businesses will address any concerns related to operation of the Project.</p> <p>With the implementation of the mitigation and protective measures, no significant adverse residual impacts on the economy and employment are anticipated.</p>



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Feature Types	Environmental Feature(s)	Potential Impact(s)	Mitigation and Protective Measures	Net Impacts
Socio-Economic Environment	Air Quality and Noise <i>Section 3.6.3</i>	Residential and business properties may experience noise, dust and equipment exhaust associated with construction activity. Drilling of the new well may also require blow down/flaring of natural gas. During operation, no substantial air or noise emissions are anticipated to occur.	<ul style="list-style-type: none">Mitigation and protective measures for air quality and noise are outlined in Section 3.6.1.	With the implementation of the mitigation and protective measures, no significant adverse residual impacts from air quality and noise are anticipated.
Socio-Economic Environment	Indigenous Interests, Land Use and Traditional Knowledge <i>Section 3.6.4</i>	Potential impacts on Indigenous Land Use, Traditional Knowledge, and Indigenous interests are still being determined.	The ER will be provided to Indigenous peoples for their review and comment. Upon their review, Enbridge Gas will work with Indigenous peoples to better understand potential impacts and associated mitigation measures.	If potential impacts are identified Enbridge Gas will work with Indigenous peoples to better understand these potential impacts and associated mitigation measures.
Socio-Economic Environment	Built Heritage Resources and Cultural Heritage Landscapes <i>Section 3.6.5</i>	There are no anticipated impacts to Built Heritage Resources and Cultural Heritage Landscapes.	As no impacts to cultural heritage resources are anticipated, no mitigation or protective measures are recommended.	As no cultural heritage resources will be impacted, there will be no net impacts.
Socio-Economic Environment	Archaeological Resources <i>Section 3.6.6</i>	There are no anticipated impacts to archaeological resources.	As no impacts to archaeological resources are anticipated, no protective measures are recommended.	As no archaeological resources will be impacted, there will be no net impacts.



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5 Cumulative Effects Assessment

The recognition of cumulative effects assessment (CEA) as a best practice is reflected in many regulatory and guidance documents. Regarding the development of hydrocarbon pipelines in Ontario, the *OEB Environmental Guidelines* (2023) notes that cumulative effects should be identified and discussed in the ER.

Building upon the intent of the *OEB Environmental Guidelines* (2023), the OEB has specified that only those effects that are additive or interact with the effects that have already been identified as resulting from the Project are to be considered under cumulative effects. In such cases, it will be necessary to determine whether these effects warrant mitigation measures. The CEA has been prepared with consideration of this direction from the OEB.

5.1 Methodology

The CEA describes the potential cumulative effects resulting from the interaction of residual effects of constructing and operating the proposed storage wells and ancillary pipeline with the effects of other unrelated projects. The other projects assessed are those that are either existing or approved and that have a high likelihood of proceeding.

Cumulative effects include the temporal and spatial accumulations of change that occur in an area or system due to past, present, and future activities. Change can accumulate in systems by either an additive (i.e., cumulative) or interactive (i.e., synergistic) manner. Positive residual effects have not been assessed in the CEA.

By applying the principles of avoidance, reduction, and compensation to limit project-specific effects, potential adverse residual effects on environmental and socio-economic features have been greatly limited before accounting for the effects of other unrelated projects.



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The CEA methodology is designed to evaluate and manage the additive and interactive effects from the following sources:

- Existing infrastructure, facilities, and activities as determined from available data sets
- The proposed Project
- Future activities where the undertaking will proceed, or has a high probability of proceeding

Although rare in occurrence, it is plausible that accidents or emergency events may arise due to an unforeseen chain of events during the Project's construction or operational life. Due to the rarity and magnitude of such events, they have not been assessed here, as they are extreme in nature when compared to the effects of normal construction and operation activities and require separate response plans.

5.2 Study Boundaries

Spatial

To make assumptions about the magnitude and probability of effects, an approximate 200 m boundary around the Project location was used for the cumulative effects assessment. The 200 m boundary has been found, through previous experience with pipeline construction, to be appropriate for the most commonly encountered net effects.

Temporal

The temporal boundaries for the cumulative effects assessment reflect the nature and timing of project activities, and the availability of information surrounding future projects with a high probability of proceeding. The Project schedule identifies three key milestone activities:

- ER and technical design – 2024 to 2025
- Construction – Q2 2026



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- Operation and Maintenance – 2026 to 2076*

**Fifty years of operation is used as an assumption, although the wells may be operational beyond fifty years.*

Based upon these milestone activities, two time periods were selected for evaluation: 2026 and 2031. The year 2026 was selected to represent the construction period, and the year 2031 was selected to represent the operation and maintenance period. Forecasting beyond 2031 increases the uncertainty in predicting whether projects will proceed, and the effects associated with these projects.

5.3 Project Inclusion List

As part of the study of cumulative effects, projects that are either currently existing, and those that have been approved and are scheduled (or are likely to be scheduled) during the construction period and early operation and maintenance of the Project, were reviewed. This was undertaken by reviewing publicly available information for projects and activities with the potential for effects to interact with the identified effects of the proposed pipeline in the spatial and temporal study boundaries. The following resources were reviewed:

- Impact Assessment Agency of Canada, Canadian Impact Assessment Registry (IAAC 2024)
- Government of Ontario, Environmental Assessment Projects by Category (Government of Ontario 2024)
- Government of Ontario, Renewable Energy Approvals (Government of Ontario 2024b)
- Ministry of Transportation (MTO), Ontario's Highways Program Interactive Map (MTO 2024)
- Canadian Energy Regulator (CER), Major Facilities Applications (CER 2024)



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- OEB Applications Currently Before the Board (facilities applications only) (OEB 2024)

Based on the review of publicly available resources and project specific stakeholder consultation that was completed, there were no projects observed in the Study Area which could be included for consideration of cumulative effects. Regardless, it is assumed that on-going improvements, upgrades, and maintenance to local and county roads, drains, and culverts may overlap with the construction of the wells. It is also assumed that on-going improvements, upgrades, and maintenance to private properties such as residences and businesses may occur in the spatial and temporal boundaries.

5.4 Analysis of Cumulative Effects

The ER considers the potential impacts of the Project on specific features and conditions and proposes mitigation and protective measures to eliminate or reduce the potential impacts. The CEA evaluates the significance of residual impacts (after mitigation) of the Project along with the effects of other unrelated projects.

5.4.1 Construction – 2025

As the drilling pad construction is planned for 2025, minor impacts to residents and businesses due to road and drain maintenance/improvements may occur. As such, residual project impacts which may occur during project construction consider the additive and interactive effects at their maximum intensity, the CEA assumes that other unrelated projects and well construction may occur concurrently.

Potential cumulative effects resulting from well construction and the activities noted above are additive effects on air quality and acoustic environment, traffic, and wildlife and wildlife habitat.

Enbridge Gas will continue consultations with township and county municipal staff to reduce the potential for construction activities that may lead to cumulative effects and coordinate plans to reduce resultant effects during construction. Provided that



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construction activities implement similar mitigation and protective measures as those recommended for well construction, adverse cumulative effects on either biophysical features or the socio-economic environment are predicted to be of low probability and magnitude, short duration (2-3 months), and reversible. Therefore, adverse residual cumulative effects during construction are not anticipated to be significant.

Air Quality and Acoustic Environment

Potential residual effects on air quality associated with construction of the Project and concurrent projects are an increase in noise and air pollutants from operation of vehicles and equipment, and an increase in dust from construction activities. Mitigation and protective measures for air quality and the acoustic environment are outlined in Table 4.1. Provided that the concurrent projects follow mitigation measures similar to those outlined in this report, cumulative effects should be of low magnitude and reversible. Therefore, adverse residual cumulative effects on air quality and the acoustic environment are not anticipated to be significant.

Traffic

An increase in traffic may occur during the potential concurrent construction of the wells and concurrent projects. A Traffic Management Plan will be employed during construction. Provided that concurrent projects follow mitigation measures similar to those outlined in this report, cumulative effects should be of low magnitude and reversible. Therefore, adverse residual cumulative effects on traffic are not anticipated to be significant.

Wildlife and Wildlife Habitat

Potential residual effects on wildlife and wildlife habitat associated with construction of the Project are accidental direct mortality and sensory disturbance. Mitigation and protective measures for wildlife and wildlife habitat are outlined in Table 4.1. In the event of project-related wildlife mortality, the MECP should be contacted. If mortality occurs between concurrent projects for similar species, the MECP will be able to note



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the occurrences and coordinate with Enbridge Gas to adjust construction activities and/or mitigation. Potential cumulative effects resulting from sensory disturbance may result from construction noise, traffic, air pollution, and dust.

Provided that the mitigation and protective measures are undertaken, and provided that concurrent projects follow mitigation measures similar to those outlined in this report, adverse cumulative residual effects on wildlife and wildlife habitat should be of low probability and will be mitigated as coordinated through the MECP. Therefore, adverse cumulative residual effects on wildlife and wildlife habitat are not anticipated to be significant.

5.4.2 Operation and Maintenance – 2031

Development and maintenance activities which have a probability of proceeding during operation and maintenance of the Project include:

- Road works: Future road rehabilitation and resurfacing.
- Water works: Future installation of water and wastewater pipelines
- Pipeline construction and maintenance: Future pipeline construction and maintenance of existing hydrocarbon infrastructure

Operation and maintenance of the wells will have relatively little impact on the environment. On a day-to-day basis there is no operational noise that is anticipated to occur following Project construction. Should maintenance be necessary, this will be the only anticipated instance when the Project would have potential temporary impacts during its operation.

Operation and maintenance activities undertaken by Enbridge Gas will be completed in co-ordination with the Lands, Permitting and Environment Team and will consider any potential impacts on the environment. Appropriate mitigation measures will be developed and implemented based on the proposed maintenance work and all necessary agency permits and approvals will be secured, as required. Given the limited



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scale of impact of any potential operation and maintenance activities, it is anticipated that residual impacts will be minimal and that should any interaction occur with other projects, adverse residual effects are not anticipated to be significant.

5.5 Summary of Cumulative Effects

The potential cumulative effects of the Project were assessed by considering development that has a high probability of proceeding just prior to or concurrent with construction of the Project. A 200 m boundary around the Study Area was used to assess the potential for additive and interactive effects of the Project and other developments on environmental and socio-economic features.

While no projects were identified to be occurring concurrently with this Project, it is assumed that minor maintenance activities will take place. The cumulative effects assessment determined that, provided the mitigation and protective measures outlined in this report are implemented and that concurrent projects implement similar mitigation and protective measures, potential cumulative effects are not anticipated to occur, or if they do occur are not anticipated to be significant.



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6 Monitoring and Contingency Plans

6.1 Monitoring

The primary objective of compliance and effects monitoring is to check that mitigation and protective measures are effectively implemented and to measure the impacts of activities associated with construction on environmental and socio-economic features. Ultimately, the knowledge gained from monitoring is used to avoid or reduce issues which may arise during construction of subsequent pipeline projects.

Previous hydrocarbon construction experience, and a review of post-construction monitoring reports from other projects, indicates that impacts from construction are for the most part temporary. The mitigation and protective measures to eliminate or reduce impacts are well known and have been shown to be effective. Enbridge Gas should adhere to the following general monitoring practices:

- Trained personnel should be on-site to monitor construction and should be responsible for checking that the mitigation and protective measures and monitoring requirements in the ER are executed. Enbridge Gas should implement an orientation program for inspectors and contractor personnel to provide information regarding Enbridge Gas' environmental program and commitments, as well as safety measures.
- Construction techniques, procedures and contract provisions that will be applied by the contractor during construction to mitigate negative impacts should be included in contract documents.
- A walking inspection of the Project footprint should be completed three months and 15 months after the in-service date to determine whether areas require further rehabilitation or as required by OEB conditions of approval.



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The following sections list specific environmental monitoring activities recommended for the Project.

6.1.1 Exposed Soils

Where soils are exposed for construction activities, potential effects may include surface soil erosion and trench slumping. Improper water discharge can lead to erosion and sedimentation. Monitoring of potential effects on exposed soils should occur.

6.1.2 Wildlife

Should the presence of SAR be identified in the Study Area, construction monitoring will need to be undertaken. The exact nature of monitoring will be determined in consultation with the MECP.

6.1.3 Residents and Businesses

Construction activities may impact landowners and surrounding residents and businesses. During construction, a designated Enbridge Gas representative should be available to monitor and respond to requests and concerns voiced by residents and business owners. Landowners affected by construction should be notified in advance of construction activities in their area, as feasible. The notification should provide the contact information for a designated Enbridge Gas representative.

While efforts will be undertaken to reduce impacts, a comment tracking system should also be implemented. An Enbridge Gas representative should record the time and date of calls, the nature of the concern, the corrective action taken, and the time and date of follow-up contact.

Following completion of construction, Enbridge Gas should contact residents and businesses within and adjacent to the project area to continue ongoing communications where necessary. During the first 15 months particular attention should be paid to monitoring and documenting impacts associated with construction of the Project.



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6.2 Contingency

Contingency planning is necessary to prevent a delayed or ineffective response to unexpected events or conditions that may occur during construction of the proposed pipeline. An essential element of contingency planning is the preparation of plans and procedures that can be activated if unexpected events occur. The absence of contingency plans may result in short or long-term environmental impacts and possibly threaten public safety.

The following unexpected events require contingency planning during construction: contaminated sites, accidental spills, and unexpected finds. Although unexpected problems are not anticipated to occur during construction, Enbridge Gas and the contractor should be prepared to act. Construction personnel should be made aware of and know how to implement contingency measures prior to starting any activities in the field.

6.2.1 Contaminated Sites (Suspect Soils Program)

The potential exists for unknown material to be encountered during construction. If evidence of potential contamination is found, such as buried tanks, drums, oil residue or gaseous odour, construction should cease, and Enbridge Gas's Suspect Soils Program should be implemented.

If potentially contaminated sites are encountered, the on-site contractor supervisor and owner representative should be notified immediately, as well as Enbridge Gas's Environment Department.

6.2.2 Accidental Spills

During construction, there is the potential for an accidental spill to occur. The impact of the spill will depend upon the magnitude and extent of the spill, and the environmental and socio-economic conditions in which it takes place. Upon release of a hydrocarbon-based construction fluid, Enbridge Gas should immediately determine the magnitude



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and extent of the spill and rapidly take measures to contain it. Release of sediment should also be treated as a potential spill depending on the magnitude and extent. Spills should be immediately reported to Enbridge Gas's on-site inspection team and Environment Department. The MECP Spills Action Center should be notified at 1-800-268-6060 for any or all spills. If requested through consultation, Indigenous communities identified on the Project contact list should be notified of reportable spills.

A Spills Response Plan should be developed, reviewed with personnel, and posted in site trailers. Spill containment equipment should be readily available. Personnel should be trained in the use of spill containment equipment.

6.2.3 Unexpected Finds: Archaeological or Human Remains

Should previously undocumented archaeological resources be discovered, they may be a new archaeological site and therefore subject to Section 48(1) of the *Ontario Heritage Act*. The proponent or person discovering the archaeological resources must cease alteration of the site immediately and contact a licensed archaeologist to carry out archaeological assessment, in compliance with Section 48(1) of the *Ontario Heritage Act*. A site-specific response plan should then be employed following further investigation of the specific find

The *Funeral, Burial and Cremation Services Act*, 2002, S.O. 2002, c.33 requires that any person discovering human remains must cease all activities immediately and notify the police or coroner. If the coroner does not suspect foul play in the disposition of the remains, in accordance with *Ontario Heritage Regulation 30/11* the coroner shall notify the Registrar, Ontario Ministry of Public and Business Service Delivery and Procurement, which administers the provisions of that Act related to burial sites. In situations where human remains are associated with archaeological resources, the Ministry of Citizenship and Multiculturalism should also be notified (at archeology@ontario.ca) to ensure that the archaeological site is not subject to unlicensed alterations which would be a contravention of the *Ontario Heritage Act*.



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Enbridge Gas is committed to keeping interested Indigenous peoples engaged on any unearthed artifacts and/or human remains discovered in relation to their projects. If the coroner does not suspect foul play in the disposition of the remains, in accordance with O. Reg. 30/11 the coroner shall notify the Registrar, Ontario Ministry of Public and Business Service Delivery, which administers provisions of the Act related to burial sites. In situations where human remains are associated with archaeological resources, the MCM should also be notified (at archaeology@ontario.ca) to ensure that the archaeological site is not subject to unlicensed alterations which would be a contravention of the *OHA*.



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7 Conclusion

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7 Conclusion

The environmental study investigated data on the physical, biophysical, and socio-economic environment in the Study Area. In the opinion of Stantec, the mitigation and protective measures, and contingency measures, are considered appropriate to protect the features encountered. Monitoring will assess whether mitigation and protective measures were effective in both the short and long term.

With the implementation of the recommendations in this Report, ongoing communication and consultation, and adherence to permit, regulatory, and legislative requirements, potential adverse residual environmental and socio-economic impacts of this Project are not anticipated to be significant.



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Appendices



2026 Kimball-Colinville Wells Drilling Project: Environmental Report
Appendix A Consultation Materials
November 7, 2025

Appendix A Consultation Materials



2026 Kimball-Colinville Wells Drilling Project: Environmental Report
Appendix A Consultation Materials
November 7, 2025

Appendix A.1 Letter of Delegation and Contact List



Ministry of Energy and Mines

Energy Networks and Indigenous
Policy Branch

Indigenous Energy Policy

77 Grenville Street, 6th Floor
Toronto, ON M7A 2C1
Tel: (416) 562-9492

Ministère de l'Énergie et des Mines

Direction Générale des Réseaux
Énergétiques et des Politiques
Autochtones

Politique Énergétique Autochtones

77 Rue Grenville, 6^e Étage
Toronto, ON M7A 2C1
Tel: (416) 562-9492



June 17, 2025

VIA EMAIL

Olatunbosun Ishola
Advisor, Regulatory Applications – Leave to Construct
Enbridge Gas Inc.
olatunbosun.ishola@enbridge.com

Re: Kimball Colinville Well Drilling Project

Dear Olatunbosun Ishola:

Thank you for notifying the Ministry of Energy and Mines (MEM) of Enbridge Gas Inc. (Enbridge)'s proposed Kimball Colinville Well Drilling Project (the Project).

We understand that Enbridge is proposing to drill two new injection/withdrawal natural gas storage wells (Tecumseh Kimball-Colinville 70 and Tecumseh Kimball-Colinville 71) in the Kimball-Colinville Designated Storage Area and install approximately 50 to 70m of Nominal Pipe Size 8-inch lateral natural gas pipeline from each well to the existing Kimball-Colinville gathering pipeline. We also understand the project will involve construction of temporary gravel drilling pads that will be approximately 8,000 square meters, the installation of a permanent gravel pad of 96m² around the well, and the installation of a permanent access laneway to the well.

Duty to Consult with Indigenous Communities

The Government of Ontario (the Crown) has a constitutional Duty to Consult and, where appropriate, accommodate Indigenous communities when it has knowledge of established or credibly asserted Aboriginal or treaty rights protected under section 35 of Canada's *Constitution Act 1982* (s. 35 rights), and it contemplates conduct that might adversely affect those rights. These consultations are in addition to those mandated by statute, although these processes can be integrated.

Although the Crown remains legally obligated to consult, it may delegate the procedural aspects of consultation to project proponents. The procedural aspects of the Duty to Consult refer to those portions of the consultation process, including sharing information, holding meetings, and receiving comments from Indigenous communities. Project proponents are typically best positioned to address the specific planning, technical, and environmental aspects of projects, and, where appropriate, to consider possible ways to address or mitigate concerns raised by Indigenous communities about the project's potential impacts. The Crown remains responsible for the substantive aspects of the consultation, including providing oversight of the consultation process and ensuring the adequacy of consultation with the communities to whom the Duty to Consult is owed.

Delegation of Procedural Aspects of the Crown's Duty to Consult

Based on MEM's review of the information provided by Enbridge concerning the Project, including the nature and location of the Project, anticipated environmental effects, and the Crown's current understanding of established or credibly asserted s. 35 rights in the Project area, MEM has determined that the Crown does have a duty to consult with Indigenous communities in respect of the Project. Therefore, on behalf of the Crown, MEM is delegating to Enbridge, through this letter, the procedural aspects of consultation in respect of the Project.

Please see the appendix for detailed information on the respective roles and responsibilities of the provincial Crown and Enbridge. You should seek guidance from MEM at any time if you are unclear about your roles and responsibilities.

Potentially Impacted Indigenous Communities

Based on the Crown's assessment of established and credibly asserted s. 35 rights and potential Project impacts, Enbridge should consult with the following Indigenous communities:

Community	Contact Information
Aamjiwnaang First Nation	978 Tashmoo Ave, Sarnia, ON N7T 7H5 T: (519) 336-8410 cjackson@aamjiwnaang.ca
Bkejwanong (Walpole Island First Nation)	117 Tahgahoning Road RR 3, Wallaceburg, ON N8A 4K9 T: (519) 627-1481 larissa.wrightman@wifn.org dean.jacobs@wifn.org
Chippewas of Kettle and Stony Point First Nation	6247 Indian Lane Kettle and Stony Point First Nation, ON N0N 1J1 T: (519) 786-2125

	consultation@kettlepoint.org
Chippewas of the Thames First Nation	320 Chippewa Road RR 1, Muncey, ON, N0L 1Y0 T: (519) 289-5555 rsmith@cottfn.com
Oneida Nation of the Thames	2212 Elm Avenue, Southwold, ON N0L 2G0 T: (519) 652-3244 environment@oneida.on.ca

This rights-based consultation list is subject to change as new information becomes available or the scope of the Project evolves. For example, First Nation and/or Métis communities may make new rights assertions at any time, and project-related developments may require additional Indigenous communities to be notified and/or consulted. A community may also indicate that they are not interested in being consulted regarding the Project. If any of the above should occur, Enbridge must notify MEM immediately to consider updates to the consultation list.

We recommend contacting the Crown if you are unsure how to address a concern raised by an Indigenous community, particularly if the concern relates to a potential adverse impact on established or credibly asserted s. 35 rights. Consultation is ongoing throughout the project's duration, encompassing project development and design, consultation, approvals, construction, operation, and decommissioning.

If you become aware of potential impacts to s.35 rights of Indigenous communities that are not listed above at any stage of the project, please bring this to the attention of MEM with any supporting information regarding the claim at your earliest convenience.

Depth of Consultation

Based on currently available information about the Project's anticipated impacts, MEM's preliminary assessment has determined that consultation is owed at the low level of the consultation spectrum for all communities listed above. As such, MEM requires Enbridge to, at a minimum, notify the community of the Project; share information about the Project and provide an opportunity for the community to comment.

Any issues a community raises should be discussed and considered, taking into account the potential impact on rights, with mitigation or other forms of accommodation identified where appropriate. Enbridge's initial notice to the community regarding the Project could include a request to confirm whether the community believes the Project will impact their rights and whether they are interested in being consulted. Enbridge should continue to provide high-level notifications at each project stage milestone if no response is received.

Should information become available throughout the consultation process to suggest that project impacts will be significant enough to warrant a deeper level of consultation, Enbridge must inform MEM to provide updated guidance. If no response is received, the proponent should continue to provide high-level notifications at key project stage milestones.

Indigenous Consultation Record

Please send an Indigenous Consultation Record (ICR) as described in the appendix to the MEM contact identified in this delegation letter. The ICR will provide MEM with an opportunity to review the consultations undertaken to date, to understand any rights-based concerns raised, to assess the adequacy of the rights-based consultation conducted by Enbridge, and, where appropriate, to provide further direction to Enbridge on any additional consultations that should be undertaken. An ICR should be maintained and updated throughout the life of the Project, and ICR updates should be provided to MEM from time to time if any new s.35 rights-based issues or concerns are identified before key Project milestones. Please contact MEM if you have any questions about the appropriate time to provide MEM with an ICR or an update to an existing ICR.

Acknowledgement

Enbridge acknowledges this Crown delegation and the procedural consultation responsibilities enumerated in the appendix through receipt of this letter. Enbridge also acknowledges that it will endeavour to support the Crown's ongoing oversight of the consultation process by continuing to share with MEM any Project-related issues and concerns identified by Indigenous communities throughout the life of the Project. If you have any questions about these requirements, please contact David Woodard at David.Woodard@ontario.ca or Chloe Lazakis at chloe.lazakis@ontario.ca.

I trust that this information provides clarity and direction regarding the respective roles of the Crown and Enbridge.

Sincerely,

Shannon McCabe

Shannon McCabe
Manager, Strategic Indigenous Initiatives
Ministry of Energy and Mines

c: Amy Gibson, Manager, Indigenous Energy Policy, Ministry of Energy and Mines
Ontario Pipeline Coordinating Committee (OPCC)

APPENDIX: ROLES AND RESPONSIBILITIES OF THE PROPONENT AND THE CROWN RELATED TO THE DUTY TO CONSULT WITH INDIGENOUS COMMUNITIES

Duty to Consult Roles and Responsibilities Delegated to Enbridge (the Proponent)

Please refer to the letter above for specific guidance on the project. On behalf of the Crown, please be advised that your responsibilities as Project Proponent for this Project include:

- providing notice(s) of accurate, complete, and plain language information about the Project to Indigenous communities identified in the letter above, with sufficient detail and at a stage(s) in the process that allows the communities to prepare their views on the Project and, if appropriate, for changes to be made to the Project. Project information may include:
 - a detailed description of the nature and scope of the Project, textual or otherwise, and translations into Indigenous languages where appropriate;
 - a description of the Project location;
 - maps or other visuals showing the Project location and any other affected area(s);
 - information about the Project lands (e.g. whether the Project is on privately owned or Crown-controlled lands);
 - information about the potential negative effects of the Project on the environment, including their severity, geographic scope, and likely duration. This can include, but is not limited to, effects on ecologically sensitive areas, water bodies, wetlands, forests; species at risk and/or the habitat of species at risk;
 - identification of any measures to avoid, minimize or mitigate potential adverse impacts;
 - a description of Project milestones and projected timing for the same;
 - details about other provincial or federal approvals that may be required for the Project to proceed; and
 - any additional information that might be helpful to the community;
- a written request to Indigenous communities to provide in writing or through a face-to-face meeting:
 - any information available to them that should be considered when preparing the Project documentation;
 - any potential adverse Project impacts on their established or credibly asserted s. 35 rights;
 - any suggested measures for avoiding, minimizing or mitigating potential adverse impacts; and

- information, for the community's approval, about how information provided by the Indigenous community as part of the consultation process will be collected, stored, used, and shared;
- any additional information that might be helpful to the community;
- identifying a requested timeline for response(s) from the Indigenous community;
- an indication of the Proponent's availability to discuss the process and provide further information about the Project;
- the Proponent's contact information; and
- any additional information that might be helpful to the community;
- following up, as necessary, with Indigenous communities to ensure they received Project notices and information and are aware of the opportunity to comment, raise questions or concerns and identify potential adverse impacts on their established or credibly asserted rights;
 - If a community is unresponsive to efforts to notify and consult, the Proponent should nonetheless make attempts to update the community on the progress of the Project, the environmental assessment (if applicable) and any other regulatory approvals.
- bearing the reasonable costs associated with the procedural aspects of consultation (e.g., paying for meeting costs, making technical support available) and providing reasonable capacity funding to Indigenous communities to assist in their participation in the consultation process;
- gathering information about how the Project may adversely affect Aboriginal or treaty rights, including gathering information about land use and traditional knowledge;
- consider and respond to comments and concerns raised by Indigenous communities and answer questions about the Project and its potential impacts on established or credibly asserted s. 35 rights;
- as appropriate, discussing and implementing changes to the Project in response to concerns raised by Indigenous communities. This could include modifying the Project to avoid or minimize an impact on established or credibly asserted s. 35 right (e.g., altering the season when construction will occur to avoid interference with mating or migratory patterns of wildlife); and
- informing Indigenous communities about how their concerns were taken into consideration and whether the Project proposal was altered in response. It is considered best practice to provide the Indigenous community with a copy of the consultation record as part of this step for verification purposes.

If you are unclear about the nature of a concern raised by an Indigenous community, you should seek clarification and further details from the community, provide opportunities to listen to community concerns and discuss options, and clarify any issues that fall outside the scope of the consultation process. These steps should

be taken to ensure that the consultation process is meaningful and that concerns are heard and, where possible, addressed.

You can also seek guidance from the Crown at any time. It is recommended that you contact the Crown if you are unsure about how to deal with a concern raised by an Indigenous community, particularly if the concern relates to a potential adverse impact on established or asserted Aboriginal or treaty rights.

The consultation process must maintain sufficient flexibility to respond to new information. We request that you make every reasonable effort to establish positive relationships with all Indigenous communities that may be affected by the Project. If you are unclear about the nature of a concern raised by an Indigenous community, you should seek clarification and further details from the community, provide opportunities to listen to community concerns and discuss options, and clarify any issues that fall outside the scope of the consultation process. These steps should be taken to ensure that the consultation process is meaningful and that concerns are heard and, where possible, addressed. If a community is unresponsive to efforts to notify and consult, you should nonetheless make an effort to update the community on the project's progress, the environmental assessment (if applicable), and other relevant regulatory approvals.

If the Proponent retains sub-contractors to support the procedural aspects of consultation undertaken by the Proponent, Indigenous communities should be made aware of the sub-contractors role, and the Proponent should inform the Crown if any issues concerning established or asserted s. 35 rights arise.

Consultation should occur throughout the project's duration, including project development and design, approvals, construction, operation, and decommissioning. The Proponent should consider how it will support the Crown's ongoing oversight of the consultation process throughout the life of the Project. You should make every reasonable effort to establish positive relationships with all Indigenous communities that may be affected by the Project. You may wish to consider translating communications with communities into Indigenous languages or other languages, where appropriate.

If you reach a business arrangement with an Indigenous community that may affect or relate to the Crown's duty to consult, we ask that the Crown be advised of those aspects of such an arrangement that may relate to or affect the Crown's consultation obligations and that the community itself be apprised of the Proponent's intent to so-apprise the Crown. Whether or not any such business arrangements may be reached with any community, the Crown expects the Proponent to fulfill all its delegated procedural consultation responsibilities to the satisfaction of the Crown.

The Crown reserves the right to participate in the consultation process as it sees fit, including, but not limited to, providing further instructions to proponents on delegated procedural aspects of consultation or directly undertaking additional consultation with

Indigenous communities. The Crown reserves the right to add communities throughout the consultation process.

Duty to Consult Roles and responsibilities assumed directly by the Crown

The role of the Crown in fulfilling any duty to consult and accommodate in relation to this Project includes:

- identifying the Proponent and updating, as appropriate, the Indigenous communities to consult for the fulfillment of the Crown duty;
- notifying Indigenous communities that they have been identified for consultation and that the procedural aspects of consultation have been delegated to the Proponent;
- carrying out, from time to time, any necessary assessment of the extent of consultation or, where appropriate, accommodation required for the project to proceed;
- supervising the aspects of the consultation process delegated to the Proponent;
- determining in the course of Project approvals whether the consultation of Indigenous communities was sufficient; and
- determining in the course of Project approvals whether accommodation of Indigenous communities, if required, was appropriate and sufficient.

If the Crown considers that there are outstanding issues related to consultation, the Crown may undertake additional consultation with Indigenous communities.

Indigenous Consultation Record

It is important to ensure that all consultation activities undertaken with Indigenous communities are fully documented. This includes all attempts by the Proponent, or any subcontractors or consultants retained by the Proponent to support the procedural aspects of consultation undertaken by the Proponent, such as notifying or consulting the community, all interactions with and feedback from the community, and all efforts to respond to community concerns. Crown regulators require a comprehensive consultation record to assess whether Aboriginal consultation and any necessary accommodations are sufficient for the Project to receive Ontario government approvals. The consultation record should include, but not be limited to, the following:

- a list of the identified Indigenous communities that were contacted;
- details of all attempts to notify or contact the community regarding the Project, all interactions with and feedback from the community, and all efforts to respond to community concerns, including:
 - copies of correspondence (e.g., letters and electronic communications) sent and received;

- any evidence that communications were distributed to and received by the Indigenous communities (e.g., courier slips);
- where a community has been non-responsive to multiple efforts to contact the community, a record of such multiple attempts and the responses or lack thereof.
- a written summary of consultations with Indigenous communities and appended documentation such as copies of notices, any meeting summaries or notes including where the meeting took place and who attended, and any other correspondence (e.g., letters and electronic communications sent and received, dates and records of all phone calls);
- Sub-contractors, if any, that are retained by the Proponent to support the procedural aspects of consultation undertaken by the Proponent, information about their role and how Indigenous communities were made aware of the sub-contractor's role as well as any issues that may have arisen concerning established or asserted s. 35 rights.
- responses and information provided by Indigenous communities during the consultation process. This includes information on Aboriginal or treaty rights, traditional lands, claims, or cultural heritage features and information on potential adverse impacts on such Aboriginal or treaty rights and measures for avoiding, minimizing, or mitigating potential adverse impacts to those rights and
- a summary of the rights/concerns and potential adverse impacts on s. 35 rights or on sites of cultural significance (such as burial grounds and archaeological sites) identified by Indigenous communities, how comments or concerns were considered or addressed, and any changes to the Project as a result of the consultation, such as:
 - changing the Project scope or design;
 - changing the timing of proposed activities;
 - minimizing or altering the site footprint or location of the proposed activity;
 - avoiding impacts to the s. 35-related interest;
 - environmental monitoring; and
 - other mitigation strategies.
- Throughout the life of the Project, Indigenous Consultation Records should be updated with any significant interactions regarding s. 35 rights-based issues, and these significant updates should be shared with MEM.

As part of its oversight role, the Crown may, at any time during the consultation and approvals stage of the Project and beyond, request records from the Proponent relating to consultations with Indigenous communities. Any records provided to the Crown will be subject to the *Freedom of Information and Protection of Privacy Act*; however, they may be exempted from disclosure under section 15.1 (Relations with Aboriginal communities) of the Act. Additionally, please note that the information provided to the Crown may also

be subject to disclosure where required under any other applicable laws or as part of other dispute resolution proceedings.

The nature of the contents of the consultation record should be shared with the Indigenous communities consulted, and their permission to share this information with the Crown should be obtained. It is considered best practice to share an Indigenous community's consultation record with the community prior to finalizing it, ensuring it is a robust and accurate record of consultation.

Project Contact List

Agencies

Provincial Agencies

First Name	Surname	Organization	Department	Position	Address	City/Town	Province	Postal Code	Telephone	E-Mail	Cc List
Marc	Bechard	Ministry of Environment, Conservation and Parks	Sarnia District Office	Supervisor	1094 London Rd	Sarnia	ON	N7S 1P2	519-336-4030	marc.bechard@ontario.ca	
Laura	Collings	Ministry of Environment, Conservation and Parks	Source Protection Screening - Conservation and Source Protection Branch	Program Analyst					249-733-1157	SourceProtectionScreening@ontario.ca	-

Conservation Authority

First Name	Surname	Organization	Department	Position	Address	City/Town	Province	Postal Code	Telephone	E-Mail	Cc List
Melissa	Deisley	St. Clair Region Conservation Authority	Planning and Regulations	Director of Planning and Regulations	205 Mill Pond Crescent	Strathroy	ON	N7G 3P9	519-245-3710 ext. 251	mdeisley@scrc.ca	CC: planning@scrc.ca
Jeff	Vlasman	St. Clair Region Conservation Authority	Planning and Regulations	Regulations Coordinator	205 Mill Pond Crescent	Strathroy	ON	N7G 3P9	519-245-3710 ext. 254	jvlasman@scrc.ca	



Ontario Pipeline Coordinating Committee

First Name	Surname	Organization	Department	Position	Address	City/ Town	Province	Postal Code	Telephone	E-Mail	Cc List
Karla	Barboza	Ontario Pipeline Coordinating Committee	Ministry of Citizenship and Multiculturalism, Heritage Planning Unit	Team Lead, Heritage	400 University Avenue, 5th floor	Toronto	ON	M7A 2R9	416-660-1027	karla.barboza@ontario.ca	heritage@ontario.ca james.hamilton@ontario.ca
Erick	Boyd	Ontario Pipeline Coordinating Committee	Ministry of Municipal Affairs and Housing Municipal Services Office - Western	Manager, Community Planning and Development	659 Exeter Road, 2nd Floor	London	ON	N6E 1L3	519-873-4025	erick.boyd@ontario.ca	
Gary	Highfield	Ontario Pipeline Coordinating Committee	Technical Standards and Safety Authority, Fuels Safety Program	Engineering Manager	345 Carlingview Drive	Toronto	ON	M9W 6N9	1-877-682-8772	ghighfield@tsa.org	ryu@tssa.org
Zora	Crnojacki	Ontario Pipeline Coordinating Committee	Ontario Energy Board	Sr. Advisor, Natural Gas Applications	P.O. Box 2319 2300 Yonge Street	Toronto	ON	M4P 1E4	416-440-8104	OPCC.Chair@oeb.ca	
Ken	Mott	Ontario Pipeline Coordinating Committee	Food Safety and Environmental Policy Branch, Ministry of Agriculture, Food & Agribusiness	Rural Planner	1 Stone Road West, 3rd Floor SE	Guelph	ON	N1G 4Y2	613-290-9112	omafra.eanotices@ontario.ca	
Nick	Cole	Ontario Pipeline Coordinating Committee	Infrastructure Ontario	Environmental Manager	2000-1 Dundas Street West	Toronto	ON	M5G 2L5	647-264-4499	nick.cole@infrastructureontario.ca	
		Ontario Pipeline Coordinating Committee	Ministry of Natural Resources and Forestry	Environmental Planning Team	300 Water Street, 3rd Floor South	Peterborough	ON	K9J 3C7		Environmental.Planning.Team@ontario.ca	
Daniel	Prelipcean	Ontario Pipeline Coordinating Committee	Ministry of Transportation	Senior Project Manager, Corridor Management Office	301 St. Paul Street	St. Catherine's	ON	L2R 7R4	289-407-4238	daniel.prelipcean@ontario.ca	Alicia.Edwards@ontario.ca
Jake	Noordhof	Ontario Pipeline Coordinating Committee	Ministry of the Environment, Conservation and Parks	Manager, Environmental Assessment Services	135 St. Clair Avenue West, 1st Floor	Toronto	ON	M4V 1P5		jake.noordhof@ontario.ca	sourceprotections creening@ontario.ca eanotification.swregion@ontario.ca



First Name	Surname	Organization	Department	Position	Address	City/ Town	Province	Postal Code	Telephone	E-Mail	Cc List
Chloe	Lazakis	Ontario Pipeline Coordinating Committee	Ministry of Energy	Senior Advisor, Indigenous Energy Policy Unit	77 Grenville Street, 6th Floor	Toronto	ON	M7A 2C1		chloe.lazakis@ontario.ca	shannon.mccabe@ontario.ca

Municipal

First Name	Surname	Title	Agency	Department	Address	City/ Town	Province	Postal Code	Telephone	E-Mail
Jeff	Baranek	Clerk	St. Clair Township	Clerk's Department	1155 Emily Street, Upper floor	Mooretown	ON	N0N 1M0	519-867-2021	ibaranek@stclairtownship.ca
John	Rodey	Chief Administrative Officer	St. Clair Township	Economic Development	1155 Emily Street, Upper floor	Mooretown	ON	N0N 1M0	519-867-2021	irodey@twp.stclair.on.ca
		Emergency Services	St. Clair Township	Fire Department	392 Lyndoch Street	Corunna	ON	N0N 1G0	519-481-0111	stclairfire@stclairfire.ca
Carlie	McClemens	Deputy Clerk/ Planning Coordinator	St. Clair Township	Planning and Zoning	1155 Emily Street, Upper floor	Mooretown	ON	N0N 1M0	519-867-2021	cmclemens@stclairtownship.ca
Kevin	Marriott	Warden	County of Lambton	Council	4465 Rokeby Line	Petrolia	ON	N0N 1R0	519-882-2490	County of Lambton
Stéphane	Thiffeault	Chief Administrative Officer	County of Lambton	Office of the CAO	789 Broadway Street, Box 3000	Wyoming	ON	N0N 1T0	519-845-0801 ext. 5410	County of Lambton
Olivia	Leger	General Manager/ County Solicitor/ Clerk	County of Lambton	Corporate	789 Broadway Street, Box 3000	Wyoming	ON	N0N 1T0	519-845-5402	County of Lambton



Indigenous Communities

First Name	Surname	Organization	Position	Phone Number	Address	City	Province	Postal Code	E-Mail
Lynn	Rosales	Aamjiwnaang	Environment Coordindator	519-336-8410	978 Tashmoo Ave.	Sarnia	Ontario	N7T 7H5	lrosales@aamjiwnaang.ca
Courtney	Jackson	Aamjiwnaang	Consultation and Outreach Worker						cjackson@aamjiwnaang.ca
Alexandra	Beveridge	Aamjiwnaang	Ennvironment Worker						abeveridge@aamjiwnaang.ca
James	Wrightman	Aamjiwnaang	Communication and Accommodation Officer						jwrightman@aamjiwnaang.ca
Dean	Jacobs	Walpole Island	Senior Advisor	519-627-1475	117 Tahgahoning Rd.	Walpole Island	Ontario	N8A 4K9	dean.jacobs@wifn.org
Verna	George	Kettle and Stony Point	First Nation Manager/CEO	519-786-2125	6247 Indian Lane	Kettle and Stony Point	Ontario	N0N 1J1	verna.george@kettlepoint.org
Three Fires Group		Kettle and Stony Point	Consultation						consultation@kettlepoint.org
Jennifer	Mills	Chippewas of the Thames	Energy Sector Consultation Coordinator	519-289-5555	320 Chippewa Rd.	Muncey	Ontario	N0L 1Y0	jmills@cottfn.com
R	Smith	Chippewas of the Thames							rsmith@cottfn.com
Janelle	Cornelius	Oneida	Environment Coordindator	519-652-3244	2212 Elm Ave.	Southwold	Ontario	N0L 2G0	environment@oneida.on.ca

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[illegible]

Name1	Name2	Name3	Mailing Address	City	Province	Postal Code
[REDACTED]	[REDACTED]		[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]		[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
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[REDACTED]			[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Public Authority Having Jurisdiction	Attn: The Corporation of the County Of Lambton		6332 Nauvoo Rd	Watford	ON	N0M 2S0
[REDACTED]	[REDACTED]		[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]		[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
The Hydro-Electric Power Commission Of Ontario	Attn: Hydro One Networks Inc.		Box 5700	Markham	ON	L3R 1C8



2026 Kimball-Colinville Wells Drilling Project: Environmental Report
Appendix A Consultation Materials
November 7, 2025

Appendix A.2 Notice of Upcoming Project



Enbridge Gas Inc. **Notice of Upcoming Project** **2026 Kimball Colinville Well Drilling Project**

This notice is to inform you of an upcoming Enbridge Gas Ontario (Enbridge Gas) Project in the St. Clair Township, Ontario. The purpose of the Project is to replace deliverability due to well abandonments to continue to provide residents, businesses, and industries located in the Project area with safe, reliable, and natural gas services. The new wells are located adjacent to existing natural gas infrastructure with temporary working space required during construction.

Enbridge Gas has retained third-party environmental consultant Stantec Consulting Ltd. (Stantec), to complete an Environmental Study for the Project. The Environmental Study will fulfill the requirements of the Ontario Energy Board's (OEB) "Environmental Guidelines for the Location, Construction and Operation for

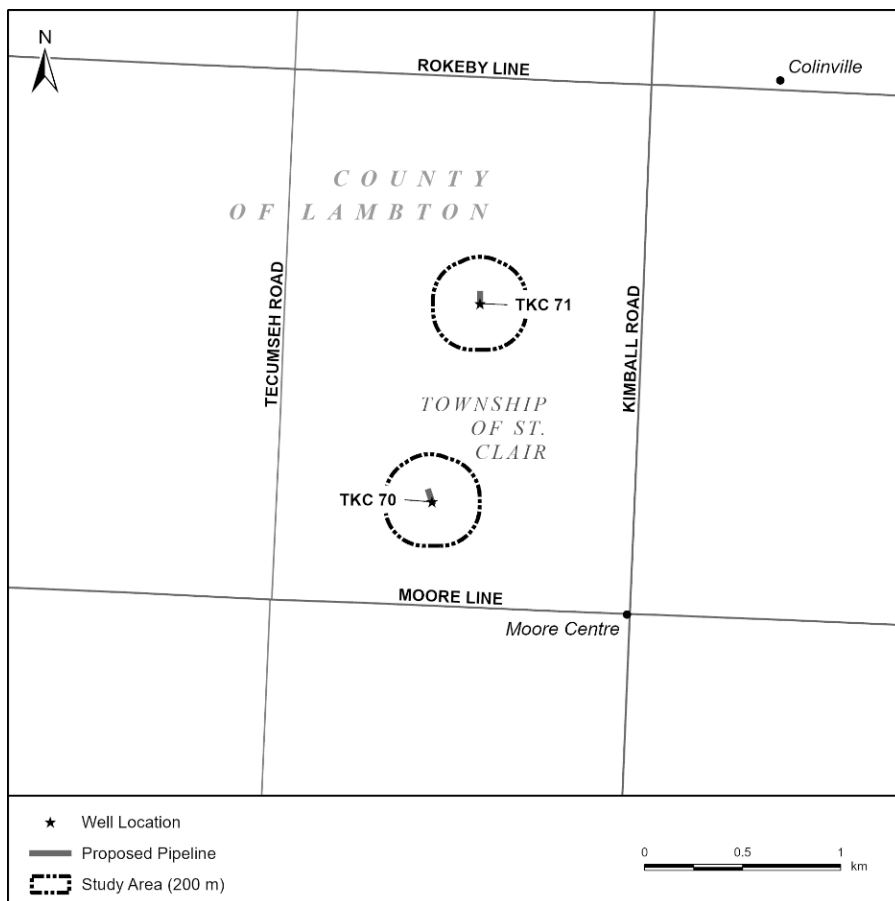
Hydrocarbon Pipelines and Facilities in Ontario, 8th Edition. 2023". The Environmental Study will include a consultation program, impact assessment, and a cumulative effects assessment.

It is anticipated that the Environmental Report for the study will be completed in Q4 2025, Pending a positive recommendation from the OEB to the Minister of Natural Resources for the issuance of well drilling licenses under section 40 of the *OEB Act*, construction is anticipated to begin in early 2026.

Enbridge Gas is committed to undertaking consultation and engagement with stakeholders, Indigenous communities, and the public as an integral component of the Project planning process. Additional details about the Project and how to become involved during the public consultation and engagement process will be provided in future correspondence.

Should you have any questions, comments or input about the Project please contact Stantec using the information below. All input will be evaluated and may be considered during the evaluation for the Project.

Shelby Gibson
 Environmental Planner
 Stantec Consulting Ltd.
 Telephone: (613) 804-6362
 Email: 2026KimballColinvilleWellDrilling@stantec.com



2026 Kimball-Colinville Wells Drilling Project: Environmental Report
Appendix A Consultation Materials
November 7, 2025

**Appendix A.3 Notice of Commencement and Virtual
Information Session**



Enbridge Gas Inc.

Notice of Study Commencement and Virtual Information Session

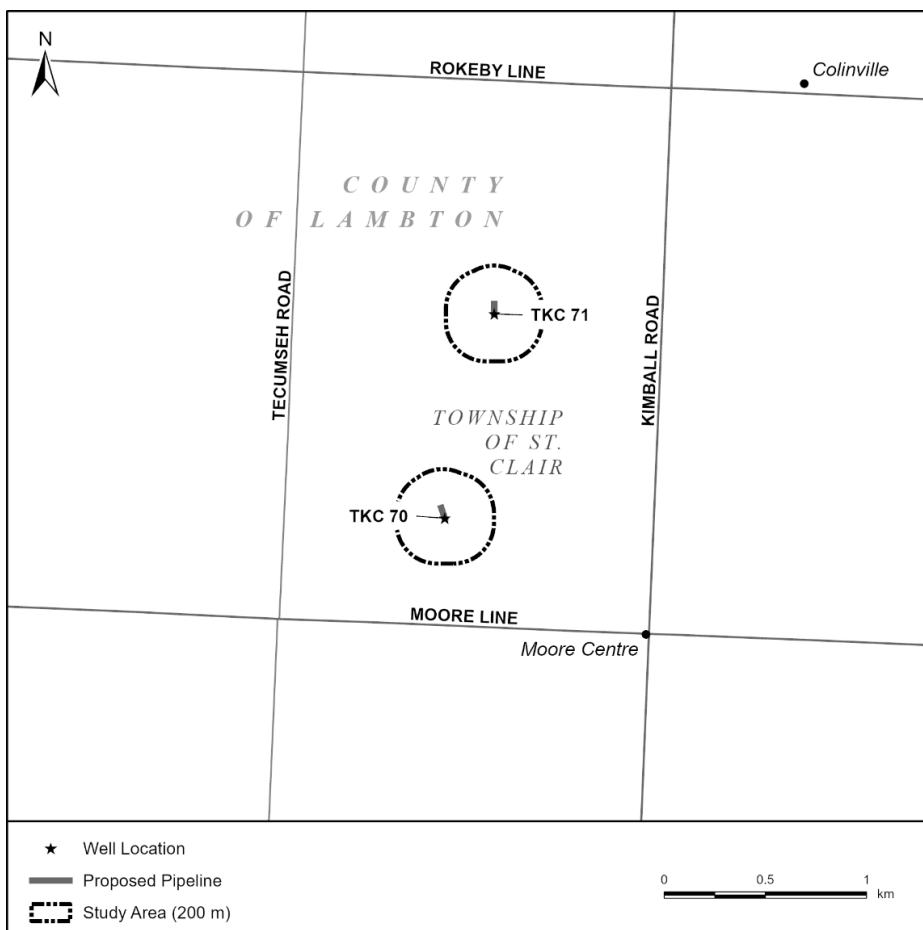
2026 Kimball-Colinville Well Drilling Project

Enbridge Gas Inc. (Enbridge Gas) is proposing the Kimball-Colinville Well Drilling Project in St. Clair Township, in the County of Lambton. The purpose of this project is to replace deliverability due to well abandonments to continue to provide residents, businesses and industries with safe and reliable natural gas service.

The proposed Project will involve the drilling of two new storage wells in the Kimball-Colinville Designated Storage Area, and will include temporary drill pads, permanent well pads, and new lateral lines.

The information included in this notice was developed for the purposes of an assessment of potential environmental and socioeconomic impacts and does not represent the final project scope or design. Consultation and engagement with Indigenous communities, landowners, government agencies, and other interested persons is an integral component of the Project's planning process. As such, a Virtual Information Session will be held:

Virtual Information Session (online):
July 23 – August 8, 2025
www.solutions.ca/KimballColinvilleWellsER



The presentation from the Virtual Information Session will be available for viewing on the Enbridge Gas project webpage once the Virtual Information Session is complete.

A questionnaire will also be available as part of the Virtual Information Session, and questions and comments about the proposed Project can be directed to the Project email address listed below. Input received during the Virtual Information Session may be used to develop the site-specific environmental protection and mitigation measures for the Project. Input and comments about the Project are requested by August 26, 2025.

As part of the planning process, Enbridge Gas has retained Stantec Consulting Ltd. (Stantec) to undertake an Environmental Study for the Project. The Environmental Study will fulfill the requirements of the Ontario Energy Board's (OEB) "Environmental Guidelines for the Location, Construction, and Operation of Hydrocarbon Projects and Facilities in Ontario, 8th Edition (2023)". It is anticipated that an Environmental Report for the Project will be completed in Fall 2025. Pending a positive recommendation from the OEB to the Minister of Natural Resources for the issuance of well drilling licenses under section 40 of the OEB Act, construction is anticipated to commence in early 2026.

For any questions, comments or input regarding the Environmental Study for the Kimball-Colinville Well Drilling Project, please contact:

Shelby Gibson
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 Telephone: (613) 804-6362
 Email: 2026KimballColinvilleWellDrilling@stantec.com



2026 Kimball-Colinville Wells Drilling Project: Environmental Report
Appendix A Consultation Materials
November 7, 2025

Appendix A.4 Project Summary Report

Disclaimer: The following Appendix was provided to provide Indigenous communities a chance to review and comment on project baseline conditions, impacts, and mitigation ahead of the ER as a summary of the Environmental Report and therefore this appendix is not accessible as per Accessibility for Ontarians with Disabilities Act, 2005 (AODA). Key information from the summary reports is summarized in Section 2.3.3.



2026 Kimball-Colinville Well Drilling Project

Project Description Report

July 16, 2025

Prepared for:
Enbridge Gas Ontario

Prepared by:
Stantec Consulting Ltd.

Project/File:
160901240




2026 Kimball-Colinville Well Drilling Project
Limitations and Sign-off
 July 16, 2025

Limitations and Sign-off

The conclusions in the Report titled Project Description Report are Stantec's professional opinion, as of the time of the Report, and concerning the scope described in the Report. The opinions in the document are based on conditions and information existing at the time the scope of work was conducted and do not take into account any subsequent changes. The Report relates solely to the specific project for which Stantec was retained and the stated purpose for which the Report was prepared. The Report is not to be used or relied on for any variation or extension of the project, or for any other project or purpose, and any unauthorized use or reliance is at the recipient's own risk.

Stantec has assumed all information received from Enbridge Gas Ontario (the "Client") and third parties in the preparation of the Report to be correct. While Stantec has exercised a customary level of judgment or due diligence in the use of such information, Stantec assumes no responsibility for the consequences of any error or omission contained therein. This Report is intended solely for use by the Client in accordance with Stantec's contract with the Client. While the Report may be provided to applicable authorities having jurisdiction and others for whom the Client is responsible, Stantec does not warrant the services to any third party. The report may not be relied upon by any other party without the express written consent of Stantec, which may be withheld at Stantec's discretion.

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Signature

Shelby Gibson, Ph.D.
 Environmental Planner


Printed Name and Title

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Mark Knight, RPP, MCIP
 Principal, Environmental Planner

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Signature

Dave Wesenger
 Operations Leader, ES

Printed Name and Title



2026 Kimball-Colinville Well Drilling Project
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July 16, 2025

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Appendix D Stage 1-2 Archaeological Assessment: Coveny and Kimball-Colinville Well Drilling, Proposed Location of TCK 68

Appendix E Cultural Heritage Memo: Kimball Replacement Wells TKC 71 Drilling Project



1 Introduction

This Project Description Report outlines the findings to-date of natural heritage, archaeology, and cultural heritage and has been shared with Indigenous communities to support and facilitate ongoing consultation efforts. Information on the existing natural heritage features has been obtained from available published sources and published in Section 2.1. Archaeology and cultural heritage information has been obtained from completed assessments and is summarized in Section 2.2.

Enbridge Gas Inc. doing business as Enbridge Gas Ontario (Enbridge Gas) has retained Stantec Consulting Ltd. (Stantec) to provide environmental services for the 2026 Kimball-Colinville Well Drilling Project (the Project). The Environmental Report prepared for the Project will fulfill the requirements of the Ontario Energy Board (OEB) ***Environmental Guidelines for the Location, Construction, and Operation of Hydrocarbon Projects and Facilities in Ontario, 8th Edition (2023)***.

Enbridge Gas is committed to creating processes that support meaningful engagement with potentially affected Indigenous peoples. Enbridge Gas works to build an understanding of project related interests, ensure regulatory requirements are met, mitigate or avoid project-related impacts on Aboriginal interests including rights, and provide mutually beneficial opportunities where possible. This Project Description Report has been made available as a preliminary summary of the findings of the environmental studies to date, prior to completion of the Environmental Report, to solicit feedback that may be incorporated into the Environmental Report and subsequent project phases.

1.1 Project Overview

To ensure the continued safe and reliable delivery of natural gas to existing and future Enbridge Gas customers, Enbridge Gas is proposing to drill two natural gas storage wells (TKC 70 and TKC 71). Drilling will occur in the Kimball-Colinville Designated Storage Area in Lambton County.

Project activities at TKC 70 and TKC 71 will commence with the construction of two temporary gravel drilling pads that will be approximately 8100 square meters each. Access to the pads will be via existing permanent access laneways. Upon completion of drilling activities, approximately 100 - 140 metres of Nominal Pipe Size 10-inch lateral pipeline will be constructed to connect the new natural gas storage wells to the existing Kimball-Colinville gathering system, and portions of the temporary gravel drilling pads will be removed such that permanent gravel pads of 60 square meters will remain.

1.2 Project Location

The Project is located in the Township of St. Clair in the County of Lambton, Ontario (see Figure 1).



2026 Kimball-Colinville Well Drilling Project
1 Introduction
July 16, 2025



Figure 1 Map of Study Area

1.3 Schedule

Table 1.1 Schedule of Activities

Activity	Timing
Environmental Report	August 2025
Drilling Commencement	Spring 2026



2 Existing Conditions

2.1 Natural Heritage

The purpose of the natural heritage background review was to determine locations and characteristics (e.g., flow regime, thermal regime, drain classification) of potential surface water features, and to identify the presence of designated natural heritage areas and records of species at risk and species of conservation concern that overlap with the Study Area.

2.1.1 Aquatic Resources

No aquatic features were identified in the Study Area during the background data review.

2.1.2 Terrestrial Resources

No designated natural heritage features or areas were identified in the Study Area during the background review. The Study Area consists predominantly of row-crop agricultural fields. The only naturally vegetated community in the Study Area is a narrow hedgerow located east of TKC 71 along a field access road which consists of shrubs and trees. The Study Area falls in the St. Thomas Ecodistrict 7E-2. Deciduous tree species associated with this Ecodistrict include Sugar Maple, American Beech, White Ash, Silver Maple, Yellow Birch, Black Ash, American Elm, Red Maple, Bur Oak, American Basswood, Eastern Hop-hornbeam, Green Ash, Black Cherry, Bitternut Hickory, Trembling Aspen, Large-toothed Aspen, Balsam Poplar, Butternut, and Manitoba Maple.

Based on a review of significant wildlife habitat, 3 seasonal concentration areas may be present in the Study Area:

1. Waterfowl Stopover and Staging Area (Terrestrial): Low-lying areas to support significant wildlife habitat for waterfowl stopover and staging areas (terrestrial) may be present in agricultural fields in the Study Area.
2. Bat maternity colonies: The hedgerow in the Study Area may provide candidate significant wildlife habitat for bat maternity colonies.
3. Reptile Hibernacula: Rural agriculture fields and the hedgerow may have rock piles, fences, and/or crumbling foundations that could provide reptile hibernacula in the Study Area.

Based on the background data review, the following 7 species at risk were assessed as having suitable habitat in the Study Area: Eastern Red Bat, Eastern Small-footed Myotis, Hoary Bat, Little Brown Myotis, Northern Myotis, Silver-haired Bat, and Tricolored Bat. In addition, the following 10 species of conservation concern were assessed as having suitable habitat in the Study Area: Tortricid Moth, Betrothed Underwing Moth, Obscure Underwing Moth, Orange-tipped Oakworm Moth, Monarch Butterfly, Eastern Wood-Pee-wee, and Purple Martin.



2026 Kimball-Colinville Well Drilling Project
2 Existing Conditions
 July 16, 2025

2.2 Archaeology and Cultural Heritage

In Ontario, archaeology is generally discussed through two avenues: Indigenous and non-Indigenous, and the term “contact” is typically used as a chronological benchmark when discussing Indigenous archaeology in Canada and describes the contact between Indigenous and non-Indigenous, i.e., European, cultures. There is no definitive moment of contact, and the understanding of when Indigenous and non-Indigenous communities first began to influence on another is evolving with new studies of archaeological and historical research and from Indigenous oral tradition and history. Contact in what is now the province of Ontario is broadly assigned to the 16th century (Loewen and Chapdelaine 2016).

TKC 70

Archaeology

An archaeological assessment was previously completed for the land on which TKC 70 is located, as part of Enbridge Gas’ Kimball-Colinville Wells Maximum Operating Pressure Increase project (**Appendix A**).

During the Stage 2 survey one new archaeological location was identified – Location 1. Location 1 was a single, isolated find of one retouched flake of Kettle Point chert. Location 1 is sufficiently documented in accordance with Section 2.2 of the 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011). Thus, no further archaeological assessment was recommended for Location 1.

Cultural Heritage

A cultural heritage assessment was previously completed for the land on which TKC70 is located, as part of Enbridge Gas’ Dawn-Corunna project. Stantec prepared a Cultural Heritage Memo for the Study Area (**Appendix B**).

There were five cultural heritage indicators identified for the Study Area of the Dawn-Corunna project, which overlaps with the area of TKC 70. The completion of a Cultural Heritage Assessment Report was recommended for the overall Study Area, for which the area of TKC 70 makes up a small portion. The Cultural Heritage Assessment Report was completed, which identified and evaluated 12 potential built heritage resources in the Study Area (**Appendix C**). Following an assessment of potential impacts, no direct or indirect impacts were identified and therefore, no mitigation or further cultural heritage evaluation are required. Avoidance of the 12 properties is recommended; however, these properties are not located in the Study Area for this Project.

TKC 71

Archaeology

As part of Enbridge Gas’ Coveny and Kimball-Colinville Well Drilling project, a Stage 1-2 Archaeological Assessment was completed that overlaps with the location of TKC 71 (**Appendix D**).



2026 Kimball-Colinville Well Drilling Project
2 Existing Conditions
 July 16, 2025

Four new archaeological locations were identified during the Stage 2 survey of the Study Area. The Stage 2 assessment of Location 1, 2, 3, and 4 resulted in the identification of a chipped lithic knife made of Kettle Point chert, a broken projectile point manufactured from an indeterminate chert, a broken projectile point manufactured from Kettle Point chert, and a retouched flake of indeterminate chert, respectively.

No further archaeological assessment was recommended for Location 1, 2, 3, and 4. No other archaeological resources were identified during the Stage 2 survey of the Study Area. Thus, in accordance with Section 2.2 and Section 7.8.4 Standard 3 of the 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011), no further archaeological assessment of the surveyed portions of the Study Area was required.

Cultural Heritage

Enbridge Gas retained Stantec to prepare a Cultural Heritage Memo for the Study Area of TKC 71 (**Appendix E**). The Study Area met one indicator of cultural heritage value or interest on the Ministry of Citizenship and Multiculturalism (MCM) Checklist, for the “Smith and White Cemetery.” However, this cemetery is located adjacent to the Study Area over one kilometre northeast of the proposed construction activity associated with TKC 71. Therefore, no potential for direct or indirect impacts to the cemetery is anticipated. Based on this understanding, no further cultural heritage studies are recommended for TKC 71.



3 Mitigation

3.1 Natural Heritage

Natural vegetation in the Study Area is restricted to a narrow, naturalized hedgerow located east of TKC 71 along a field access road. No vegetation removal is required along the hedgerow.

Potential impacts on wildlife populations from pipeline construction include direct mortality from animal-vehicle collisions, vibration, noise, and dust from construction machinery, and temporary avoidance behaviour due to presence of humans and equipment. General wildlife mitigation measures will be implemented including:

- Prior to construction activities, a worker awareness program will be implemented that includes species identification and habitat or nesting characteristics.
- Equipment and vehicles will yield the ROW to wildlife.
- Trench operations should be followed as closely as practical with backfill operations, to facilitate the movement of wildlife across the trench.

3.2 Archaeology and Cultural Heritage

The Stage 2 Archaeological Assessments determined no further archaeological assessment is recommended. Should previously undocumented archaeological resources be discovered, or suspected of being discovered, they may be a new archaeological site and therefore subject to Section 48(1) of the Ontario Heritage Act (Government of Ontario 1990). The proponent or person discovering the archaeological resources must cease alteration of the site immediately and contact a licensed archaeologist to carry out archaeological field work. A site-specific response plan should then be employed following further investigation of the specific find. The response plan would indicate under which conditions the ground disturbance activity in the find location may resume.

The *Funeral, Burial and Cremation Services Act*, 2002, S.O. 2002, c.33 (Government of Ontario 2002) requires that any person discovering human remains must notify the police or coroner and the Registrar of Cemeteries at the Ministry of Government and Consumer Services (1-800-889-9768).

Enbridge Gas is committed to keeping interested Indigenous peoples engaged on any unearthed artifacts and/or human remains discovered in relation to their projects. If the coroner does not suspect foul play in the disposition of the remains, in accordance with Ontario Regulation 30/11 the coroner shall notify the Registrar, Ontario Ministry of Public and Business Service Delivery, which administers provisions of the Act related to burial sites. In situations where human remains are associated with archaeological resources, the MCM should also be notified (at archaeology@ontario.ca) to ensure that the archaeological site is not subject to unlicensed alterations which would be a contravention of the Ontario Heritage Act.



2026 Kimball-Colinville Well Drilling Project
4 Indigenous Knowledge
July 16, 2025

4 Indigenous Knowledge

Enbridge Gas and Stantec respectfully acknowledge the value of traditional knowledge and oral history shared among Indigenous peoples. This knowledge is recognized, welcomed, and provides important context and background to the findings of our studies. We recognize that Indigenous peoples have strong ties to their lands and that the use of these lands, from a development, ecosystems, and sustainability perspective, is of vital importance to communities.

We also recognize that the worldviews shared by Indigenous peoples contain a rich knowledge of rare plants and animals. An Indigenous worldview is one that is developed through a mutually beneficial relationship, where one sees themselves as deeply connected to the natural world. This report and databases that influence the findings in, are the product of Western knowledge and a Western worldview. In this vein, we acknowledge that the discussions in this report on protected species, for instance, do not capture the full breadth of the value these species have to Indigenous peoples.

We welcome the opportunity for Indigenous peoples to share context and background to the findings of both the archaeological studies as well as the natural heritage studies for the Project so that we may gain a sense of the full value of the species and ecosystems discussed in the Environmental Report.



2026 Kimball-Colinville Well Drilling Project
5 Closing
July 16, 2025

5 Closing

Enbridge Gas is proposing to construct two new wells near St. Clair, Ontario, to ensure the continued safe and reliable delivery of natural gas to existing and future Enbridge Gas customers. The information provided is based on an initial desktop review of natural heritage features and completed archaeological and cultural heritage assessments in the Study Area. A detailed Environmental Report will be prepared following the completion of the environmental study and will be shared with Indigenous communities for their review and input.

Enbridge Gas is committed to working collaboratively with Indigenous communities to ensure that treaty rights and interests are respected throughout the planning and development process. We encourage the early sharing of knowledge, including field observations and community perspectives, to help us effectively identify and assess potential impacts. This early engagement is vital to developing appropriate mitigation measures and ensuring that community values and priorities are meaningfully reflected in the project.



2026 Kimball-Colinville Well Drilling Project

6 References

July 16, 2025

6 References

Government of Ontario. 1990. Ontario Heritage Act, R.S.O. 1990, CHAPTER O.18. Electronic document: Ontario Heritage Act, R.S.O. 1990, c. O.18 | ontario.ca. Last accessed January 29, 2025.

Government of Ontario. 2002. Funeral, Burial and Cremation Services Act, 2002, S.O. 2002, c. 33. Electronic document: Funeral, Burial and Cremation Services Act, 2002, S.O. 2002, c. 33 | ontario.ca. Last accessed January 29, 2025.

Government of Ontario. 2011. Standards and Guidelines for Consultant Archaeologists. Toronto: Ministry of Citizenship and Multiculturalism, formerly the Ministry of Tourism, Culture and Sport.

Loewen, Brad and Claude Chapdelaine (editors). 2016. Contact in the 16th Century: Networks among Fishers, Foragers and Farmers. Mercury Series Archaeology Paper 176. Ottawa: University of Ottawa Press.



2026 Kimball-Colinville Well Drilling Project

6 References

July 16, 2025

Appendices



2026 Kimball-Colinville Well Drilling Project

Appendix A Stage 1-2 Archaeological Assessment: Kimball-Colinville Wells, Maximum Operating Pressure Increase

July 16, 2025

**Appendix A Stage 1-2 Archaeological Assessment:
Kimball-Colinville Wells, Maximum
Operating Pressure Increase**



Stage 1-2 Archaeological Assessment: Kimball-Colinville Wells, Maximum Operating Pressure Increase

Part of Lot 17, Concession 7, Part of Lot 17, Concession 8, and Part of Lot 19, Concession 6, Geographic Township of Moore, now Township of St. Clair, Lambton County, Ontario

March 19, 2025

Prepared for:
Enbridge Gas Inc.
50 Keil Drive North
Chatham, Ontario N7M 5M1

Prepared by:
Stantec Consulting Ltd.
400-1305 Riverbend Road
London, Ontario N6K 0J5

Licensee: Parker Dickson, MA
License Number: P256
Project Information Form Number:
P256-0840-2024

Project/File:
160901173

REVISED REPORT

**Stage 1-2 Archaeological Assessment: Kimball-Colinville Wells, Maximum Operating Pressure Increase
Limitations and Sign-off**
March 19, 2025

Limitations and Sign-off

The conclusions in the Report titled Stage 1-2 Archaeological Assessment: Kimball-Colinville Wells, Maximum Operating Pressure Increase are Stantec's professional opinion, as of the time of the Report, and concerning the scope described in the Report. The opinions in the document are based on conditions and information existing at the time the scope of work was conducted and do not take into account any subsequent changes. The Report relates solely to the specific project for which Stantec was retained and the stated purpose for which the Report was prepared. The Report is not to be used or relied on for any variation or extension of the project, or for any other project or purpose, and any unauthorized use or reliance is at the recipient's own risk.

Stantec has assumed all information received from Enbridge Gas Inc. (the "Client") and third parties in the preparation of the Report to be correct. While Stantec has exercised a customary level of judgment or due diligence in the use of such information, Stantec assumes no responsibility for the consequences of any error or omission contained therein.

This Report is intended solely for use by the Client in accordance with Stantec's contract with the Client. While the Report may be provided to applicable authorities having jurisdiction and others for whom the Client is responsible, Stantec does not warrant the services to any third party. The report may not be relied upon by any other party without the express written consent of Stantec, which may be withheld at Stantec's discretion.

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Signature

Colin Varley, Senior Associate, Senior Archaeologist

Printed Name and Title

Approved by:  Digitally signed by Tracie Carmichael
Date: 2025.03.19 13:05:39 -04'00'

Signature

Tracie Carmichael, Managing Principal, Environmental Services

Printed Name and Title



Executive Summary

Stantec Consulting Ltd. (Stantec) was retained by Enbridge Gas Inc. (Enbridge) to complete Stage 1-2 archaeological assessment for proposed temporary workspaces (the study area) required to support the Kimball-Colinville Wells, Maximum Operating Pressure (MOP) Increase Project (the Project). The MOP increase is an operations and maintenance requirement project, within one of Enbridge's existing natural gas storage pools. The study area for the Project is located on part of Lot 17, Concession 7, part of Lot 17, Concession 8, and part of Lot 19, Concession 6, Geographic Township of Moore, now Township of St. Clair, Lambton County, Ontario. The study area is represented by three individual workspaces, comprising approximately 26.72 hectares. The Stage 1-2 archaeological assessment was triggered by Enbridge's Archaeology Protocol and due diligence for construction projects, including operations and maintenance, which is informed by the *Ontario Heritage Act* (Government of Ontario 1990a) and the Ontario Energy Board's (OEB) guidelines for the expansion of natural gas service in its *Guidelines for Assessing and Reporting on Natural Gas System Expansion in Ontario* (OEB 2025).

Stage 1-2 archaeological assessment of the study area was conducted under Project Information Form number P256-0840-2024 issued to Parker Dickson, MA of Stantec by the Ministry of Citizenship and Multiculturalism (the Ministry). The Stage 1 assessment determined that the study area retained archaeological potential and Stage 2 assessment was required. The Stage 2 archaeological assessment was conducted between December 10, 2024, and December 13, 2024, and one new archaeological location, Location 1, was identified.

Location 1 is sufficiently documented in accordance with Section 2.2 of the Ministry's 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011). Thus, **no further archaeological assessment is recommended for Location 1.**

The Ministry is asked to review the results presented and accept this report into the *Ontario Public Register of Archaeological Reports*.

The Executive Summary highlights key points from the report only; for complete information and findings, the reader should examine the complete report.

Project Personnel

Project Manager:	Mark Knight, MA, MCIP, RPP
Task Manager:	Parker Dickson, MA
Licensed Archaeologist:	Parker Dickson, MA (P256)
Licensed Field Director:	Nathan Ng, BA (R1223), Krista Lane, BA (R382)
Field Crew:	Samuel Adams, Nicholas Salazer-Reid, Lorelyn Giese, Nathan Lofthouse, Aaron Cathers (R1389), Caroly Spelt
Mapping:	Holly Long, GIS Specialist
Artifact Analyst:	Kurt Kostuk, Ruth Dickau, Ph.D.
Report Writer:	Parker Dickson, MA
Quality Review:	Colin Varley, MA, RPA
Independent Review:	Tracie Carmichael, BA, B.Ed.

Acknowledgements

Enbridge Gas Inc.:	Ryan Park – Senior Advisor, Environment Christine Sebesta – Advisor, Capital Development, Operation Capital Programs Chris Walters – Advisor, Lands & ROW Eastern CAN Chasity Pilecki – Senior Advisor, Community & Indigenous Engagement
Ministry of Citizenship and Multiculturalism:	Robert von Bitter – Archaeological Data Coordinator Heather Tulloch – Archaeology Review Officer

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1 Project Context

1.1 Development Context

Stantec Consulting Ltd. (Stantec) was retained by Enbridge Gas Inc. (Enbridge) to complete Stage 1-2 archaeological assessment for proposed temporary workspaces (the study area) required to support the Kimball-Colinville Wells, Maximum Operating Pressure (MOP) Increase Project (the Project). The MOP increase is an operations and maintenance requirement project, within one of Enbridge's existing natural gas storage pools. The study area for the Project is located on part of Lot 17, Concession 7, part of Lot 17, Concession 8, and part of Lot 19, Concession 6, Geographic Township of Moore, now Township of St. Clair, Lambton County, Ontario (Figure 1). The study area is represented by three individual workspaces, comprising approximately 26.72 hectares (Figure 2). Table 1 summarizes the study area parcels.

Table 1: Study Area Parcels

Study Area	Size (approximately)	Lot	Concession	Geographic Township	Current Municipality
Parcel 1	470 metres (m) by 565 m (26.53 hectares [ha])	17	8	Moore	Township of St. Clair, Lambton County
Parcel 2	37 m by 38 m (0.14 ha)	17	7	Moore	Township of St. Clair, Lambton County
Parcel 3 ^a	9 m x 63 m (0.05 ha)	19	6	Moore	Township of St. Clair, Lambton County

Notes:

^a On the Development Map, this area was initially identified as "Parcel 4".

The Stage 1-2 archaeological assessment was triggered by Enbridge's Archaeology Protocol and due diligence for construction projects, including operations and maintenance, which is informed by the *Ontario Heritage Act* (Government of Ontario 1990a) and the Ontario Energy Board's (OEB) guidelines for the expansion of natural gas service in its *Guidelines for Assessing and Reporting on Natural Gas System Expansion in Ontario* (OEB 2025).

1.1.1 Objectives

In compliance with the provincial standards and guidelines set out in the 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011), regulated by the Ministry of Citizenship and Multiculturalism (the Ministry), the objectives of the Stage 1 archaeological assessment are to:

- Provide information about the study area's geography, history, previous archaeological fieldwork, and current land conditions.

- Evaluate the study area's archaeological potential which will support recommendations for Stage 2 survey for all or parts of the property.
- Recommend appropriate strategies for Stage 2 survey.

To meet these objectives, Stantec archaeologists:

- Reviewed relevant archaeological, historical, and environmental literature pertaining to the study area.
- Reviewed the land use history of the study area, including historical atlases.
- Examined the Ministry's *Ontario Archaeological Sites Database* to determine the presence of registered archaeological sites in and around the study area.
- Queried the Ministry's *Ontario Public Register of Archaeological Reports* to identify previous archaeological assessments completed within 50 metres of the study area.

In compliance with the provincial standards and guidelines set out in the Ministry's 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011), the objectives of the Stage 2 archaeological assessment are to:

- Document archaeological resources within the study area.
- Determine whether the study area contains archaeological resources requiring further assessment.
- Recommend appropriate Stage 3 assessment strategies for archaeological sites identified.

Permission to enter the study area to conduct the archaeological assessment was provided by Enbridge in consultation with individual landowner consent, as required.

1.2 Historical Context

"Contact" is typically used as a chronological benchmark when discussing Indigenous archaeology in Canada and describes the contact between Indigenous and European cultures. There is no definitive moment of contact, and the understanding of when Indigenous and European communities first began to influence one another is evolving with new studies of archaeological and historical evidence and from Indigenous oral tradition. Contact in what is now the province of Ontario is broadly assigned to the 16th century (Loewen and Chapdelaine 2016).

1.2.1 Pre-contact Indigenous Resources

This portion of southwestern Ontario has been occupied by Indigenous peoples since the retreat of the Wisconsin glacier approximately 11,000 years ago. Much of what is understood about the lifeways of these Indigenous peoples is derived from archaeological evidence and ethnographic analogy. In Ontario, Indigenous culture prior to the period of contact with European peoples has been distinguished into archaeological periods based on observed changes in material culture. These archaeological periods are largely based in observed changes in formal lithic tools and separated into the Early Paleo, Late Paleo,

Early Archaic, Middle Archaic, and Late Archaic periods. Following the advent of ceramic technology in the Indigenous archaeological record, archaeological periods are separated into the Early Woodland, Middle Woodland, and Late Woodland periods, based primarily on observed changes in formal ceramic decoration. It should be noted that these archaeological periods do not necessarily represent specific cultural identities but are a useful paradigm for understanding changes in Indigenous culture through time. Table 2 provides a general outline of the cultural chronology of the study area, summarized from Ellis and Ferris (1990). The provided time periods are based on the “Common Era” calendar notation system: Before Common Era (BCE) and Common Era (CE).

Table 2: Generalized Archaeological Period Chronology of the Study Area

Archaeological Period	Characteristics	Time (approximate)	Comments
Early Paleo	Fluted Projectiles	9000 – 8400 BCE	Spruce parkland/caribou hunters
Late Paleo	Hi-Lo Projectiles	8400 – 8000 BCE	Smaller but more numerous sites
Early Archaic	Kirk, Nettling, and Bifurcate Base Projectiles	8000 – 6000 BCE	Slow population growth
Middle Archaic	Brewerton-like Points	6000 – 2500 BCE	Environment similar to present
Late Archaic	Narrow Points	2500 – 1800 BCE	Increasing site size
	Broad Points	1800 – 1500 BCE	Large chipped lithic tools
	Small Points	1500 – 1100 BCE	Introduction of bow hunting
Terminal Archaic	Hind Points	1100 – 950 BCE	Emergence of true cemeteries
Early Woodland	Meadowood Points	950 – 400 BCE	Introduction of pottery
Middle Woodland	Couture Corded Pottery	400 BCE – 500 CE	Increased sedentism
	Riviere au Vase Pottery	500 – 800 CE	Seasonal hunting and gathering
Late Woodland	Younge Phase Pottery	800 – 1200 CE	Incipient agriculture
	Springwells Phase Pottery	1200 – 1400 CE	Agricultural villages
	Wolf Phase Pottery	1400 – 1550 CE	Earth worked villages, warfare
Contact Indigenous	Various Indigenous Groups	1600 – 1875 CE	Early written records and treaties
Historical	French/Euro-Canadian Settlers	1749 CE – present	European settlement

Local environmental conditions during the Paleo period significantly differed from what they are today. Ontario’s first peoples would have crossed the landscape in small groups searching for food, particularly migratory game species. Caribou may have been a Paleo diet staple in this area, supplemented by wild plants, small game, birds, and fish. Given the low density of populations on the landscape at this time and their mobile nature, Paleo sites are small and ephemeral and are sometimes identified by the presence of fluted projectile points. Sites are frequently located adjacent to the shorelines of large glacial lakes. Between 9000 and 8000 BCE, Indigenous populations were sustained by hunting, fishing, and foraging and lived a relatively mobile existence across an extensive geographic territory. Despite these wide territories, social ties were maintained between groups. One method to maintain social ties between

distant groups was through gift exchange, which was evident through exotic lithic material documented on many sites (Ellis 2013:35-40).

Archaeological records indicate subsistence changes around 8000 BCE at the start of the Archaic Period in southwestern Ontario. Since the large mammal species that formed the basis of the Paleo diet became extinct or moved north with the warming of the climate, Archaic populations had a more varied diet, exploiting a range of plants and bird, mammal, and fish species. Reliance on specific food resources like fish, deer, and several nut species became more noticeable through the Archaic Period, and the presence of warmer, more hospitable environs led to the expansion of group and family sizes. In the archaeological record, this is evident in the presence of larger sites.

By approximately 8000 BCE, evidence existed and became more common for the production of ground-stone tools such as axes, chisels, and adzes. These tools are believed to be indicative specifically of woodworking. This evidence can be extended to indicate an increase in craft production and, arguably, craft specialization. This latter statement is also supported by evidence, dating to approximately 7000 BCE of ornately carved stone objects which would be laborious to produce and have explicit aesthetic qualities (Ellis 2013:41). This is indirectly indicative of changes in social organization which permitted individuals to devote time and effort to craft specialization. Since 8000 BCE, the Great Lakes basin experienced a low-water phase, with shorelines significantly below modern lake levels (Stewart 2013: Figure 1.1.C). It is presumed that most human settlements would have been focused along these former shorelines. At approximately 6500 BCE, the climate had warmed considerably since the recession of the glaciers, and the environment had grown more like the present day. By approximately 4500 BCE, evidence exists from southern Ontario for the utilization of native copper, i.e., naturally occurring pure copper metal (Ellis 2013:42). The recorded origin of this material along the north shore of Lake Superior indicates the existence of extensive exchange networks across the Great Lakes basin.

The coniferous forests of earlier times were replaced by stands of mixed coniferous and deciduous trees by about 4000 BCE. The transition to more productive environmental circumstances led to a rise in population density. As a result, Archaic sites become more abundant over time. Artifacts typical of these occupations include a variety of stemmed and notched projectile points; chipped stone scrapers; ground stone tools (i.e., celts and adzes) and ornaments (i.e., bannerstones and gorgets); bifaces or tool blanks; animal bone; and chert waste flakes, a by-product of the tool making process (Ellis *et al.* 1990).

At approximately 3500 BCE, the isostatic rebound of the North American plate following the melt of the Laurentide glacier reached a point that significantly affected the watershed of the Great Lakes basin. Prior to this, the Upper Great Lakes had drained down the Ottawa Valley via the French River and Mattawa River valleys. Following this shift in the watershed, the drainage course of the Great Lakes basin changed to its present course. This also prompted a significant increase in water-level to approximately modern levels (with a brief high-water period); this change in water levels is believed to have occurred catastrophically (Stewart 2013:28-30). This change in geography coincides with the earliest evidence for cemeteries (Ellis 2013:46). By 2500 BCE, the earliest evidence exists for the construction of fishing weirs (Ellis *et al.* 1990: Figure 4.1). However, the construction of fishing weirs could have occurred as early as 6650 BCE (Stevens 2004). Regardless, constructing these weirs would have required a large amount of communal labour and indicates the continued development of social organization and communal identity.

The large-scale food procurement at a single location also has significant implications for the permanence of settlement within the landscape. This period is also marked by further population increase, and by 1500 BCE, evidence exists for substantial permanent structures (Ellis 2013:45-46).

By approximately 950 BCE, the earliest evidence exists for populations using ceramics. Populations are understood to have continued to exploit natural resources seasonally. This advent of ceramic technology correlated, however, with the intensive exploitation of seed foods, such as goosefoot and knotweed, as well as mast, such as nuts (Williamson 2013:48). The use of ceramics implies changes in the social organization of food storage as well as in the cooking of food and changes in diet. Fish also continued to be an important facet of the economy at this time. Evidence continues to exist for the expansion of social organization (including hierarchy), group identity, ceremonialism (particularly in burial), interregional exchange throughout the Great Lakes basin and beyond, and craft production (Williamson 2013:48-54).

A distinctive cultural occupation in southwestern Ontario, including Essex, Kent, and Lambton counties, as well as portions of Middlesex County, had developed during the Late Woodland period. The primary Late Woodland occupants of this area were populations described by archaeologists as Western Basin Tradition. Murphy and Ferris (1990:189) indicate that these people had ties with populations in southeastern Michigan and northwestern Ohio and represent an *in situ* cultural development from the earlier Middle Woodland groups. The Western Basin Tradition seems to have been centred in the territory comprising the eastern drainage basin of Lake Erie, Lake St. Clair, and the southern end of Lake Huron. The Western Basin Tradition is divided into four phases based on differences in settlement and subsistence strategies and pottery attributes.

By approximately 550 CE, evidence emerges for the introduction of maize into southern Ontario. This crop would have initially only supplemented Indigenous peoples' diet and economy (Birch and Williamson 2013:13-14). Maize-based agriculture gradually became more important to societies, and by approximately 900 CE, permanent communities emerged that were primarily focused on agriculture and the storage of crops, with satellite locations oriented toward procuring other resources via hunting, fishing, and foraging. By approximately 1250 CE, evidence exists for the common cultivation of Indigenous cultigens, including maize, beans, squash, sunflower, and tobacco. The extant archaeological record demonstrates many cultural traits similar to those noted for historical Indigenous nations (Williamson 2013:55).

1.2.2 Post-contact Indigenous Resources

As noted above, at the turn of the 16th century, the region of the study area is documented to have been occupied by people associated with the Western Basin Tradition. Following the turn of the 17th century, this region of the study area is understood to have been within the territory of the Fire Nation, an Algonkian group occupying the western end of Lake Erie. It is argued, however, that the Atawandaron (Neutral) expanded extensively westward, displacing the Fire Nation (Lennox and Fitzgerald 1990:418-419). It is debated whether the Fire Nation was descendent from the archaeologically described Western Basin Tradition, or if they migrated into the western part of Lake Erie, displacing a previous Indigenous culture (Murphy and Ferris 1990:193-194).

In 1649, the Seneca and the Mohawk led a campaign into southern Ontario and dispersed the Huron-Wendat, Tionontati (Petun), and Atawandaron (Neutral), and the Seneca established dominance over the region and used it as a hinterland for beaver hunting (Heidenreich 1978; Trigger 1978:345). By 1690 however, Ojibwa-speaking people had begun to displace the Seneca from southern Ontario. Historians understand that the displaced Fire Nation moved across the St. Clair and Detroit Rivers into what is modern-day lower Michigan, and their populations are synonymous with the later Kickapoo, Miami, Potawatomi, Fox, and Sauk (Heidenreich 1990: Figure 15.1). Bkejwanong (Walpole Island) First Nation (WIFN) oral tradition states that nations of the Three Fires (a political confederacy constituted of the Potawatomi, Ojibwa, and Ottawa) have occupied the delta of the St. Clair River and the surrounding region continually for thousands of years (WIFN n.d.).

The Indigenous economy from the turn of the 18th century focused on fishing and the fur trade, supplemented by agriculture and hunting (Konrad 1981; Rogers 1978). The study area falls within the traditional territory of the WIFN, the Aamjiwnaang (Sarnia) First Nation (Aamjiwnaang First Nation), the Wiiwkwedong and Aazhoodena (Kettle Point and Stony Point) First Nation (Lytwyn 2009), and the Deshkaan Ziibing Anishinaabeg (Chippewas of the Thames First Nation [COTTFN]). Some populations of Wyandot (an Indigenous population of historically amalgamated Petun and Huron-Wendat individuals) also had moved to the region of Lake St. Clair at the turn of the 18th century and resided with the Three Fires nations (Tooker 1978:398).

By 1730, it is reported that a community of approximately 300 Indigenous people were living at the north end of Lake St. Clair (Rogers 1978:762). D'Anville's 1755 map (Konrad 1981: Plate 1) indicates the Mississauga (an Ojibwa nation) on the east bank of the St. Clair River. By 1760, the Chippewa community was established on the Thames River, southwest of present-day London, Ontario (COTTFN 2025). By 1796, the Three Fires community of Chenail Ecarté was established (Feest and Feest 1978:777-779).

The expansion of the fur trade led to increased interaction between European and Indigenous people, and ultimately intermarriage between European men and Indigenous women. During the 18th century the progeny of these marriages began to identify as Métis, and no longer identified directly with either their paternal or maternal cultures. The ethnogenesis of the Métis progressed with the establishment of distinct Métis communities along the major waterways in the Great Lakes of Ontario. Métis communities were primarily focused around the upper Great Lakes and along Georgian Bay; however, Métis people have historically lived throughout Ontario (Métis Nation of Ontario 2025; Stone and Chaput 1978:607-608).

Despite the dispersal and movement of Indigenous groups throughout southern Ontario during the 17th and 18th centuries, archaeologically they can be characterized by continuity with their pre-contact Indigenous counterparts. These peoples still maintained a Terminal Woodland archaeological culture, albeit with some features of European material culture. While there was cultural and social change occurring due to contact with European colonial powers, there was equally a definite persistence of Indigenous socio-cultural practices since these groups were not so profoundly affected by European contact that they left their former lifeways behind (Ferris 2009).

Under British administration in the 19th century, the various Indigenous groups were divided into separate bands. The Anishinaabe included the western Algonquian peoples, among them the Chippewa and the Odawa. Until the 18th century, the central Algonquian-speaking peoples, among them Potawatomi, were located in the Michigan Peninsula (Blackbird 1887). In the middle of 18th century, the Chippewa were located on the south shores of Lake Huron, the east shores of Georgian Bay, and on the west end of Lake Ontario. Indigenous peoples and their communities continue to play a large role in the occupation of the study area and its environs.

Since contact with European explorers and immigrants, and later, with the establishment of provincial and federal governments (the Crown), the lands within Ontario have been included in various treaties, land claims, and land cessions. Following the American Revolutionary War, the Crown focused on the settlement of European immigrants into what became province of Upper Canada in 1791. To enable widespread settlement, the Crown entered into several treaties with Indigenous peoples. Figure 3 provides a map of southwestern Ontario illustrating early treaties and purchases (Government of Canada n.d.), including a vast tract of land southeast of Lake Huron with a treaty or agreement date of July 10, 1824. Later, the chiefs of the Chippewa and representatives of the Crown established this vast tract of land as Treaty Number 27 ½. Though not an exhaustive list, Morris (1943) provides a general outline of some treaties within the Province of Ontario from 1783 to 1923. Figure 4 provides an approximate outline of Treaty Number 27 ½, illustrated by the letter “T”, based on a series of compilations by Morris (1943). The lands of Treaty Number 27 ½ are described by Morris (1943:26) as:

...being an agreement made at Amherstburg in the Western District of the Province of Upper Canada on the 26th of April, 1825, between James Givens, Esquire, Superintendent of Indian Affairs, on behalf of His Majesty King George the Fourth and the Chiefs and Principal Men of the part of the Chippewa Nation of Indians, inhabiting and claiming the tract of land Wawanosh Township in the County of Huron was named after Way-way-nosh the principal Chief of the Band making this Treaty.

Despite the differentiation among these groups in Euro-Canadian sources, there was a considerably different view by Indigenous groups concerning their self-identification during the first few centuries of European contact. These peoples relied upon kinship ties that cut across European notions of nation identity (Bohaker 2006:277-283). Many of the British-imposed nation names such as Chippewa, Ottawa, Potawatomi, or Mississauga artificially separated how self-identified Indigenous peoples' classified themselves; these groups were culturally and socially more alike than contemporary European documentation might indicate (Bohaker 2006:1-8).

The nature of Indigenous settlement size, population distribution, and material culture shifted as European settlers encroached upon Indigenous territory. However, despite this shift, “written accounts of material life and livelihood, the correlation of historically recorded villages to their archaeological manifestations, and the similarities of those sites to more ancient sites have revealed an antiquity to documented cultural expressions that confirms a deep historical continuity to...systems of ideology and thought” (Ferris 2009:114). As a result, Indigenous peoples have left behind archaeological resources throughout the region which show continuity with past peoples, even if they have not been explicitly recorded in Euro-Canadian documentation.

1.2.3 Euro-Canadian Resources

In 1791, the Provinces of Upper Canada and Lower Canada were created from the former Province of Quebec by an act of British Parliament. At this time, Colonel John Graves Simcoe was appointed as the Lieutenant Governor of Upper Canada and was tasked with governing the new province, directing its settlement, and establishing a constitutional government modelled after that of Britain. In 1792, Simcoe divided Upper Canada into 19 counties consisting of previously settled lands, new lands opened for settlement, and lands not yet acquired by Crown. These new counties stretched from Essex in the west to Glengarry in the east.

Lambton County was part of the District of Hesse, which in 1792 was renamed the Western District. The Western District consisted of Kent (which included Lambton County) and Essex Counties. Lambton County was named after John George Lambton, first Earl of Durham. Lambton was the author of the Durham Report, which investigated the issues that led to the rebellion of 1837. The townships in Lambton County were not completely surveyed until 1835. After the *Municipal Act* of 1849, which provided a means of government for towns and counties, several counties amalgamated and separated over the next few years with the former Kent County, with Lambton County finally becoming independent in 1853. Lambton County was known as the 'Last Frontier', as Lambton was one of the last areas of southern Ontario to be settled by European immigrants (Elford 1982).

Euro-Canadian settlement in the area of Lambton County began as early as 1796 as French settlers began living along the banks of the St. Clair River. Large scale settlement, however, did not begin until the 1830s. The majority of the surveyed lots in the townships of Lambton County were assigned to children of the United Empire Loyalists, who sold their rights to early Euro-Canadian occupants. Early Euro-Canadian inhabitants were primarily tenant farmers from Britain as well as artisans and retired military men. The population of Lambton County swelled in the 1850s with the establishment of the Great Western Railway and the Great Trunk (later Grand Trunk) Railway. This growth remained steady until 1891, when the population peaked at 58,810 people (Elford 1982).

Moore Township, with its easy accessibility to the St. Clair River, was one of the first areas in Lambton County to be settled by European immigrants. Fifteen French-speaking and five English-speaking families were among the first Euro-Canadians to settle the area. Part of Moore Township was bought from the Aamjiwnaang First Nation in 1827, and a reserve was partitioned for the Indigenous community along the township's northern border. The township was named after Sir John Moore, the celebrated British General killed in the Battle of Corunna, in 1829. The survey of Moore township was completed in 1829 by Roswell Mount, who squeezed as many lots along the St. Clair River front as possible for veterans of the Napoleonic Wars. Figure 5 illustrates a portion of the 1829 plan of Moore Township (Mount 1829). No Indigenous notations are depicted near the study area on the 1829 plan of Moore Township, however, the southwest corner of the township, including 2,575 acres, had been dedicated as an "Indian Reserve". As it relates to the study area, no notations or landowner names are illustrated on the 1829 plan of Moore Township for Parcel 1 and Parcel 3; Mary Hughes is illustrated as the landowner for Parcel 2.

A portion of the 1880 map of Moore Township from the *Illustrated Historical Atlas of the County of Lambton, Ontario* (Belden & Co. 1880) is illustrated in Figure 6. Many lots on the 1880 map do not show a landowner name or evidence of structures; however, this is because only the names of subscribers to the *Dominion Atlas of Canada* were shown. In fact, the lots of Moore Township would have been claimed by various private landowners, holdings companies, the Crown, and the Clergy by the time of the 1880 map. The population of Moore Township had reached 5,146 by 1881, thanks in large part to the advent of the Canada Southern Railway (Mika and Mika 1983). Though the interior of the township had been settled, the population of the township and economic centres continue to be focused along the St. Clair River, particularly in the communities of Corunna, Mooretown, Courtright, and Brigden. Table 3 summarizes the historical notations depicted on the 1880 map of Moore Township.

Table 3: Applicable Landowner Summary from the 1880 Map of Moore Township

Study Area	Lot	Concession	Landowner	Comment
Parcel 1	17	8	None depicted	No structures or notations illustrated
Parcel 2	17	7	None depicted	No structures or notations illustrated
Parcel 3	19	6	W ^m McDonald (west half); Jas. Jarvis (east half)	One structure illustrated in the northeast corner of lot, near the intersection of early roads (now Tecumseh Road and Moore Line)

The majority of the region surrounding the study area has been subject to European-style agricultural practices for over 150 years, having been settled by Euro-Canadian farmers by the late 19th century. Much of the region today continues to be used for agricultural purposes.

1.3 Archaeological Context

1.3.1 The Natural Environment

The study area is situated in the St. Clair Clay Plain physiographic region. Chapman and Putnam (1984:147) describe the St. Clair Clay Plain as:

Adjoining Lake St. Clair in Essex and Kent County Counties and the St. Clair River in Lambton County are extensive clay plains covering 2,270 square miles. The region is one of little relief, lying between 575 and 700 feet a.s.l. [above sea level], except for the moraine at Ridgetown and Blenheim which rises 50 to 500 feet higher....Glacial Lake Whittlesey, which deeply covered all of these lands, and Lake Warren which subsequently covered nearly the whole area, failed to leave deep stratified beds of sediment on the underlying clay till except around Chatham, between Blenheim and the Rondeau marshes, and in a few other smaller areas. Most of Lambton and Essex Counties, therefore, are essentially till plains smoothed by shallow deposits of lacustrine clay which settled in the depressions while the knolls were being lowered by wave action.

Soils within the study area are classified as Caister clay and Brookston clay. Caistor clay is slightly stoney and has imperfect drainage, and Brookston clay is essentially stone-free with poor drainage (Matthews *et*

al. 1957). Agricultural yields and variability improve with artificial drainage and, with drainage improvements, would have created soil conditions suitable for early agricultural practices.

Potable water is the single most important resource for any extended human occupation or settlement, and since water sources in southwestern Ontario have remained relatively stable over time, proximity to drinkable water is regarded as a useful index for evaluating archaeological site potential. In fact, distance to water is one of the most used variables for predictive modelling of archaeological site location in Ontario. While impacted by municipal drainage improvement projects, the nearest sources of extant potable water are tributaries of Nichol Creek, approximately 1.7 kilometres to the east of Parcel 1 and Parcel 2, and approximately 5.1 kilometres to the east of Parcel 3.

1.3.2 Registered Archaeological Sites and Surveys

In Canada, archaeological sites are registered within the Borden system, a national grid system designed by Charles Borden in 1952 (Borden 1952). The grid covers the entire surface area of Canada and is divided into major units containing an area that is two degrees in latitude by four degrees in longitude. Major units are designated by uppercase letters. Each major unit is subdivided into 288 basic unit areas, each containing an area of 10 minutes in latitude by 10 minutes in longitude. The width of basic units reduces as one moves north due to the curvature of the earth. In southern Ontario, each basic unit measures approximately 13.5 kilometres east-west by 18.5 kilometres north-south. In northern Ontario, adjacent to Hudson Bay, each basic unit measures approximately 10.2 kilometres east-west by 18.5 kilometres north-south. Basic units are designated by lowercase letters. Individual sites are assigned a unique, sequential number as they are registered. These sequential numbers are issued by the Ministry who maintain the *Ontario Archaeological Sites Database*. The study area under review is located within Borden Block AfHo.

Information concerning specific site locations is protected by provincial policy and is not fully subject to the *Freedom of Information and Protection of Privacy Act* (Government of Ontario 1990b). The release of such information in the past has led to looting or various forms of illegally conducted site destruction. Confidentiality extends to media capable of conveying location, including maps, drawings, or textual descriptions of a site location. The Ministry will provide information concerning site location to the party or an agent of the party holding title to a property, or to a licensed archaeologist with relevant cultural resource management interests.

An examination of the Ministry's *Ontario Archaeological Sites Database* has shown that there are three archaeological sites registered within a one-kilometre radius of the study area (Government of Ontario 2025a). Table 4 provides a list of the registered archaeological sites near the study area; none are within 50 metres of the study area.

Table 4: Registered Archaeological Sites near the Study Area

Borden Number	Site Name	Site Type	Cultural Affiliation
AfHo-55	Location 1	Scatter	Indigenous
AfHo-56	Dawn-Corunna Location 1	Homestead	Euro-Canadian

Borden Number	Site Name	Site Type	Cultural Affiliation
AfHo-57	Dawn-Corunna Location 12	Findspot	Indigenous

Based on a query of the Ministry's *Ontario Public Register of Archaeological Reports* (Government of Ontario 2025b), no previous archaeological assessments have been completed within 50 metres of the study area.

1.4 Existing Conditions

The study area is represented by three individual workspaces, comprising approximately 26.72 ha (see Figure 2), and includes ploughed agricultural lands, sparse woodlot and scrubland, and existing Enbridge infrastructure (namely, access roads and well heads associated with the existing natural gas storage pool).

1.5 Archaeological Potential

Archaeological potential is established by determining the likelihood that archaeological resources may be present on a subject property. Stantec applied archaeological potential criteria commonly used by the Ministry (Government of Ontario 2011) to determine areas of archaeological potential within the region under study. These variables include proximity to previously identified archaeological sites, distance to various types of water sources, soil texture and drainage, glacial geomorphology, elevated topography, and the general topographic variability of the area.

Distance to modern or ancient water sources is generally accepted as the most important determinant of past human settlement patterns and considered alone, may result in a determination of archaeological potential. However, any combination of two or more other criteria, such as well-drained soils or topographic variability, may also indicate archaeological potential. Finally, extensive land disturbance can eradicate archaeological potential.

As discussed above, distance to water is an essential factor in archaeological potential modeling. When evaluating distance to water it is important to distinguish between water and shoreline, as well as natural and artificial water sources, as these features affect site locations and types to varying degrees. The Ministry categorizes water sources in the following manner:

- Primary water sources: lakes, rivers, streams, and creeks.
- Secondary water sources: intermittent streams and creeks, springs, marshes, and swamps.
- Past water sources: glacial lake shorelines, relic river or stream channels, cobble beaches, and shorelines of drained lakes or marshes.
- Accessible or inaccessible shorelines: high bluffs, swamp or marshy lake edges, and sandbars stretching into marsh.

The closest primary sources of extant potable water are tributaries of Nichol Creek. Additional ancient and/or relic tributaries of other primary and secondary water sources may have existed but are not identifiable today and were not illustrated on historical mapping.

Soil texture can be an important determinant of past settlement, usually in combination with other factors such as topography. The Caister clay and Brookston clay soil of the study area, while imperfectly and poorly drained, is adequate for early agriculture.

An examination of the Ministry's *Ontario Archaeological Sites Database* identified three archaeological sites registered within a one-kilometre radius of the study area (Government of Ontario 2025a). None of the registered archaeological sites are within 50 metres of the study area.

Archaeological potential can be extended to areas of early Euro-Canadian settlement, including places of military or pioneer settlements; early transportation routes; and properties listed on the municipal register or designated under the *Ontario Heritage Act* (Government of Ontario 1990a) or property that local histories or informants have identified with possible historical events. While no listed or designated properties are within 300 metres of the study area (St. Clair Township 2025), the 1880 map of Moore Township (Belden & Co. 1880) illustrates the township as largely being settled (at least by those who had subscribed to the atlas and had their names associated with the map), particularly along the banks of the St. Clair River and around the early communities of Corunna, Mooretown, Courtright, and Brigden. The 1829 plan of Moore Township indicates Mary Hughes owned the lot associated with Parcel 2. No landowners or historical notations are illustrated on the 1880 map regarding Parcel 1 and Parcel 2, and two landowner and one structure is depicted on the 1880 map for Parcel 3. Much of the established road system and agricultural settlement from the 19th century remains visible today.

When the above listed criteria are applied, the study area retains archaeological potential and, in accordance with Section 1.3.1 of the Ministry's 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011), Stage 2 archaeological assessment is required.

2 Field Methods

Stage 1-2 archaeological assessment of the study area was conducted under Project Information Form (PIF) number P256-0840-2024 issued to Parker Dickson, MA of Stantec by the Ministry. Overall, the study area comprises approximately 26.72 ha of ploughed and weathered agricultural field, sparse woodlot and scrubland, and existing Enbridge infrastructure (namely, access roads and well heads associated with the existing natural gas storage pool). Prior to the start of the Stage 1-2 archaeological assessment, Enbridge provided preliminary mapping of the Project's proposed impacts which defined the assessment area (i.e., the study area). This mapping was geo-referenced by Stantec's Geographical Information Services (GIS) team and a digital file (i.e., a shape file) was created of the study area. The digital file was uploaded to handheld Global Positioning Service (GPS) devices for use in the field. Enbridge's preliminary mapping is provided to the Ministry as the Development Map for this report package.

The fieldwork for the Stage 1-2 archaeological assessment of the study area was conducted between December 10, 2024, and December 13, 2024 (Table 5). A slight snowfall occurred overnight on December 12, 2024; however, the snowfall did not negatively impact archaeological survey on December 13, 2024, as soils remained friable and unfrozen during the test pit survey. Overall, assessment conditions were adequate and at no time was the archaeological assessment conducted when the field, weather, or lighting conditions were detrimental to the identification and recovery of archaeological resources. Photographic documentation in Section 8.1 of this report confirms that field conditions met the requirements for Stage 1-2 archaeological assessment, as per the Ministry's 2011 *Standards and Guidelines for Consultant Archaeologists* (Section 7.8.6 Standard 1.a; Government of Ontario 2011). An overview of the Stage 1-2 assessment methodology, as well as photograph locations and directions, is depicted on Figure 7 in Section 9.0 of this report.

Table 5: Weather and Field Conditions during the Stage 1-2 Archaeological Assessment

Date	Field Director	Activity	Weather	Comments
December 10, 2024	Nathan Ng (R1223)	Pedestrian survey (Parcel 1)	Mainly cloudy and cool	Ground surface visibility > 80%
December 11, 2024	Nathan Ng (R1223)	Pedestrian survey (Parcel 1)	Overcast and cool	Ground surface visibility > 80%
December 12, 2024	Krista Lane (R382)	Property inspection (Parcel 2 and 3)	Mainly cloudy and cool	Ground surface visibility > 80%
December 13, 2024	Nathan Ng (R1223)	Test pit survey (Parcel 2 and 3)	Mainly cloudy and cool	Soils were unfrozen and friable; soil screened well

Approximately 92.76% of the study area was active and ploughed agricultural field and was subject to pedestrian survey, at a five-metre interval, in accordance with Section 2.1.1 of the Ministry's 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011). Ground surface

visibility during the pedestrian survey was greater than 80% and provided for adequate conditions for the identification of archaeological resources. Photographs illustrating the pedestrian survey of the study area are provided in Section 8.1.

When archaeological resources were identified during the pedestrian survey, the survey transect was decreased to a one-metre interval and spanned a minimum 20-metre radius around the identified artifact. This approach was used to determine if the artifact was an isolated find or part of a larger surface scatter, as per Section 2.1.1 Standard 7 of the Ministry's 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011). The artifact was collected, and a Universal Transverse Mercator (UTM) coordinate was taken as per Section 2.1 Standard 4.a. of the Ministry's 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011). The Stage 2 surface collection was conducted according to Stage 3 controlled surface pickup (CSP) standards, as allowed by the *Fieldwork: Stage 2 – Frequently Asked Questions* document issued by the Ministry (Government of Ontario 2016). As the identified archaeological resource comprised a single isolated find (see Section 3.0 for record of finds for each archaeological location), no further UTM coordinates were required or recorded. The UTM coordinates were taken using ArcGIS Collector powered by ESRI, customized for archaeological survey and assessment, on a handheld mobile device paired with an R1 Receiver to an accuracy of less than one metre. The UTM coordinates are located in zone 17T and are based upon the North American Datum 1983 (NAD83). A map illustrating the exact site location and a listing of UTM coordinates recorded during the assessment are provided in the *Supplementary Documentation* to this report.

Approximately 0.63% of the study area comprised sparse woodlot, scrubland, and agricultural land that was inaccessible for ploughing. This portion of the study area was surveyed using the test pit survey method. The test pit survey was conducted at a five-metre interval, in accordance with Section 2.1.2, and specifically Section 2.1.2 Standard 1.f for Parcel 3, of the Ministry's 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011). Excavated test pits were at least 30 centimetres in diameter and excavated five centimetres into sterile subsoil. The soils were examined for stratigraphy, cultural features, or evidence of fill. The soil was screened through six-millimetre (mm) mesh hardware cloth to facilitate the recovery of artifacts and then used to backfill the pit. No artifacts were recovered during the test pit survey of the study area and so no further test pit methodology was required. Photographs illustrating the test pit survey of the study area are provided in Section 8.1.

The remainder of the study area, approximately 6.61%, was identified as previously disturbed and was not surveyed. Such areas include access roads, ditching, and well heads. While this portion of the study area was not surveyed, it was photographically documented in Section 8.1 to confirm that physical features affected the ability to survey portions of the study area in accordance with Section 7.8.6 Standard 1.b of the Ministry's 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011).

3 Record of Finds

The Stage 1-2 archaeological assessment was conducted employing the methods described in Section 2.0. An inventory of the documentary record generated by fieldwork is provided in Table 6. One new archaeological location was identified during the Stage 2 survey of the study area. In accordance with Section 7.12 of the Ministry's 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011), a Borden number for the identified archaeological location is not required. Maps illustrating exact archaeological site locations do not form part of this public report; they may be found in the *Supplementary Documentation*.

Table 6: Inventory of Documentary Record

Document Type	Current Location of Document Type	Additional Comments
Four pages of field notes	Stantec office in London, Ontario	In original field book and scanned in project file
One set of digital data files	Stantec GIS server in Markham, Ontario	Stored digitally on central GIS server
33 digital photographs	Stantec office in London, Ontario	Stored digitally in project file and on central GIS server

The material culture collected during the Stage 2 archaeological survey of the study area is contained in one Bankers box, labeled by location number. The box will be temporarily housed at the Stantec London office until formal arrangements can be made for a transfer to a Ministry collections facility.

3.1 Location 1

Location 1 was identified during the pedestrian survey of a ploughed agricultural field and comprises a single, isolated find of one retouched flake. The recovered artifact is illustrated on Plate 1 in Section 8.2.

Chert type identification was accomplished visually using reference materials located in the Stantec London office. Chert is a naturally occurring mineral found in sedimentary rocks that is a granular, crystalline form of quartz composed of cryptocrystalline and microcrystalline crystals (Eley and von Bitter 1989). Raw material acquisition and procurement strategies have long been theorized in academic literature. Some researchers suggest that raw material choices are purely utilitarian (e.g., Deller 1979; Ellis 1989; Parker 1986), while others suggest non-utilitarian reasons (e.g., Hall 1993; Simons *et al.* 1984). Regardless of the reason, chert type identification and their respective quantities within a particular assemblage provide an opportunity to evaluate numerous archaeological variables, including group mobility and sedentism, lithic reduction strategy and technique, transportation, trade, and symbolism.

The recovered retouched flake is manufactured from Kettle Point chert. Kettle Point formation chert is from the Late Devonian age and is situated between the Kettle Point (Late Devonian shales) and the Ipperwash formations (Middle Devonian Limestone). It occurs as submerged outcrops that extend approximately 1,350 metres into Lake Huron (Janusas 1984). Secondary deposits have been reported in

Essex County (Janusas 1984) and the Ausable Basin (Kenyon 1980; Eley and Von Bitter 1989). Kettle Point chert can be identified by the presence of a waxy lustre and occurs in a range of colours, including brown, grey, and greenish colours, as well as reddish-purple and dark blue varieties (Eley and von Bitter 1989). A rusty staining on the surface of artifacts is frequently noted (Fisher 1997).

Retouched flakes are fragments of chipping detritus that display intentional chipping or sharpening marks along their edges. Expedient tools, such as retouched flakes, cannot be used to determine the cultural affiliation or time period of the occupation of a site.

3.1.1 Location 1 Artifact Catalogue

Table 7 provides the complete catalogue (Cat.) of the Stage 2 artifact assemblage recovered from Location 1.

Table 7: Location 1 Artifact Catalogue

Cat. #	Context	Artifact	Quantity	Chert	Additional Comments
1	CSP 1	Retouched flake	1	Kettle Point	Retouch on incurved lateral edge, ventral side; usewear on other lateral edge, dorsal side, and around lateral-distal point

4 Analysis and Conclusions

Enbridge retained Stantec to conduct Stage 1-2 archaeological assessment for the study area associated with the Project. The Stage 1 assessment determined that the study area retained archaeological potential and Stage 2 assessment was required. The Stage 2 archaeological assessment was conducted between December 10, 2024, and December 13, 2024. During the Stage 2 survey, one new archaeological location was identified – Location 1. Maps identifying exact archaeological site locations do not form part of this public report; they may be found in the *Supplementary Documentation*.

4.1 Location 1

The Stage 2 assessment of Location 1 resulted in the identification of a single, isolated find of one retouched flake. Expedient tools, such as retouched flakes, cannot be used to determine the cultural affiliation or time period of the occupation of a site. Given the temporally non-diagnostic and isolated nature of the recovered artifact, the cultural heritage value or interest of Location 1 is sufficiently documented in accordance with Section 2.2 of the Ministry's 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011).

5 Recommendations

Enbridge retained Stantec to conduct Stage 1-2 archaeological assessment for the study area associated with the Project. The Stage 1 assessment determined that the study area retained archaeological potential and Stage 2 assessment was required. The Stage 2 archaeological assessment was conducted between December 10, 2024, and December 13, 2024, and one new archaeological location, Location 1, was identified. Maps identifying exact site locations do not form part of this public report; they may be found in the *Supplementary Documentation*.

5.1 Location 1

Location 1 is sufficiently documented in accordance with Section 2.2 of the Ministry's 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011). Thus, **no further archaeological assessment is recommended for Location 1.**

The Ministry is asked to review the results presented and to enter this report into the *Ontario Public Register of Archaeological Reports*.

6 Advice on Compliance with Legislation

In accordance with Section 7.5.9 of the Ministry's 2011 Standards and Guidelines for Consultant Archaeologists (Government of Ontario 2011), the following standard statements are a required component of archaeological reporting and are provided from the Ministry's 2011 Standards and Guidelines for Consultant Archaeologists (Government of Ontario 2011).

This report is submitted to the Minister of Citizenship and Multiculturalism as a condition of licensing in accordance with Part VI of the *Ontario Heritage Act*, R.S.O. 1990, c O.18 (Government of Ontario 1990a). The report is reviewed to ensure that it complies with the standards and guidelines that are issued by the Minister, and that the archaeological fieldwork and report recommendations ensure the conservation, protection and preservation of the cultural heritage of Ontario. When all matters relating to archaeological sites within the study area of a development proposal have been addressed to the satisfaction of the Ministry of Citizenship and Multiculturalism, a letter will be issued by the ministry stating that there are no further concerns with regard to alterations to archaeological sites by the proposed development.

It is an offence under Sections 48 and 69 of the *Ontario Heritage Act* (Government of Ontario 1990a) for any party other than a licensed archaeologist to make any alteration to a known archaeological site or to remove any artifact or other physical evidence of past human use or activity from the site, until such time as a licensed archaeologist has completed fieldwork on the site, submitted a report to the Minister stating that the site has no further cultural heritage value or interest, and the report has been filed in the *Ontario Public Register of Archaeological Reports* referred to in Section 65.1 of the *Ontario Heritage Act* (Government of Ontario 1990a)

Should previously undocumented archaeological resources be discovered, they may be a new archaeological site and therefore subject to Section 48(1) of the *Ontario Heritage Act* (Government of Ontario 1990a) The proponent or person discovering the archaeological resources must cease alteration of the site immediately and engage a licensed consultant archaeologist to carry out archaeological fieldwork, in compliance with Section 48(1) of the *Ontario Heritage Act* (Government of Ontario 1990a)

The *Funeral, Burial and Cremation Services Act*, 2002, S.O. 2002, c.33 (Government of Ontario 2002), requires that any person discovering or having knowledge of a burial site shall immediately notify the police or coroner and the Registrar of Funeral, Burial and Cremation Services Act and Manager of Burials Unit at the Ministry of Public and Business Service Delivery and Procurement also be immediately notified.

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8 Images

8.1 Photographs

Photo 1: Pedestrian survey of the study area, facing northeast



Photo 2: Pedestrian survey of the study area, facing west



Photo 3: Ground conditions during the pedestrian survey of the study area, facing east



Photo 4: Ground conditions during the pedestrian survey of the study area, facing east



Photo 5: View of typical existing disturbance (well head) within the study area, facing east



Photo 6: View of typical existing disturbance (access road) within the study area, facing east



Photo 7: View of typical existing disturbance (access road) within the study area, facing south



Photo 8: View of typical existing disturbance (access road) within the study area, facing south



Photo 9: View of typical existing disturbance (access road) within the study area, facing north-northwest



Photo 10: View of typical existing disturbance (ditching) within the study area, facing north



Photo 11: View of typical existing disturbance (ditching) within the study area, facing east-southeast



Photo 12: General view of the study area, facing southeast



**Photo 13: General view of the study area,
facing northeast**



**Photo 14: Test pit survey of the study area,
facing west-northwest**



**Photo 15: Test pit survey of the study area,
facing east**



**Photo 16: Test pit survey of the study area,
facing northeast**



**Photo 17: General view of the study area,
facing southwest**



**Photo 18: Test pit survey of the study area,
facing northeast**



8.2 Artifact Plates

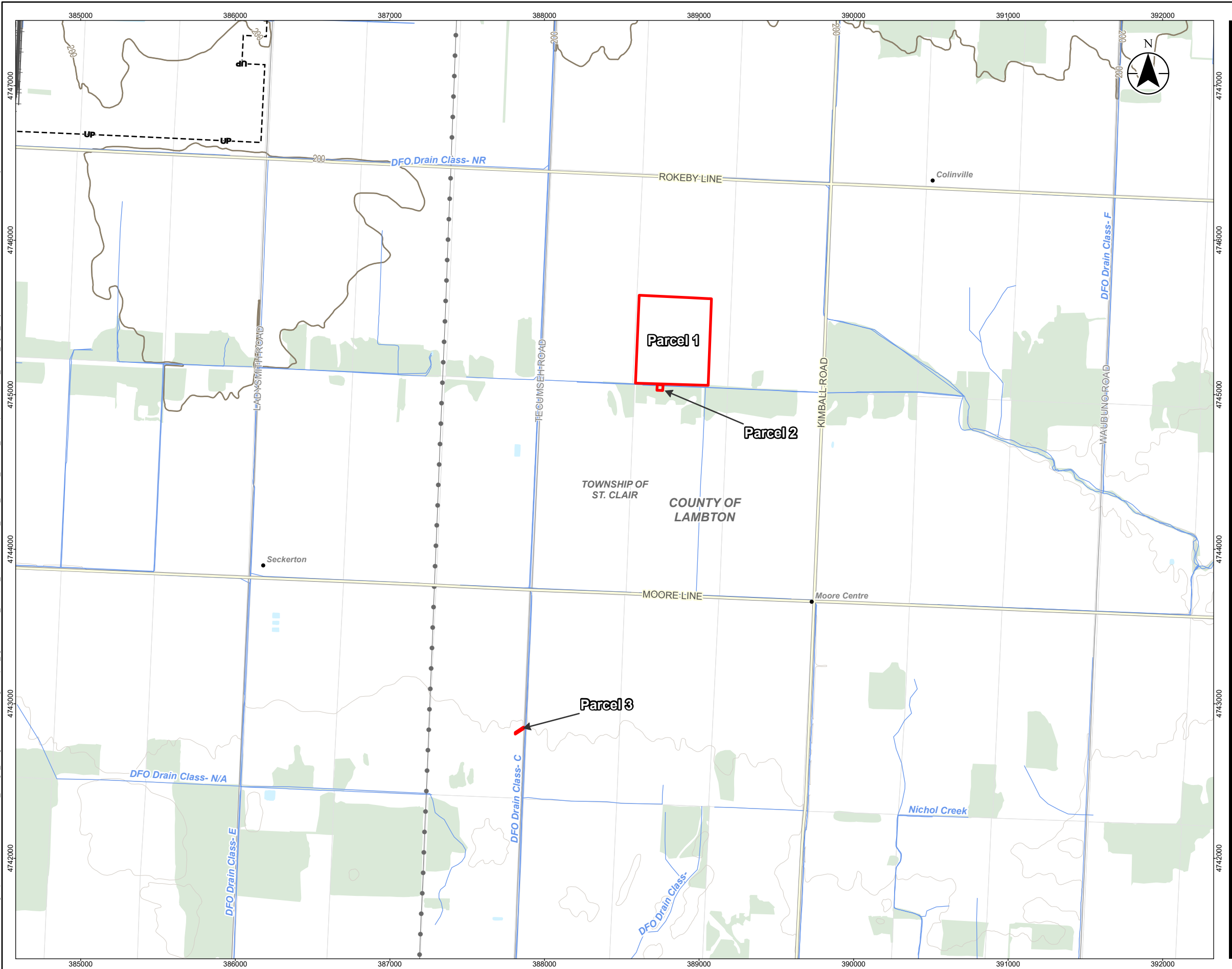
Plate 1 Artifact from Location 1



9 Maps

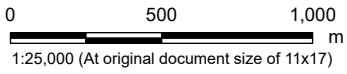
General maps of the Project and archaeological assessment will follow on succeeding pages. Maps illustrating exact site locations do not form part of this public report; they may be found in the Supplementary Documentation.

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Legend

- Study Area (Approximate Location)
- Constructed Drain
- Hydro Line
- Unknown Pipeline
- Major Road
- Minor Road
- Railway
- Watercourse (Permanent)
- Lot
- Waterbody
- Wooded Area



- Notes**
- 1. Coordinate System: NAD 1983 UTM Zone 17N
 - 2. Contains information licensed under the Open Government Licence – Ontario, and the Open Government Licence - Canada, accessed 2025.

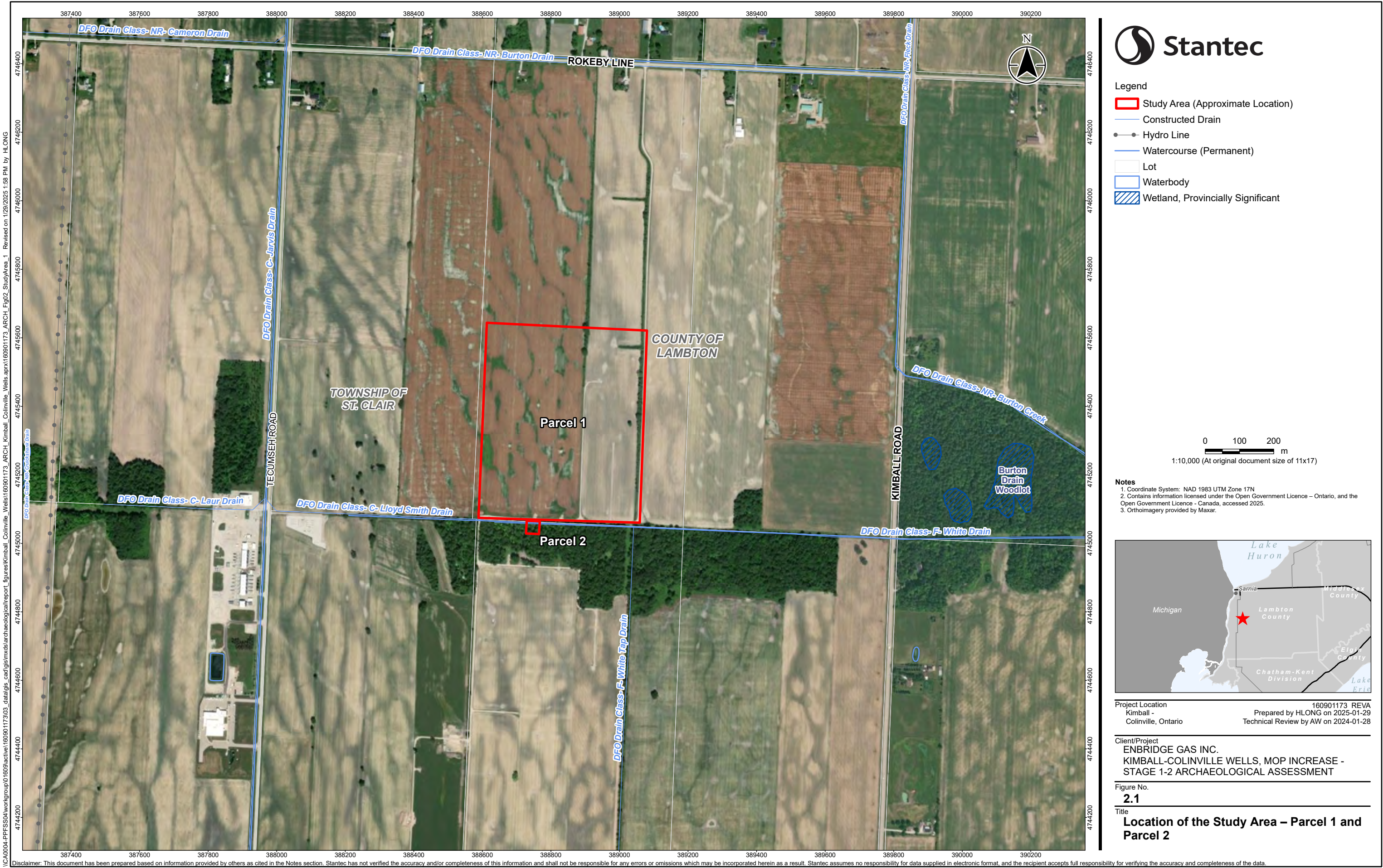


Project Location: Kimball - Colinville, Ontario
160901173 REVA
Prepared by HLONG on 2025-01-29
Technical Review by AW on 2024-01-28

Client/Project: ENBRIDGE GAS INC.
KIMBALL-COLINVILLE WELLS, MOP INCREASE -
STAGE 1-2 ARCHAEOLOGICAL ASSESSMENT

Figure No.: **1**

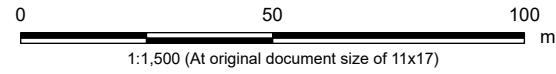
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- Legend
- Study Area (Approximate Location)
 - Constructed Drain
 - Watercourse (Permanent)
 - Lot



- Notes
1. Coordinate System: NAD 1983 UTM Zone 17N
 2. Contains information licensed under the Open Government Licence – Ontario, and the Open Government Licence - Canada, accessed 2025.
 3. Orthoimagery provided by Maxar, Microsoft.



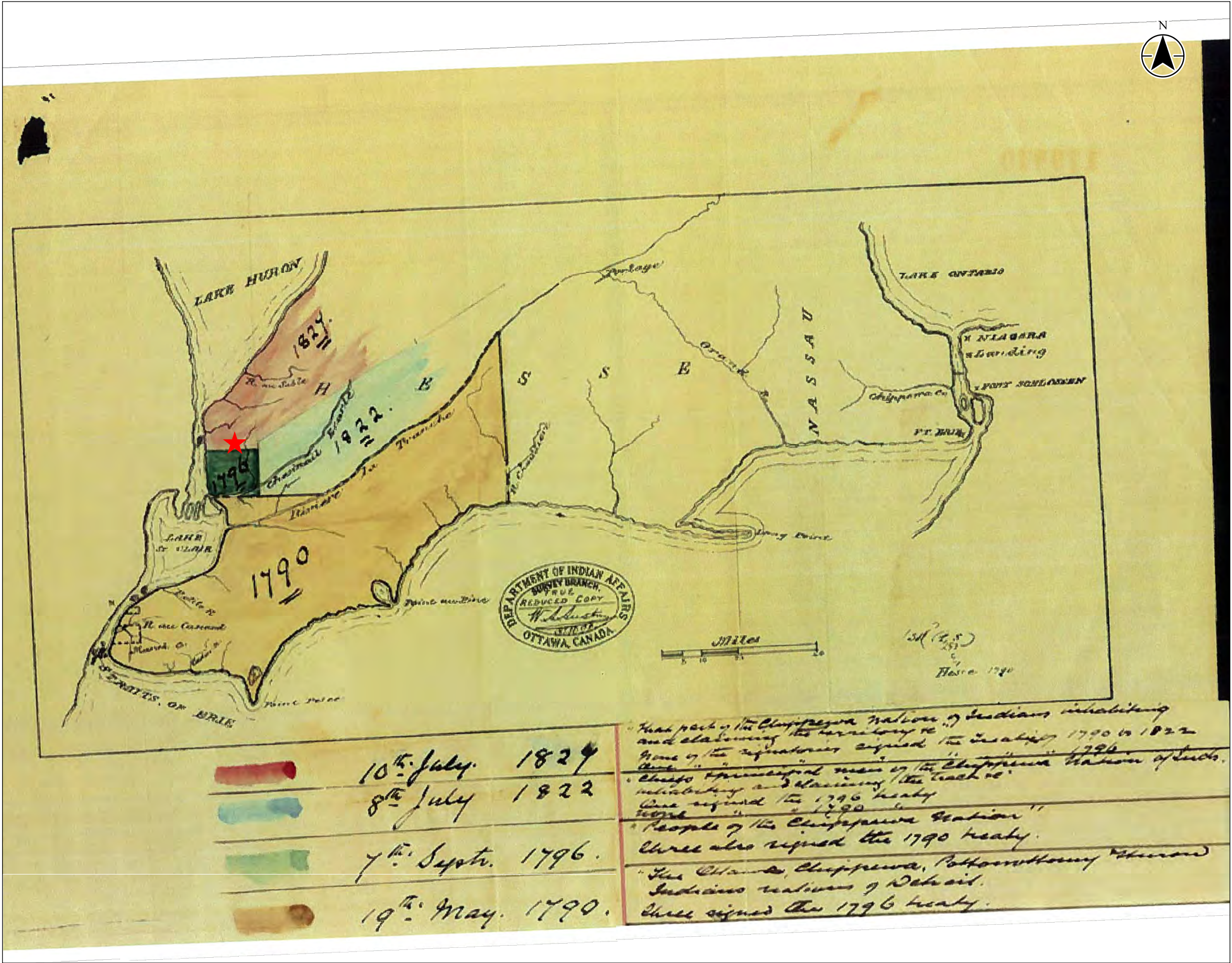
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160901173 REVA
Prepared by HLONG on 2025-01-29
Technical Review by AW on 2024-01-28

Client/Project: ENBRIDGE GAS INC.
KIMBALL-COLINVILLE WELLS, MOP INCREASE -
STAGE 1-2 ARCHAEOLOGICAL ASSESSMENT

Figure No.: **2.2**

Title: **Location of the Study Area – Parcel 3**

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Legend

★ Project Location (Approximate)

Notes
1. Map not to scale.
2. Government of Canada, n.d.a. Map of Treaty Areas in Upper Canada. Ottawa: Department of Indian Affairs, Survey Branch.

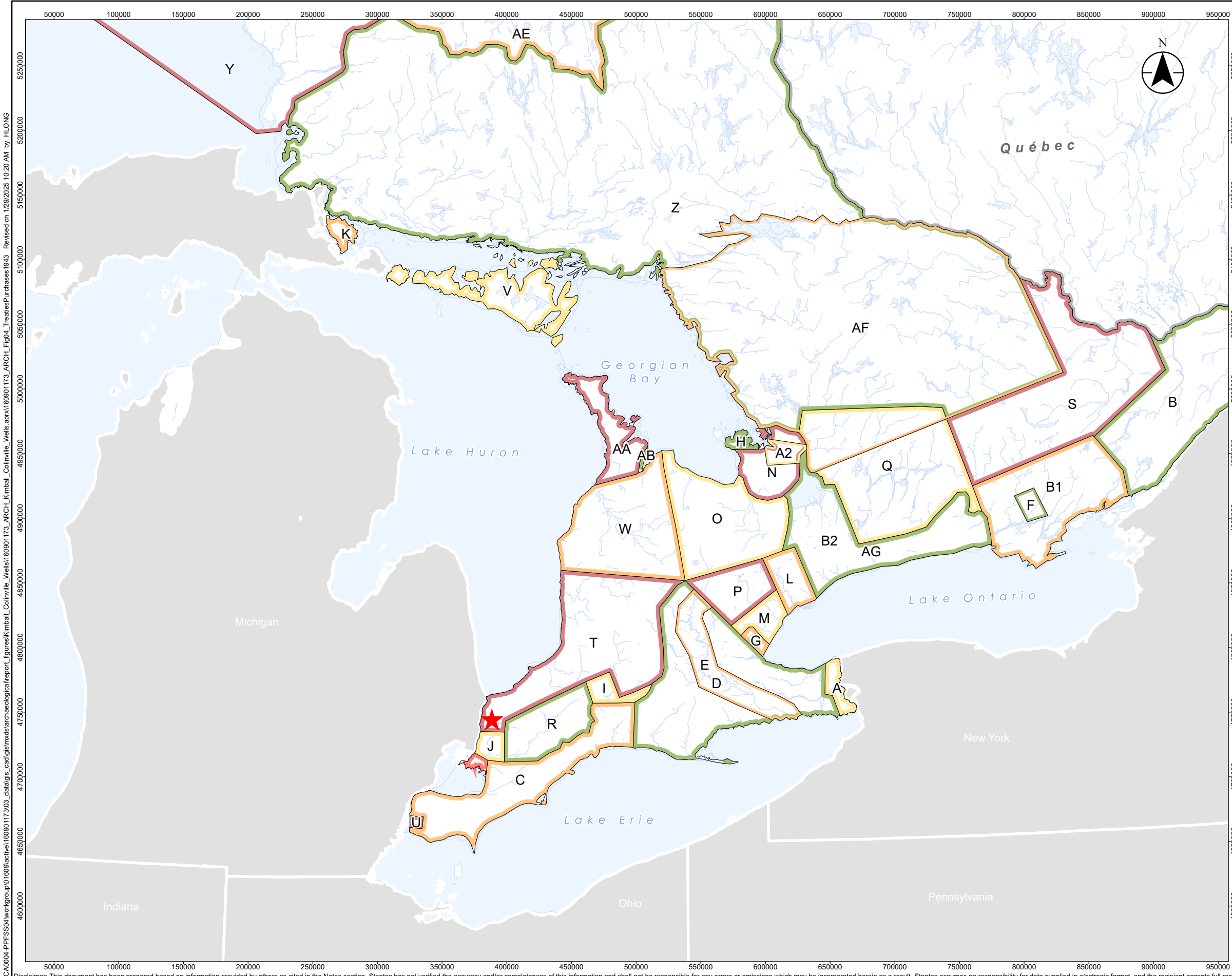


Project Location: Kimball - Colinville, Ontario
160901173 REVA
Prepared by HLONG on 2025-01-29
Technical Review by AW on 2024-01-28

Client/Project: ENBRIDGE GAS INC.
KIMBALL-COLINVILLE WELLS, MOP INCREASE - STAGE 1-2 ARCHAEOLOGICAL ASSESSMENT

Figure No. 3

Title: Map of Treaty Areas of Upper Canada



Legend

★ Project Location (Approximate)

- A** Treaty No. 381, May 9th, 1781 (Mississauga and Chippewa)
- AA** Treaty No. 72, October 30th, 1854 (Chippewa)
- AB** Treaty No. 82, February 9th, 1857 (Chippewa)
- AE** Treaty No. 9, James Bay 1905, 1906 (Ojibway and Cree)
- AF** Williams Treaty, October 31st and November 15th, 1923 (Chippewa and Mississauga)
- AG** Williams Treaty, October 31st, 1923 (Chippewa)
- A2** John Collins' Purchase, 1785 (Chippewa)
- B** Crawford's Purchase, October 9th, 1783 (Algonquin and Iroquois)
- B1** Crawford's Purchase, October 9th, 1783 (Mississauga)
- B2** Crawford's Purchase, 1783, 1787, 1788 (Mississauga)
- C** Treaty No. 2, May 19th, 1790 (Odawa, Chippewa, Pottawatomi, and Huron)
- D** Treaty No. 3, December 2nd, 1792 (Mississauga)
- E** Haldimand Tract: from the Crown to the Mohawk, 1793
- F** Tyendinaga: from the Crown to the Mohawk, 1793
- G** Treaty No. 3 3/4: from the Crown to Joseph Brant, October 24th, 1795
- H** Treaty No. 5, May 22nd, 1798 (Chippewa)
- I** Treaty No. 6, September 7th, 1796 (Chippewa)
- J** Treaty No. 7, September 7th, 1796 (Chippewa)
- K** Treaty No. 11, June 30th, 1798 (Chippewa)
- L** Treaty No. 13, August 1st, 1805 (Mississauga)
- M** Treaty No. 13A, August 2nd, 1805 (Mississauga)
- N** Treaty No. 16, November 18th, 1815 (Chippewa)
- O** Treaty No. 18, October 17th, 1818 (Chippewa)
- P** Treaty No. 19, October 28th 1818 (Chippewa)
- Q** Treaty No. 20, November 5th, 1818 (Chippewa)
- R** Treaty No. 21, March 9th, 1819 (Chippewa)
- S** Treaty No. 27, May 31st, 1819 (Mississauga)
- T** Treaty No. 27½, April 25th, 1825 (Ojibwa and Chippewa)
- U** Treaty No. 35, August 13th, 1833 (Wyandot or Huron)
- V** Treaty No. 45, August 9th, 1836 (Chippewa and Odawa, "For All Indians To Reside Thereon")
- W** Treaty No. 45½, August 9th, 1836 (Saugeen)
- X** Treaty No. 57, June 1st, 1847 (Iroquois of St. Regis)
- Y** Treaty No. 60, Robinson, Superior, September 7th, 1850 (Ojibwa)
- Z** Treaty No. 61, Robinson, Huron, September 9th, 1850 (Ojibwa)

Notes

1. Coordinate System: NAD 1983 UTM Zone 17N
2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2018.
3. Treaty boundaries adapted from Morris 1943 (1964 reprint). For cartographic representation only.



Project Location
Kimball -
Colinville, Ontario

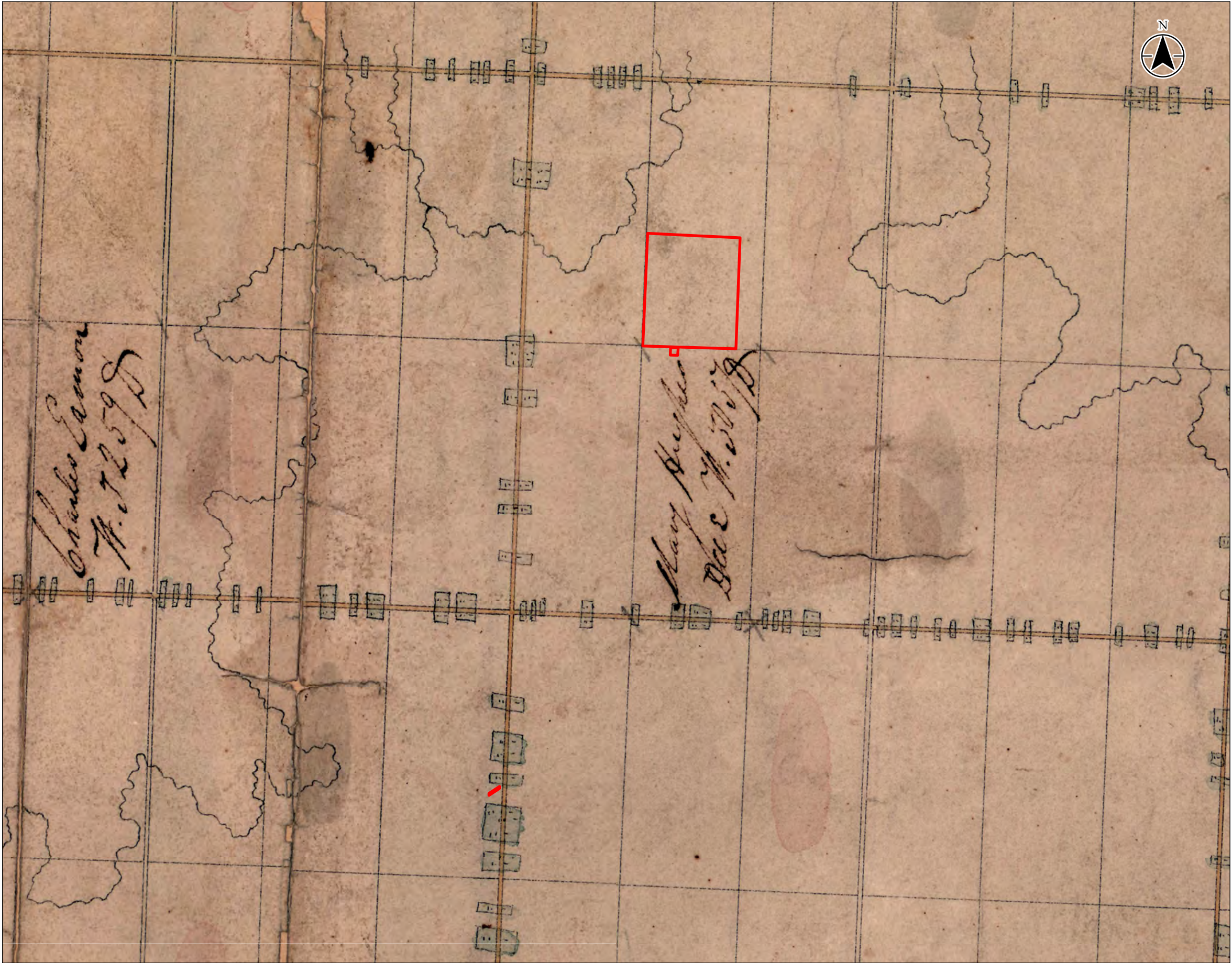
160901173 REVA
Prepared by HLONG on 2025-01-29
Technical Review by AW on 2024-01-28

Client/Project
ENBRIDGE GAS INC.
KIMBALL-COLINVILLE WELLS, MOP INCREASE -
STAGE 1-2 ARCHAEOLOGICAL ASSESSMENT

Figure No.
4

Title
**Treaties and Purchases (Adapted from
Morris 1943)**

\\CA0004-PPFSS04\workgroup\01609\active\160901173\03_data\gis_cad\gis\mxds\archaeological\report_figures\Kimball_Colinville_Wells\aprx\160901173_ARCH_Kimball_Colinville_Wells.aprx\160901173_ARCH_Fig05_1829Plan_Reviewed on 1/29/2025 10:21 AM by HLONG



Legend
 Study Area (Approximate Location)

Notes
1. Map not to scale
2. Historic map source: Mount, Roswell. 1829. Plan of Moore Township. Ministry of Natural Resources and Forestry, Crown Land Survey Records.



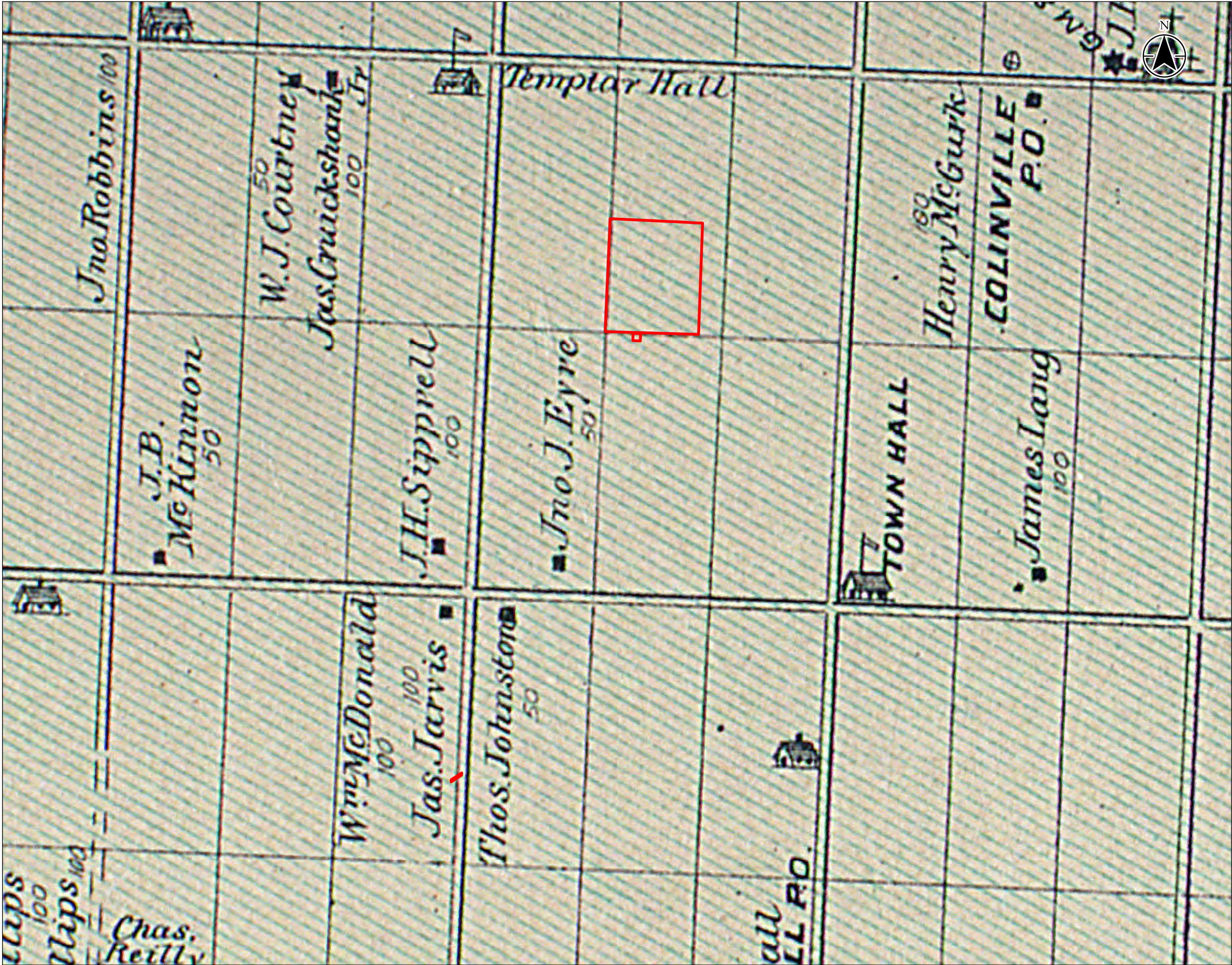
Project Location
Kimball -
Colinville, Ontario
160901173 REVA
Prepared by HLONG on 2025-01-29
Technical Review by AW on 2024-01-28

Client/Project
ENBRIDGE GAS INC.
KIMBALL-COLINVILLE WELLS, MOP INCREASE -
STAGE 1-2 ARCHAEOLOGICAL ASSESSMENT

Figure No.
5

Title
Portion of the 1829 Plan of Moore Township

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Legend
 Study Area (Approximate Location)

Notes
1. Map not to scale
2. Historic map source: Belden, H. 1880. Belden's Historical Atlas of the County of Lambton. H. Belden and Co.

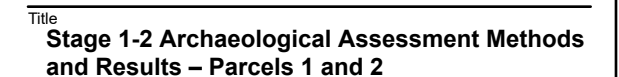
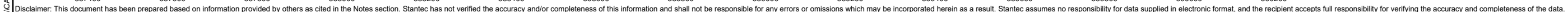


Project Location: Kimball - Colinville, Ontario
160901173 REVA
Prepared by HLONG on 2025-01-29
Technical Review by AW on 2024-01-28

Client/Project: ENBRIDGE GAS INC.
KIMBALL-COLINVILLE WELLS, MOP INCREASE - STAGE 1-2 ARCHAEOLOGICAL ASSESSMENT

Figure No.: 6

Title: Portion of the 1880 Map of Moore Township

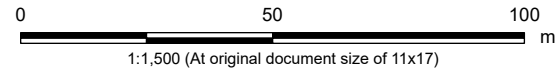


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Legend

- Study Area (Approximate Location)
- Archaeology Photo Log
- Previously Disturbed, Low to No Archaeological Potential – No Further Work Required
- Test Pit Surveyed, 5m Intervals – No Further Archaeological Work Required
- Constructed Drain
- Watercourse (Permanent)
- Lot



- Notes**
1. Coordinate System: NAD 1983 UTM Zone 17N
 2. Contains information licensed under the Open Government Licence – Ontario, and the Open Government Licence - Canada, accessed 2025.
 3. Orthoimagery provided by Maxar, Microsoft.



Project Location: Kimball - Colinville, Ontario
160901173 REVA
Prepared by HLONG on 2025-01-29
Technical Review by AW on 2024-01-29

Client/Project: ENBRIDGE GAS INC.
KIMBALL-COLINVILLE WELLS, MOP INCREASE -
STAGE 1-2 ARCHAEOLOGICAL ASSESSMENT

Figure No.: **7.2**

Title: **Stage 1-2 Archaeological Assessment Methods and Results – Parcel 3**

10 Closure

This report documents work that was performed in accordance with generally accepted professional standards at the time and location in which the services were provided. No other representations, warranties or guarantees are made concerning the accuracy or completeness of the data or conclusions contained within this report, including no assurance that this work has uncovered all potential archaeological resources associated with the identified property.

All information received from the client or third parties in the preparation of this report has been assumed by Stantec to be correct. Stantec assumes no responsibility for any deficiency or inaccuracy in information received from others.

Conclusions made within this report consist of Stantec's professional opinion as of the time of the writing of this report and are based solely on the scope of work described in the report, the limited data available and the results of the work. The conclusions are based on the conditions encountered by Stantec at the time the work was performed. Due to the nature of archaeological assessment, which consists of systematic sampling, Stantec does not warrant against undiscovered environmental liabilities nor that the sampling results are indicative of the condition of the entire property.

This report has been prepared for the exclusive use of the client identified herein and any use by any third party is prohibited. Stantec assumes no responsibility for losses, damages, liabilities or claims, howsoever arising, from third party use of this report. We trust this report meets your current requirements. Please do not hesitate to contact us should you require further information or have additional questions about any facet of this report.

2026 Kimball-Colinville Well Drilling Project

Appendix B Cultural Heritage Memo – Dawn to Corunna Project

July 16, 2025

Appendix B Cultural Heritage Memo – Dawn to Corunna Project



To:	Recipient's Name	From:	Jenn Como, BA Meaghan Rivard, MA, CAHP
	Recipient's Office		London, Ont.
File:	160961392	Date:	May 17, 2021

Reference: Dawn to Corunna Project

INTRODUCTION

Enbridge is proposing to construct a natural gas pipeline in the townships of St. Clair, Dawn-Euphemia, and Enniskillen. The natural gas pipeline will connect the existing Corunna and Dawn Compressor Stations.

Once a preferred route has been selected, a review of heritage resources in advance of construction of the Project within, and adjacent to, the Study Area will be included in the environmental study. This review is required by the 7th Edition of the Ontario Energy Board's (OEB) *Environmental Guidelines for the Location, Construction and Operation of Hydrocarbon Pipelines and Facilities in Ontario* (OEB 2016). The Guidelines require that heritage resources, including built heritage and cultural heritage landscapes, are considered prior to any pipeline replacement activities. This Heritage Overview was prepared by a Heritage Consultant specializing in the identification of heritage resources and the evaluation of cultural heritage value or interest in order to identify areas where further assessment of the built environment may be required, if any.

METHODOLOGY

The Heritage Overview was composed of a program of agency data requests, review of historical and topographic mapping, and a review of current aerial photography of the Study Area. Agency requests were conducted to determine the presence of protected properties within the Study Area. Protection of heritage resources may include, but is not limited to, designation under the Ontario Heritage Act (OHA), a provincial easement made under the OHA, or listing/registering of potential resources by the municipality. Consultation included correspondence with the following agencies and individuals:

- Ministry of Heritage, Sport, Tourism, and Culture Industries
- Ontario Heritage Trust (OHT)
- St. Clair Township
- The Township of Dawn-Euphemia
- The Township of Enniskillen

Historical mapping was reviewed to identify areas of high potential for potential heritage resources. Local resources as well as digital material was consulted. The map reviewed included:

- Belden, H. 1880. *Belden's Illustrated Historical Atlas of the County of Lambton, Ontario*. Sarnia: E. Phelps.

Current aerial photography was reviewed to determine the presence of potential heritage resources. Mapping of the Study Area is provided in Figure 1.

RESULTS

DATA REQUESTS

Agency data requests included both provincial and municipal requests for information. Consultation occurred via email and included mapping of the Study Area. At the provincial level, Kevin DeMille, with the Ontario Heritage Trust (OHT), reported on May 10, 2021 that there are no OHT properties or conservation easements within or adjacent to the Study Area. Karla Barboza, Heritage Team Lead with the Ministry of Heritage, Sport, Tourism, and Culture Industries (MHSTCI), confirmed on May 7, 2021 that there are no provincial heritage interests within or adjacent to the Study Area.

At the municipal level, St. Clair Township, the Township of Dawn-Euphemia, and the Township of Enniskillen were consulted to determine the presence of municipally protected properties. On May 7, 2021, Donna Clermont, Administrator-Clerk, and Ezio Nadalin, Planner, for the Township of Dawn-Euphemia confirmed that there are no municipally protected heritage interests within or adjacent to the Study Area. On May 10, 2021, Duncan McTavish, Administrator-Clerk, confirmed the same for the Township of Enniskillen. At the time of this memo, a response had not been received from St. Clair Township. However, the list of plaques, storyboards, and cairns, and the accompanying interactive map, available on the township's website have been reviewed (St. Clair Township 2021a, 2021b).

REVIEW OF HISTORICAL MAPPING

H. Belden's 1880 map of Lambton County was reviewed to identify the presence of historical structures, settlements, and landscape features within, or adjacent to, the Study Area (Belden 1880). Historical atlas mapping from this period typically only included the structures and names of landowners who subscribed to the *Dominion Atlas* in which these historical township maps were added as a supplement. Therefore, these township maps do not include a full list of landowners and their associated homesteads.

The 1880 historical mapping for Moore Township indicates that the Study Area includes the Town of Brigden. Other resources located within the Moore Township portion of the Study Area included the St. Clair Division of the Canada Southern Railway, multiple churches, the Birkhall and Waubung Post Offices, a Town Hall, a store, a cheese factory, a sawmill, and several homesteads scattered throughout the area. The Town Hall still appears to be extant and is located in close vicinity to Alternative Route 1. There is also potential for some of the homesteads near the Corunna Compressor Station and all four alternative routes in the northwest corner of the Study Area to still be present. Historical mapping of Enniskillen includes several scattered homesteads, a sawmill, a portion of the Old Sarnia and Oil Springs Plank Road, and the St. Clair Branch of the Canada Southern Railway with a station in nearby Oil City. These resources are not located within close proximity of any of the proposed routes.

Resources identified in the 1880 historic mapping of Sombra Township include the Town of Wilkesport with a hotel, store, and three sawmills on its outskirts, Bradshaw Post Office, a church, and multiple homesteads. There is potential for some of these homesteads to remain extant and within close proximity of the proposed routes.

The 1880 mapping for the Township of Dawn does not indicate any resources within the Study Area.

REVIEW OF CURRENT AERIAL PHOTOGRAPHY

The *Plaques of St. Clair Township* interactive map was reviewed to identify the presence of historical structures, settlements, and landscape features within, or adjacent to, the Study Area (St. Clair Township 2021b). The available data layers indicated the presence of 12 plaques marking resources within the Study Area, including churches, cemeteries, hamlets or settlements, and the Canada Southern Railway. The aerial imagery indicates that the tracks associated with the Canada Southern Railway and the Brigden Station are no longer extant. The Study Area was found to be a mixture of agricultural fields and wooded areas with farmhouses and a handful of small rural communities including Seckerton, Moore Centre, Kimball, Brigden, Waubuno, Cromar, Avonry, Bradshaw, Wilkesport, and Beaver Meadow.

Aerial photography from Google Earth was also consulted for the portion of the Study Area outside St. Clair Township's mapping (Google Earth Pro 2016). No additional potential resources were identified. The portions of the Study Area in Enniskillen and Dawn-Euphemia Townships was found to be of the same composition as the St. Clair Township portion described above. The Study Area also includes two extant Enbridge compressor stations.

ONTARIO ENERGY BOARD COMPLIANCE

Section 4.3.4 of the OEB Guidelines lists 17 indicators of CHVI or characteristics that suggest the presence of a potential heritage resource (see Table 1). A total of three indicators of CHVI were identified within or adjacent to the Study Area. The Study Area contains multiple cemeteries, properties with buildings or structures that are over 40 years of age, and historical transportation corridors. In addition to these indicators of CHVI identified by the OEB guidelines, the study area includes municipal plaques erected by St. Clair Township.

Table 1: OEB Indicators of CHVI

Indicators of Cultural Heritage Value or Interest (CHVI)	Identified within the Study Area?
Property designated under Part IV of the Ontario Heritage Act	Not Identified
A bridge on Ontario Heritage Bridge List	Not Identified
Property within a Heritage Conservation District designated under Part V of the OHA	Not Identified
Property with an Ontario Heritage Trust or municipal heritage conservation easement	Not Identified
Property with a provincial or federal plaque	Not Identified
A National Historic Site	Not Identified
Property containing a registered archaeological site	Not Applicable*
Property with archaeological potential	Not Applicable*
Property listed on a municipal heritage register or the provincial register	Not Identified
Property adjacent to an identified heritage property	Not Identified
<i>Property that has buildings or structures over 40 years old</i>	<i>Identified</i>
Property within a Canadian Heritage River watershed	Not Identified
Property associated with a renowned architect or builder	Not Identified

Indicators of Cultural Heritage Value or Interest (CHVI)	Identified within the Study Area?
<i>Property containing or adjacent to a burial site or cemetery</i>	<i>Identified</i>
Parkland	Not Identified
Land with distinctive landforms or geographic features	Not Identified
<i>Historical transportation corridors (such as navigational canals, rail lines or trails, traditional Métis portage routes etc)</i>	<i>Identified</i>
Site of Indigenous cultural significance	Not Identified
Other human-made alterations to natural landscapes (such as earthworks, plantings, etc.)	Not Identified

* An archaeological assessment has been undertaken under separate cover. Archaeological potential is considered beyond the scope of the current memo.

FINDINGS

Based on requests for information from the appropriate regulatory bodies, review of available historical and topographic mapping, and a review of current aerial photography, three indicators of potential CHVI were identified within the study area; properties that have buildings or structures over 40 years, properties containing or adjacent to a burial site or cemetery, and historical transportation corridors.

Properties with buildings or structures over 40 years of age include the Brigden Fairgrounds, which have occupied their current location since 1889 (Moore Agricultural Society 2020). In addition, topographic mapping from 1963, 1972, and 1973 was compared to current aerial photography examined during background research and indicates the potential for extant residences and structures over 40 years of age throughout the Study Area (Department of Mines and Technical Surveys 1963a, 1963b, 1972, 1973). A complete inventory of these properties is beyond the scope of the current memo but is anticipated to be included in a Cultural Heritage Assessment Report (CHAR), recommended as part of the environmental assessment phase of the Dawn to Corruna Project.

Six cemetery locations were identified within the Study Area. These include the Duncan Private Family Cemetery, Black Creek Cemetery, Zion United Church/Postil-Ossian Cemetery, Bradshaw Cemetery, Wilkesport Cemetery, and Bear Creek Cemetery (CanadaGenWeb's Cemetery Project 2021). Although they have been identified within the Study Area, none of these cemeteries are within close vicinity of the proposed routes.

The Old Sarnia and Oil Springs "Plank Road" in the Townships of Enniskillen and Moore, which was identified on the historical mapping, is a historical transportation route. The "Plank Road", constructed from timber planks, was built by the Sarnia and Florence Plank Road Company and completed in 1865 (Enniskillen Township n.d.). The "Plank Road", along with another road that traveled from Oil Springs to Wyoming, were built during an oil boom following James Miller Williams' discovery of oil in 1858 (Enniskillen Township n.d.). The oil fields at Oil Springs, located to the east of the Study Area, were the largest ever found in Ontario and became the first commercial oil well in North America (Enniskillen Township n.d.). The discovery of oil and subsequent boom had a dramatic impact on the development of the township, which had 27 refineries in operation during the boom and a population of 2,000 in Oil Springs, leading to its incorporation as a village in 1865 (Enniskillen Township n.d.). The Plank Road is also not located within close proximity to the proposed routes.

In addition to the indicators of CHVI outlined in the OEB Guidelines, there are 12 municipal plaques identified on the list and interactive map made available by St. Clair Township that are located within the Study Area. The titles and locations of these plaques are as follows;

1. Wm C Moore – 3393 Telfer Road; southwest corner of Telfer Road and Moore Line
2. Bear Creek Cemetery – Brigden Legion Cairn, Bear Creek Presbyterian Church, Calvary United Church. 3393 Telfer Road; southwest corner of Telfer Road and Moore Line
3. Birkhall Hamlet – Corner of Brigden Rd & Moore Line
4. Zion United Church – Zion Cemetery, 3493 County Road 26/ Mandaumin Road
5. Canada Southern Railway – Brigden Station – Boswell St. w, Brigden
6. Steadman Brothers Centennial Garden – 3050 Brigden Road, Brigden
7. Black Creek Cemetery – 2200 block of Stanley Line
8. Bradshaw Hamlet – Brigden Road, south of Stanley Line
9. Bradshaw United Church – Brigden Road and Stanley Line, Ontario (s.e. corner)
10. Wilkesport – Wilkesport Community Centre, 1622 Baby Line Wilkesport
11. Beaver Meadow Settlement – Bentpath Line and County Road 26 and Mandarin Road, (Southwest corner)
12. Ernest Fraser Smith – Smith Line, Port Lambton. Please do not park on the bridge.

RECOMMENDATIONS

Given the findings of the above review, there were three indicators of potential CHVI identified within the Study Area; properties with buildings or structures over 40 years of age, properties containing a burial site or cemetery, and historical transportation routes. Some of these previously identified and potential resources are within close proximity of the proposed routes. As such, a Cultural Heritage Assessment Report (CHAR) which will include a roadside field investigation, an impact assessment and recommendations to mitigate impacts, is recommended as part of the environmental assessment that will occur upon selection of a preferred route.

CLOSURE

This memo has been prepared for the sole benefit of Enbridge and may not be used by any third party without the express written consent of Stantec and Enbridge. We trust this report meets your current requirements. Please do not hesitate to contact us should you require further information or have additional questions about any fact of this report.

Regards,

STANTEC CONSULTING LTD.

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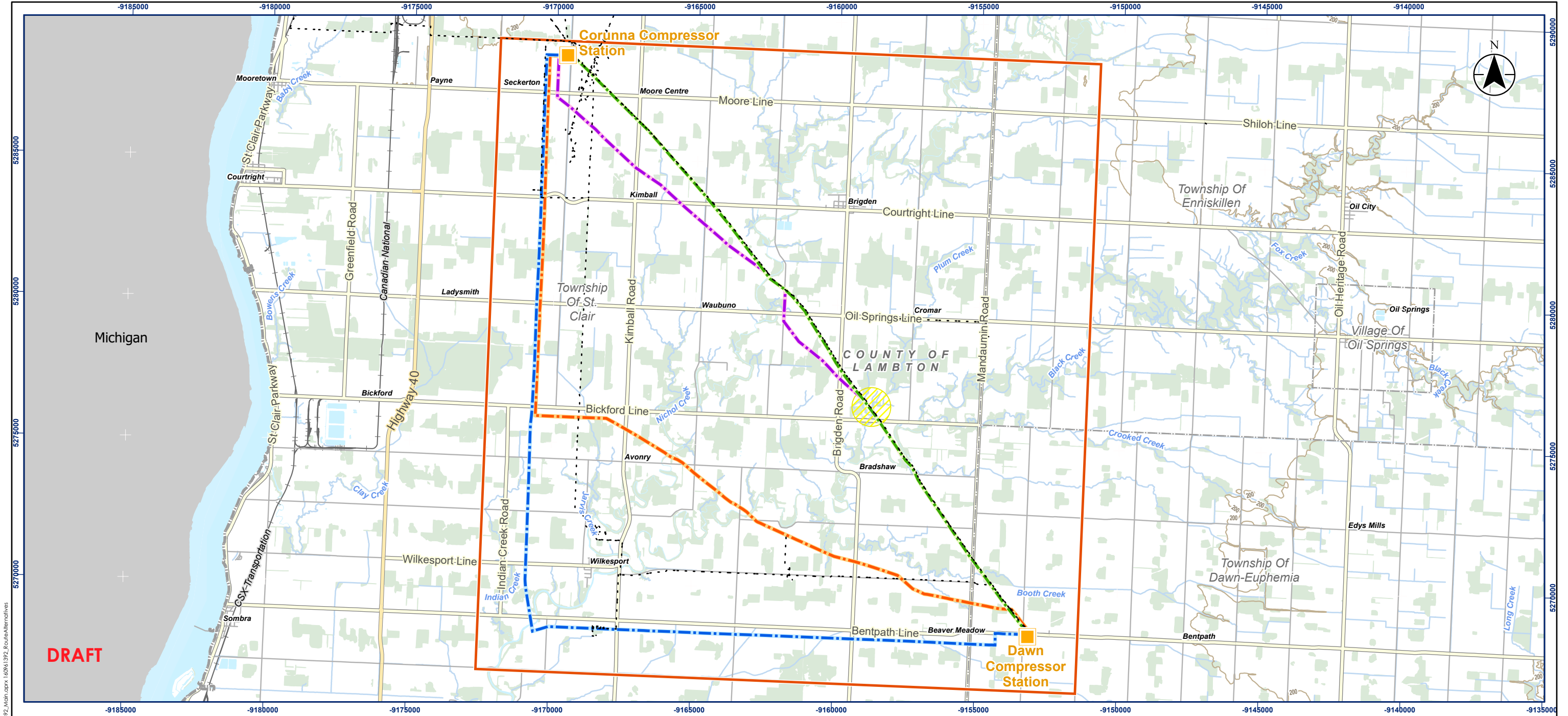
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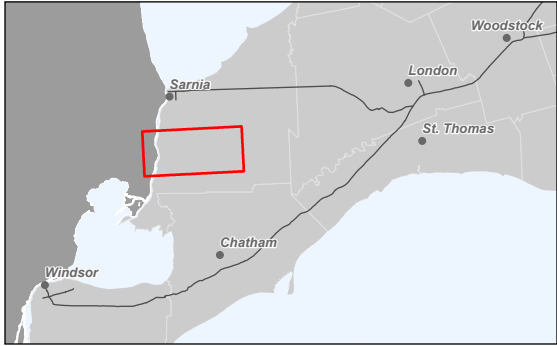
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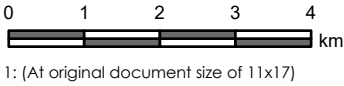


DRAFT



Notes
1. Coordinate System: NAD 1983 UTM Zone 17N
2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2020.

- | | | |
|--------------------------|---------------------------|-------------|
| Study Area | Existing Station | Minor Road |
| Alternative Route 1 | Existing Pipeline (EGI) | Railway |
| Alternative Route 2 | Municipal Boundary | Contour |
| Alternative Route 3 | Municipal Boundary, Lower | Watercourse |
| Alternative Route 4 | Highway | Waterbody |
| Routing To Be Determined | Major Road | Wooded Area |



Project Location
County of Lambton
160961392 REVA
Prepared by awhite on 2021-02-24
Technical Review by MKnight 2021-02-25

Client/Project
ENBRIDGE GAS INC.
DAWN TO CORUNNA PIPELINE PROJECT

Figure No.
1
Title
Route Alternatives (Conceptual)

DRAFT

2026 Kimball-Colinville Well Drilling Project

Appendix C Cultural Heritage Report: Existing Conditions and Preliminary Impact Assessment – Dawn-Corunna Project

July 16, 2025

**Appendix C Cultural Heritage Report: Existing
Conditions and Preliminary Impact
Assessment – Dawn-Corunna Project**





Cultural Heritage Report: Existing
Conditions and Preliminary
Impact Assessment—Dawn-
Corunna Project

FINAL REPORT

June 23, 2022

Prepared for:

Enbridge Gas Inc.
101 Honda Boulevard
Markham, Ontario L6C 0M6

Prepared by:

Stantec Consulting Ltd.
600-171 Queens Avenue
London, Ontario N6A 5J7

Project Number: 160961392

Executive Summary

Enbridge Gas has conducted a review of its gas storage and transmission system and has identified the need to replace assets to maintain the safe and reliable operation of Enbridge Gas' systems and continue to meet the firm demands of Enbridge Gas customers. The proposed Project will involve the construction of a new steel pipeline, up to 36-inch diameter, between the existing Dawn Operations Centre in the Township of Dawn-Euphemia and the existing Corunna Compressor Station in St. Clair. A qualitative and quantitative evaluation of the Alternative Routes for the Project resulted in the selection of a Preliminary Preferred Route, which will be approximately 20 kilometres in length.

Stantec Consulting Ltd. (Stantec) was retained by Enbridge to conduct an environmental study. As part of this study, Stantec identified the need to consider previously identified and potential built heritage resources and cultural heritage landscapes as defined by Section 4.3.4 of the *Ontario Energy Board (OEB) Environmental Guidelines for the Location, Construction and Operation of Hydrocarbon Pipelines and Facilities in Ontario* (the *OEB Environmental Guidelines*) (OEB 2016). A Cultural Heritage Report: Existing Conditions and Preliminary Impact Assessment was prepared to characterize the built heritage resources and cultural heritage landscapes within the Study Area, confirm the potential impacts, and outline mitigation strategies to reduce these impacts.

The study methodology is broadly based on guidelines provided by Ministry of Heritage, Sport, Tourism, and Culture Industries within InfoSheet #5 in *Heritage Resources in the Land Use Planning Process, Cultural Heritage and Archaeology Policies of the Ontario Provincial Policy Statement, 2005* (Government of Ontario 2006b). The *OEB Environmental Guidelines* make provisions for the consideration of heritage and stipulate that pipeline proponents are responsible for demonstrating the appropriate level of due diligence regarding heritage resources.

Where a potential heritage resource was identified within the Study Area, an evaluation of the cultural heritage value or interest of the property, or properties, was undertaken. Where cultural heritage value or interest was identified, the property was determined to contain a cultural heritage resource. Following evaluation, a total of 12 potential built heritage resources were identified within the Study Area. For each potential built heritage resource an assessment of potential impacts resulting from the Project was undertaken. If potential impacts are identified, measures to mitigate the impacts are prepared.

Following an assessment of impacts, no direct or indirect impacts were identified. Therefore, no mitigation measures or further cultural heritage evaluation are required. Continued avoidance of these 12 properties is recommended.

The executive summary highlights key points from the report only; for complete information and findings, the reader should examine the complete report.

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Abbreviations

BHR	Built Heritage Resource
CHL	Cultural Heritage Landscape
CHRECPIA	Cultural Heritage Report: Existing Conditions and Preliminary Impact Assessment
CHVI	Cultural Heritage Value or Interest
ER	Environmental Report
MHSTCI	Ministry of Heritage, Sport, Tourism, and Culture Industries
N/A	Not Applicable
O. Reg.	Ontario Regulation
OEB	Ontario Energy Board
OHA	<i>Ontario Heritage Act</i>
OHT	Ontario Heritage Trust
RoW	Right-of-Way

1.0 INTRODUCTION

1.1 PROJECT OVERVIEW

Enbridge Gas has conducted a review of its gas storage and transmission system and has identified the need to replace assets to maintain the safe and reliable operation of Enbridge Gas' systems and continue to meet the firm demands of Enbridge Gas customers. The proposed Project will involve the construction of a new steel pipeline, up to 36-inch diameter, between the existing Dawn Operations Centre in the Township of Dawn-Euphemia and the existing Corunna Compressor Station in St. Clair Township (Figure 1). A qualitative and quantitative evaluation of the Alternative Routes for the Project resulted in the selection of a Preliminary Preferred Route, which will be approximately 20 kilometres in length.

Stantec Consulting Ltd. (Stantec) was retained by Enbridge to conduct an environmental study. As part of this study, Stantec identified the need to consider previously identified and potential built heritage resources and cultural heritage landscapes as defined by Section 4.3.4 of the *Ontario Energy Board (OEB) Environmental Guidelines for the Location, Construction and Operation of Hydrocarbon Pipelines and Facilities in Ontario* (the *OEB Environmental Guidelines*) (OEB 2016). A Cultural Heritage Report: Existing Conditions and Preliminary Impact Assessment was prepared to characterize the built heritage resources and cultural heritage landscapes within the Study Area, confirm the potential impacts, and outline mitigation strategies to reduce these impacts.

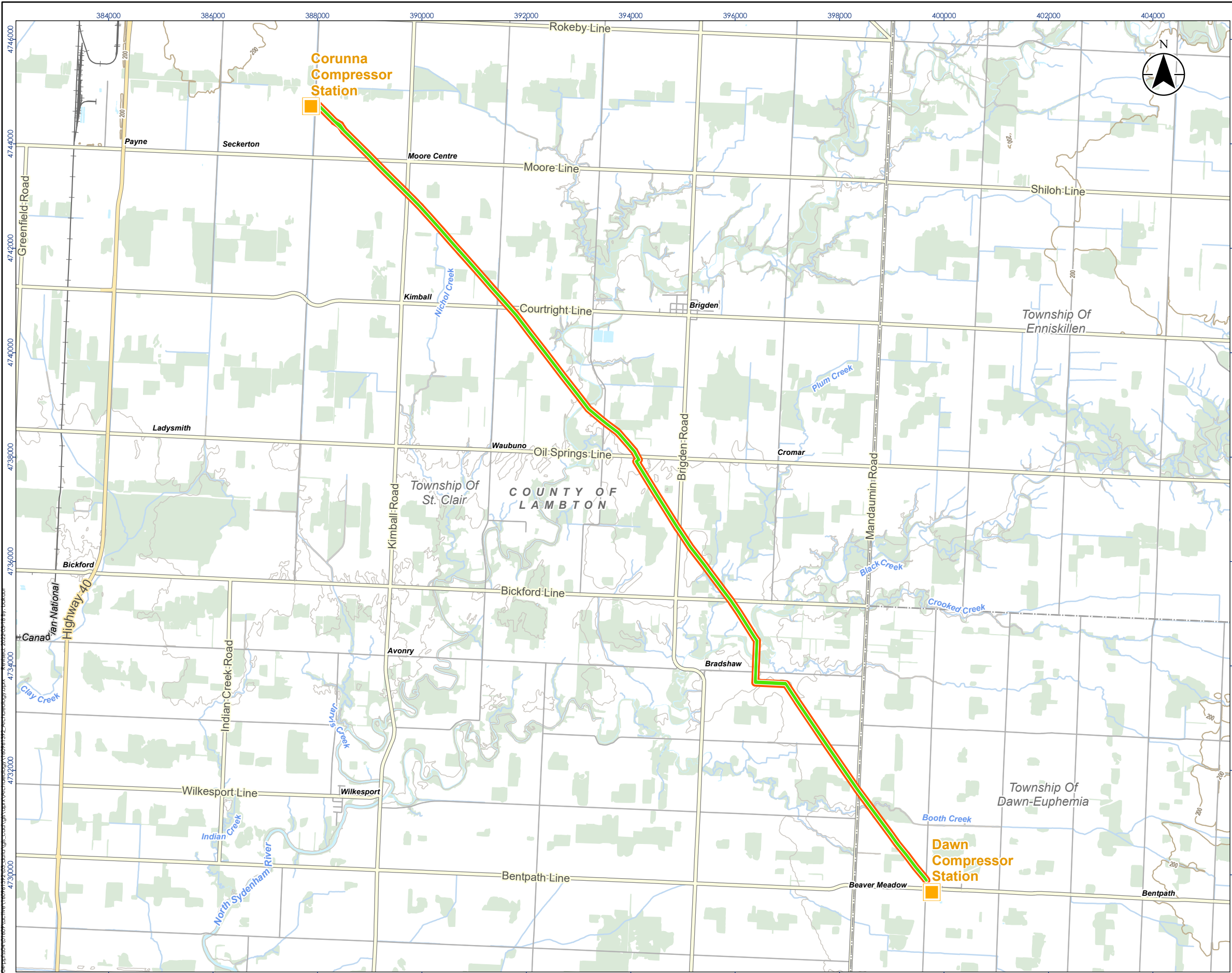
To meet these objectives, the report contains the following information:

- Summarizes the historical context of the area surrounding the Project
- Identifies properties protected under the *Ontario Heritage Act* (OHA) through information requests to the local heritage planners and regulatory bodies
- Identifies and describes previously identified or potential built heritage resources or cultural heritage landscapes situated on properties within the Study Area based on a windshield survey
- Evaluates the potential cultural heritage value or interest (CHVI) of previously identified or potential built heritage resource or cultural heritage landscape in the Study Area according to *Ontario Regulation (O. Reg.) 9/06* (Government of Ontario 2006a)
- Identifies areas of potential impacts according to the Ministry of Heritage, Sport, Tourism, and Culture Industries (MHSTCI) *InfoSheet #5 in Heritage Resources in the Land Use Planning Process, Cultural Heritage and Archaeology Policies of the Ontario Provincial Policy Statement, 2005* (InfoSheet #5) (Government of Ontario 2006b)
- Establishes measures to mitigate negative direct or indirect impacts to previously identified or potential built heritage resources or cultural heritage landscapes associated with construction and operation of the Project.

1.2 ACTIVITY SUMMARY

The pipeline construction process includes various activities as described below:

1. Stringing: The stringing crew lays pipe on wooden skids adjacent to the trench area.
2. Pipe Fabrication: Next, the pipe is bent as required and the welding crew welds the pipe into continuous lengths. The pipe welds are non-destructively tested and coated.
3. Trenching and Lowering: After the pipe is fabricated, a trenching machine or hydraulic hoe begins excavating a new trench. In agricultural areas, tiles that are cut during the trench excavation are flagged and repaired as quickly as practical. Crews also install pipes under obstacles such as roads or watercourses through a variety of different means.
4. Backfilling: The backfilling crew backfills the originally excavated soils over the pipe in the trench. In stony areas the pipe may be sand-padded to protect the coating. In shallow water table areas, the pipeline may be weighted to provide negative buoyancy. In agricultural areas, after the trench is backfilled, a tiling crew repairs disturbed or broken tiles. Landowners with tile drainage are given the opportunity to inspect tile repairs. A tile consultant is retained to oversee tile repairs and the design of a header tile system if required.
5. Hydrostatic Testing: The pipeline is then tested hydrostatically. Water is typically drawn by permit from nearby water sources such as watercourses or lakes, if available. Municipal water may at times also be used for hydrostatic testing. Upon completion of the hydrostatic testing, the pipeline is purged of air and packed with natural gas.
6. Clean-Up and Restoration: The clean-up crew is responsible for the restoration of the right-of-way (RoW) and other work areas. On agricultural land, this may require decompaction of the subsoil and stone picking to maintain productivity. In natural areas, the clean-up crew undertakes restoration including re-seeding of the RoW and restoring ditch banks, watercourse crossings, and wetland areas, and removing erosion and sediment controls. In developed areas the clean-up crew undertakes landscaping plans developed for site restoration.



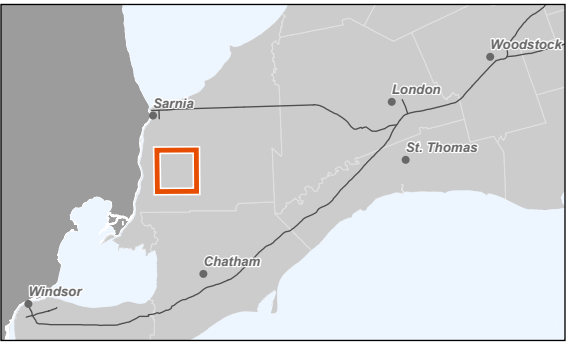
Legend

- Study Area
- Existing Station
- Preferred Route
- Municipal Boundary
- Municipal Boundary, Lower
- Highway
- Major Road
- Minor Road
- Minor Road
- Railway
- Contour
- Waterbody
- Watercourse
- Wooded Area

0 1 2 km
1:85 000 (At original document size of 11x17)

Notes

- Coordinate System: Name: NAD 1983 UTM Zone 17N
- Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2022.
- Known Archaeological Sites from MTCS 2021.



Project Location
Lambton County
160961392 REVA
Prepared by bakaur on 2022-03-18
Technical Review by AW 2022-01-14

Client/Project
CULTURAL HERITAGE REPORT: EXISTING CONDITIONS
AND PRELIMINARY IMPACT ASSESSMENT—DAWN-
CORUNNA PROJECT

Figure No.

1

Title

Location of the Study Area

2.0 METHODOLOGY

2.1 REGULATORY REQUIREMENTS

The Ontario Heritage Act (OHA) provides the primary statutory framework for the conservation of cultural heritage resources in Ontario. Conservation of cultural heritage resources is a matter of provincial interest, as reflected in the OHA and MHSTCI policies. As discussed briefly in Section 1.0, the OEB Environmental Guidelines make provisions for the consideration of previously identified or potential built heritage resources or cultural heritage landscapes, as defined by the OHA. The OEB Environmental Guidelines views the OHA as a point of reference for potential CHVI. According to the OEB Environmental Guidelines, due diligence should be exhibited by:

- *Recognizing cultural heritage resources that may be affected by pipeline development, identifying significant cultural heritage resources and understanding their cultural heritage value or interest*
- *Assessing the effects or impacts that could result from proposed pipeline development*
- *Protecting cultural heritage resources by appropriate conservation, avoidance and mitigation*
(OEB 2016: 31-32)

Stantec's study methodology is broadly based on guidelines provided by the MHSTCI within InfoSheet #5 (Government of Ontario 2006b). In response to requirements outlined in InfoSheet #5, and the *OEB Environmental Guidelines*, Stantec has identified previously identified and potential built heritage resources and cultural heritage landscapes; evaluated the impacts of the proposed undertaking on the previously identified or potential built heritage resource or cultural heritage landscape; and provided options to mitigate those impacts and to conserve protected properties, if applicable.

2.2 MUNICIPAL AND AGENCY INFORMATION REQUESTS

Requests for information from municipalities, agencies, and heritage based organizations within which the Project is proposed was undertaken to determine the presence of listed, designated, or otherwise identified heritage properties within the Study Area. Stantec issued information requests to the Township of St. Clair, Township of Dawn-Euphemia, the Ontario Heritage Trust (OHT), the MHSTCI, and Lambton Heritage Museum. The result of each request is provided in Section 3.3.

Recognition of protected properties varies greatly and is dependent on the level of CHVI identified or, in some cases, the level of investigation undertaken. For the purpose of this study, any property previously identified by municipal staff or provincial agencies as containing, or having the potential to contain, CHVI was determined to be a protected heritage property. Specific requirements pertaining to these properties are described within the *OEB Environmental Guidelines* which emphasize that early identification allows the proponent to consider the impact the Project may have on protected heritage properties.

2.3 THEMATIC REVIEW: DESKTOP AND DATA SOURCES

A desktop review of historical information (local histories, archival material, government documents, and primary sources) and topographic mapping was conducted to provide information on the historical context of the Study Area and its surroundings. This included identifying the general nature of the area and its characteristics (e.g., commercial, residential, rural, industrial, natural landscape, etc.), determining when buildings or structures in the area were constructed, and identifying developments or changes to the area over time. The intent of this review was to determine the thematic development of the municipalities within the Study Area and inform the fieldwork approach to determine the presence of previously identified or potential built heritage resources or cultural heritage landscapes. The desktop review determined whether portions of the Study Area and/or individual properties contributed to the identified thematic frameworks (see Section 3.2). The presence of potential resources that contribute to the identified thematic development of the Study Area and surroundings was confirmed by the field survey and subsequent evaluations of potential heritage properties.

2.4 FIELD PROGRAM

A vehicular windshield survey was conducted by Frank Smith, Cultural Heritage Specialist, and Krista Lane, Project Archaeologist, on December 17, 2021, from publicly accessible roadways, unless specified otherwise. During the survey, the preliminary preferred route of the Study Area was surveyed for previously identified or potential built heritage resources or cultural heritage landscapes. Where identified, these were photographed, the characteristics noted while in the field, and their locations recorded.

In general, buildings, structures, and landscapes of more than 40 years of age were screened during the survey for their potential to satisfy O. Reg. 9/06 criteria and the MHSTCI *Criteria for Evaluating Potential for Built Heritage Resources and Cultural Heritage Landscapes* (MHSTCI 2016). Only properties containing buildings, structures, or landscapes determined to have potential to satisfy O. Reg. 9/06 were inventoried. The use of the 40-year threshold is generally accepted by both the federal and provincial authorities as a preliminary screening measure for cultural heritage interest or value. This practice does not imply that all buildings and structures more than 40 years of age are inherently of significant heritage value, nor does it exclude exceptional examples constructed within the past 40 years of being of significant cultural heritage value.

2.5 EVALUATION OF CULTURAL HERITAGE VALUE OR INTEREST

The criteria for determining CHVI are defined by O. Reg. 9/06. Each previously identified or potential built heritage resource or cultural heritage landscape was considered both as an individual structure and as part of a cultural landscape. Where potential for CHVI was identified, a property was assigned a built heritage resource (BHR) number or cultural heritage landscape (CHL) number.

2.5.1 Ontario Regulation 9/06

In order to identify cultural heritage value or interest at least one of the following criteria must be met:

1. *The property has design value or physical value because it,*
 - i. *is a rare, unique, representative, or early example of a style, type, expression, material or construction method,*
 - ii. *displays a high degree of craftsmanship or artistic merit, or*
 - iii. *demonstrates a high degree of technical or scientific achievement.*
2. *The property has historical value or associative value because it,*
 - i. *has direct associations with a theme, event, belief, person, activity, organization, or institution that is significant to a community,*
 - ii. *yields, or has the potential to yield, information that contributes to an understanding of a community or culture, or*
 - iii. *demonstrates or reflects the work or ideas of an architect, artist, builder, designer or theorist who is significant to a community.*
3. *The property has contextual value because it,*
 - i. *is important in defining, maintaining, or supporting the character of an area,*
 - ii. *is physically, functionally, visually, or historically linked to its surroundings, or*
 - iii. *is a landmark.*

(Government of Ontario 2006a)

2.6 ASSESSMENT OF IMPACTS

Where a component of a previously identified or potential built heritage resource or cultural heritage landscape was situated within the Study Area, the impacts of the proposed undertaking were evaluated. The impacts, both direct and indirect, are evaluated according to InfoSheet #5.

Seven potential negative effects have been identified (Government of Ontario 2006b), including:

1. **Destruction** of any, or part of any, significant heritage attributes or features
2. **Alteration** that is not sympathetic, or is incompatible, with the historic fabric and appearance
3. **Shadows** created that alter the appearance of a heritage attribute or change the viability of a natural feature or plantings, such as a garden
4. **Isolation** of a heritage attribute from its surrounding environment, context, or a significant relationship
5. **Direct or indirect obstruction** of significant views or vistas within, from, or of built and natural features

6. **A change in land use** such as rezoning a battlefield from open space to residential use, allowing new development or site alteration to fill in the formerly open spaces
7. **Land disturbances** such as a change in grade that alters soils and drainage patterns that adversely affect an archaeological resource

In addition to direct impacts related to destruction, this report also evaluated the potential for indirect impacts resulting from the vibrations of construction and the transportation of Project components and personnel. Although the effect of traffic and construction vibrations on historic period structures is not fully understood, negative effects have been demonstrated on buildings with a setback of less than 40 metre from the curbside (Crispino and D'Apuzzo 2001; Ellis 1987; Rainer 1982; Wiss 1981). The proximity of Project components to heritage resources was considered in this assessment, particularly those within 50 metres, in order to encompass a wide enough buffer zone to employ a conservative approach to impact assessment.

Indirect impacts resulting from land disturbances apply to archaeological resources, which are beyond the scope of this assessment. An Archaeological Assessment has been prepared under separate cover which addresses the archaeological potential of the Study Area and includes recommendations for further work (Stantec 2021). No further consideration to archaeological resources is provided in this report.

2.7 MITIGATION STRATEGIES

Mitigation strategies were prepared based on guidelines provided by both the MHSTCI and the OEB. The MHSTCI suggest methods of minimizing or avoiding negative direct or indirect impacts including, but not limited to:

- *Alternative development approaches*
- *Isolating development and site alteration from significant built and natural features and vistas*
- *Design guidelines that harmonize mass, setback, setting, and materials*
- *Limiting height and density*
- *Allowing only compatible infill and additions*
- *Reversible alterations*
- *Buffer zones, site plan control, and other planning mechanisms*

(Government of Ontario 2006b)

In the case of pipeline projects, as discussed in more detail in Section 2.6, buffer zones and site plan controls are often the most appropriate method of mitigation when used in combination with alternative development approaches.

3.0 EXISTING CONDITIONS

3.1 BACKGROUND RESEARCH AND HISTORICAL RESEARCH

3.1.1 Introduction

The Study Area is located in southwestern Ontario within the Township of St. Clair (former Township of Moore and former Township of Sombra) and the Township of Dawn-Euphemia (former Township of Dawn) in the County of Lambton. The southern terminus of the Study Area is an existing Enbridge Gas facility at the intersection of Bentpath Line and Dawn Valley Road in the Township of Dawn-Euphemia. The Study Area then proceeds northwest for approximately 20 kilometres to an existing Enbridge Gas facility on Tecumseh Road in the Township of St. Clair (Figure 2).

The Study Area consists of the following historical lots and concessions in the former Township of Dawn (present-day Township of Dawn-Euphemia):

- Lot 26, Concession 2
- Lots 26-28, Concession 1

The Study Area consists of the following historical lots and concessions in the former Township of Sombra (present-day Township of St. Clair):

- Lots 29-30, Concession 13
- Lots 28-30, Concession 14
- Lots 26-28, Concession 15

The Study Area consists of the following historical lots and concessions in the former Township of Moore (present-day Township of St. Clair):

- Lots 5-7, Concession 1
- Lots 6-8, Concession 2
- Lots 8-10, Concession 3
- Lots 10-12, Concession 4
- Lots 12-14, Concession 5
- Lots 14-17, Concession 6
- Lots 17-19, Concession 7

The County of Lambton is located on the ancestral land of the Chippewa, Odawa, and Potawatomi Indigenous peoples, referred to collectively as the Anishinaabeg. The present-day County of Lambton is covered under Treaty 7, Treaty 21, and Treaty 29 (County of Lambton 2019). The following sections outline the development of the Study Area from the period of colonial settlement to the present-day.

3.1.2 Physiography

The Study Area is located in the St. Clair Clay Plain physiographic region of southern Ontario. The St. Clair Clay Plains is an extensive area of clay plains covering 5,880 square kilometres in Essex, Kent, and Lambton counties. The region is fairly flat with little relief, lying between approximately 175 to 215 metres above sea level. During the last glacial period, the area was covered by Glacial Lake Whittlesey and Lake Warren, which failed to leave deep stratified beds of sediment on the underlying clay (Chapman and Putnam 1984: 147). Most of the County of Lambton is till plains smoothed by shallow deposits of lacustrine clay that settled in the landscape depressions. The majority of the region has a history of poor drainage, which required the installation of dredged ditches and tile underdrains to have satisfactory conditions for crop growth and tillage. The most important crops in the region are corn, soybeans, hay, and winter wheat (Chapman and Putnam 1984: 149).

3.1.3 Survey and Settlement

3.1.3.1 Township of Dawn

The Township of Dawn was surveyed in 1821 by the King's Deputy Surveyor Shubal Park and was completed according to the double front survey system (Elford 1982: 41). The double front system was widely used in Upper Canada between 1815 and 1829. This survey system created lots of 200 acres with road allowances located in front of each concession and every fifth or sixth lot (Plate 1). This system allowed 100-acre grants of half lots since road allowances were located on both the front and rear halves of the lot (Weaver 1968: 14,16).

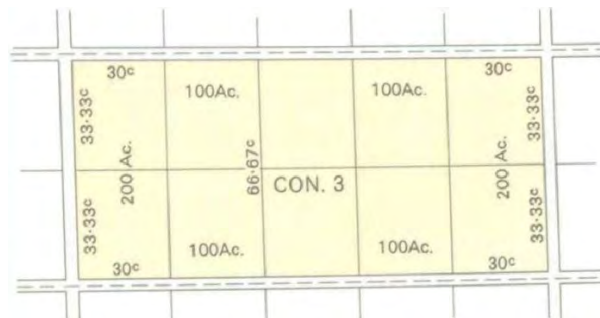


Plate 1: Double Front Survey System (Dean 1969)

The origins of the name of Dawn Township are unknown (Gardiner 1899: 337; Elford 1982: 40). Compared to other townships in Lambton County, Dawn was the slowest to develop. The heavy clay soil, imposing forests, and poor drainage significantly impeded development (Elford 1982: 41). Early settlers in Dawn Township included Job Hall and Thomas Mawlam. Hall was a squatter who settled on land along the Sydenham River. His arrival in the township prior to its opening for settlement led to disagreements with the local Indigenous population. Thomas Mawlam settled in 1827 just north of Hall on 400 heavily forested acres. Early settlers to the township traveled by canoe to Sandwich and Detroit to retrieve supplies, mail, and market their produce (Elford 1982: 40-41).

3.1.3.2 Township of Sombra

As part of Treaty 7, the future site of the Township of Sombra was originally intended to be a reserve for Indigenous allies of the British Crown during the American Revolution. The expected influx of Indigenous allies into the future site of Sombra Township did not occur and the township was instead opened for settlement (Plain 2017).

In 1820, deputy surveyor Samuel Smith began the survey of the township, which was originally known as Shawnese Township. The township was surveyed using the double front system. Smith noted that during most of the year the township was covered by either ice or water and that most of the land suitable for settlement was located along the St. Clair River (Dalgety 1984: 1; Elford 1982: 88-89). Sir Peregrine Maitland, the Lieutenant-Governor of Upper Canada changed the name of the Township to Sombra, naming it after the Spanish word for shade, as the township was heavily forested. Maitland's choice of a Spanish name is likely a result of his military service in Spain during the Peninsular War (Elford 1982: 88; Dalgety 1984: 1).

The location of the township along the St. Clair River facilitated early settlement along the shore and initial settlers included French Canadians, Loyalists, and Scottish (Elford 1982: 89). The Sydenham River was also an important waterway within the township and mills were built along the river. Both the St. Clair River and Sydenham River facilitated the clearing of the dense forests of the township. Settlers made potash and the rivers provided a convenient method of transporting lumber (Elford 1982: 89).

3.1.3.3 Township of Moore

The Township of Moore was surveyed by Roswell Mount in 1829 (Lauriston 1949: 38). The township was surveyed using the 2,400-acre sectional system (Association of Ontario Land Surveyors 1997). This survey system was commonly used between 1829 and 1851 (Weaver 1968: 16). While similar to the double front system, surveys carried out using this method included a road allowance of one chain on every alternate concession line and every third lot line (Plate 2).



Plate 2: 2,400 Acre Sectional System (Dean 1969)

Lots located along the St. Clair River were surveyed in the long and narrow French-Canadian style to afford water access to as many settlers as possible (Elford 1982: 54). During the survey, Mount noted the imposing hardwood forests of the township and recorded 24 existing settlers, just under half of whom were French-Canadian (Lauriston 1949: 38). The Township of Moore was named by Lieutenant Governor John Colborne in honour of Sir John Moore. Colborne had served as Moore's aide-de-camp during the Napoleonic Wars. Moore was killed in action by cannon shot in 1809 during the Battle of Corunna (Gardiner 1899: 339-340). The community of Corunna in the township was also named in honour of the Napoleonic Wars and Moore (Phillips 1999: 14).

The first settlers in the new Township of Moore were veterans of the Napoleonic Wars who often received riverfront lots for their service to the Crown. Other large land grants in the township included grants to the children of United Empire Loyalists. Settlers with less money and personal connections, settled in the back concessions (Elford 1982: 55).

3.1.4 19th Century Development

3.1.4.1 Township of Dawn

The development of Dawn Township was slow during much of the 19th century. In 1846, the population of the township was 940 and 16,339 acres of land was occupied. However, only 3,320 acres of land was under cultivation. During the first half of the 19th century the major economic drivers of the township were potash and wood staves, indicating that large quantities of forest remained in the township (Smith 1846: 43). The Township of Dawn and present-day Lambton County was originally part of Kent County. In 1849, the County of Lambton was created, and the new political division was found inconvenient for settlers in the township located south of the Sydenham River. In 1859, the southern 140 lots of Dawn Township became Camden Gore Township in Kent County (Elford 1982: 41).

No railway was constructed through the township during the 19th century, which further hindered the development of the township. By 1871, the population of the township was 1,116, which was the smallest population of any township in Lambton County. The township contained 16,057 acres of occupied land, which included 4,951 acres under crop, 1,244 acres in pasture, and 168 acres of gardens and orchards. The major crops grown in the township were what, oats, peas, corn, potatoes, and hay (Census of Canada 1871). As late as 1880, no concession road in the township was open for its entire length and the township was notorious for containing poor roads (Elford 1982: 41). Historical mapping from 1880 depicts development clustered in the southeast of the township and most of the road allowance in the northwest remained unopened (Figure 3).

The growth of Dawn Township accelerated at the end of the 19th century. This growth was supported by an increase in allocating land for pasture use, which was more suited for the drainage conditions of the township (Elford 1982: 42). The township also began efforts to improve drainage conditions and borrowed \$2,200 in 1879 for drainage improvements (Toronto Globe 1879). By 1891, the population had grown to 3,480 (Dominion Bureau of Statistics 1953). The township contained two hamlets, Dawn Centre and Florence, both in the more heavily settled eastern half of the township (Elford 1982: 41).

3.1.4.2 Township of Sombra

The population of Sombra Township was recorded as 800 in 1842. By 1846, a total of 1,589 acres of land was under cultivation in the township (Smith 1846: 174). By the 1840s, several hamlets had developed along the St. Clair and Sydenham Rivers. These hamlets included the French-Canadian settlement of Baby's Point on the St. Clair River, the hamlet of Wilkesport, located where Black Creek joined the Sydenham River, and Sombra Village, located along the St. Clair River (Elford 1982: 89-90).

In 1842, the Western District Council approved the construction of a roadway to connect Chatham, Wallaceburg, and the shoreline of the St. Clair River north through Sombra Township and Moore Township. However, the condition of this roadway was often treacherous due to wet soil and frost damage (Elford 1982: 88). The first post office was opened in Sombra Township in 1851 at Sombra Village. Within the next few years post offices were also opened at Baby's Point and Wilkesport (Elford 1982: 89). In 1859, the lower four concessions of Sombra Township became Chatham Gore Township as part of Kent County (Elford 1982: 88).

The population of Sombra Township was recorded as 3,397 in 1871 (Dominion Bureau of Statistics 1953). That year, the township contained 40,173 acres of occupied land. Only a total of 13,054 acres was considered improved, which included 9,191 acres under crop, 3,307 acres in pasture, and 556 acres of gardens or orchards. (Census of Canada 1871). The ability to further improve land was hampered by poor drainage. To alleviate this, between 1874 and 1880 the township constructed several drains to improve conditions (Supreme Court of Canada 1892). By 1881, the amount of improved land in the township had increased to 23,603 acres, an increase of 44% in ten years (Census of Canada 1881). Historical mapping from 1880 depicted most development in the township west of the Sydenham River while the eastern road allowance of the township remained unopened (Figure 4).

Conditions in the township were further bolstered in 1886 when the Huron and Erie Railway line was completed between Rondeau Bay and Sarnia, with stops in the Township of Sombra in the communities of Sombra and Port Lambton. The railway had a large positive impact on the economy of the township (Elford 1982: 160). As a result of drainage improvements and the arrival of the railway the population of Sombra Township increased to 5,092 in 1891 (Dominion Bureau of Statistics 1953).

3.1.4.3 Township of Moore

Pioneer settlers in the Township of Moore benefitted greatly from the township's proximity to the United States. The American communities on the west bank of the St. Clair River were already established and residents of the Township of Moore had access to postal services, sawmills, shops, and churches on the American side. The first hamlet in the township was Froomfield, established in 1836 (Elford 1982: 55). In 1836, the Township of Moore was the most populous township in the future Lambton County and had a recorded population of 573 (Elford 1967: 84).

During the 1840s and 1850s the settlers of the Township of Moore proceeded to clear the land. Initially, settlers burned their timber to make potash, but the advent of steamship service on the St. Clair River generated a large demand for firewood (Elford 1982: 56). The back concessions of the township suffered

from poor drainage and municipal drainage schemes left the township \$20,000 in debt by 1880. Once sufficient drainage was established, the township became very agriculturally productive (Belden 1880: 16).

In 1871 the population of the Township of Moore was recorded at 3,999. Further growth was spurred in 1872 when the Canada Southern Railway was opened in the township (Elford 1982: 56). Historical mapping from 1880 shows the railway running through the township towards Courtright through concessions four and five (Figure 5). By 1881, the population of the township had increased to 5,146. That year, the township contained 65,756 acres of occupied land, which included 30,746 acres under crops, 13,433 acres of pasture, and 850 acres of gardens or orchards (Census of Canada 1881). After 1891, the population of township began to decrease when western Canada was opened for settlement (Elford 1967: 59). Major settlements in the Township of Moore near the end of the 19th century included Froomfield, Corunna, Mooretown, Courtright, and Brigden (Belden 1880: 16).

3.1.5 20th Century Development

3.1.5.1 Township of Dawn

The Township of Dawn remained predominantly rural through the first half of the 20th century. The population of the township declined from 3,659 in 1901 to 2,930 in 1911 (Dominion Bureau of Statistics 1953). The Census of 1911 listed 59,516 acres of land occupied in the township, 41,475 acres of which were improved (Census of Canada 1911). The contraction of population in the was part of a broader trend of urbanization in the late 19th and early 20th centuries. The emergence of industrialization and urbanization increased the number of wage workers required in cities and towns. At the same time, improvements in farm equipment and the mechanization of farming meant that less labour was required on a farm (Sampson 2012). This encouraged out-migration from rural areas to the burgeoning cities of Ontario (Drummond 1987: 30). Topographic mapping from 1913 shows the township remained overwhelmingly rural and many of the lots in the township remained heavily forested (Figure 6).

Road conditions in the township remained difficult until the late 1920s. In 1921, road conditions were so poor in a section of the township that it took a team of people working in relay to haul a hearse several kilometres. In 1927, the township began a road improvement program and commenced paving roads with gravel (Elford 1982: 41).

The Township of Dawn remained rural through the second half of the 20th century. The population continued to contract into the postwar period and was recorded as 2,045 in 1951 and 1,897 in 1961 (Dominion Bureau of Statistics 1953; Dominion Bureau of Statistics 1962). Aerial photography from 1954 demonstrates the rural character of the area and shows that much of the township lands had been brought into cultivation (Figure 7). Aside from agriculture, a major employer was Union Gas, which built a compressor station in the township. Union Gas also used depleted wells in the township to store gas piped to Dawn Township from Texas, Alberta, and other local wells (Elford 1982: 43) This compressor station is located at the southeast end of the Study Area.

Beginning in the mid-1990s, the provincial government embarked on a program of municipal restructuring to reduce the total number of municipalities in Ontario. Between 1996 and 2001, the number of municipalities in Ontario was reduced from 815 to 471 (Rusk 2000). In 1998, the Township of Euphemia and the Township of Dawn amalgamated to form the new lower-tier municipality of the Township of Dawn-Euphemia (Municipal Affairs and Housing 2021). The population of Dawn-Euphemia was recorded as 1,967 in 2016, a decrease of 4% since 2011 (Statistics Canada 2021a).

3.1.5.2 Township of Sombra

The population of the Township of Sombra entered into a period of decline during the first decades of the 20th century. Between 1901 and 1911 the population of the township decreased from 5,231 to 3,969 (Dominion Bureau of Statistics 1953). However, the agricultural productivity of the township continued to increase. In 1911, a total of 64,793 acres of land was occupied, this included 46,414 acres of improved land (Census of Canada 1911). Road conditions in the township were improved during the early 20th century and by 1911 all concession roads in the township had been cleared (Elford 1982: 89). Topographic mapping from 1913 shows the township remained mostly rural and many of the lots east of the Sydenham River remained heavily forested (Figure 6).

Agriculture continued to play an important role in Sombra Township into the late 20th century. Modern farming methods and drainage systems had allowed over 70% of the township to be devoted to cropland by the mid-20th century. The main crops grown during the mid to late 20th century included soybeans, winter wheat, corn, barley, small fruits, and vegetables. Other industries in the township during this time included chemical and fertilizer manufacturing and tourism (Elford 1982: 89). As a result of these increased economic opportunities, the population of the township began to grow in the postwar period, increasing from 3,144 in 1951 to 3,564 in 1961 (Dominion Bureau of Statistics 1953; Dominion Bureau of Statistics 1962). Aerial photography from 1954 demonstrates the rural character of the area and shows that much of the township lands had been brought into cultivation (Figure 7)

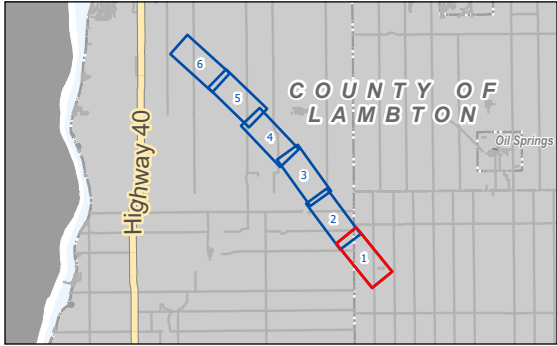
In 2000, the Township of Sombra was amalgamated with the Township of Moore to form the lower-tier municipality of St. Clair Township (Ministry of Affairs and Housing 2020). In 2016, the population of the Township of St. Clair was recorded as 14,086, a decrease of three percent since 2011 (Statistics Canada 2021b).

3.1.5.3 Township of Moore

The population of Moore Township continued to decline in the first decades of the 20th century. Between 1901 and 1911 the population decreased from 4,795 to 3,771 (Dominion Bureau of Statistics 1953). Although the population of the township had entered into decline, the agricultural productivity of the township continued to increase. In 1911, a total of 70,386 acres of land was occupied, this included 48,719 acres of improved land (Census of Canada 1911). Topographic mapping from 1913 shows the township remained predominantly rural and most major settlements in the township were near the St. Clair River (Figure 6).

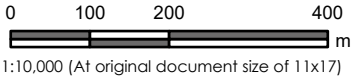
The development of the Township of Moore in the mid-20th century is closely linked with the petrochemical industry, which developed in an area along the St. Clair River called “Chemical Valley.” Although some oil refining took place on the Canadian side of the St. Clair River during the late 19th and early 20th century, it was not until the Second World War and the post-war era that the petrochemical industry in Moore Township became a major economic driver of development. The opening of the St. Lawrence Seaway in 1959, which included the St. Clair River, proved another boon to the petrochemical industry, providing sea, rail, and road access to markets across North America and the wider world (Elford 1982: 178). Reflecting this growth, between 1951 and 1961 the population of the Township of Moore increased from 4,445 to 5,722 (Dominion Bureau of Statistics 1953; Dominion Bureau of Statistics 1962). This growth was mostly concentrated near the St. Clair River and aerial photography from 1954 shows most of the township remained rural (Figure 7).

In 2000, the Township of Moore was amalgamated with the Township of Sombra to form the lower-tier municipality of St. Clair Township (Ministry of Affairs and Housing 2020). In 2016, the population of the Township of St. Clair was recorded as 14,086, a decrease of three percent since 2011 (Statistics Canada 2021b).



Notes
1. Coordinate System: NAD 1983 UTM Zone 17N
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3. Existing and Proposed Routing provided by Enbridge Gas Inc., June 25, 2021. Not for construction.

- Study Area
- Preferred Route
- Existing Station
- Major Road
- Constructed Drain
- Watercourse
- Waterbody
- Municipal Boundary
- Municipal Boundary, Lower



Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



Project Location
County of Lambton

160961392 REV A
Prepared by bakaur on 2022-01-14
Technical Review by AW on 2022-01-14

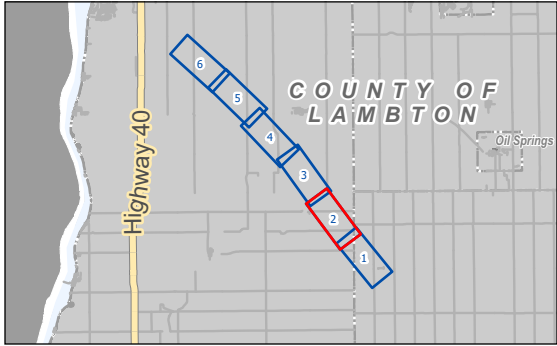
Client/Project
CULTURAL HERITAGE REPORT: EXISTING CONDITIONS
AND PRELIMINARY IMPACT ASSESSMENT—DAWN-
CORUNNA PROJECT

Figure No.

2 - 1

Title

Study Area

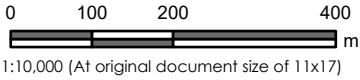


- Study Area
- Preferred Route
- Major Road
- Constructed Drain
- Watercourse
- Waterbody
- Municipal Boundary
- Municipal Boundary, Lower

Notes

1. Coordinate System: NAD 1983 UTM Zone 17N
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Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



Project Location
County of Lambton

160961392 REV A
Prepared by bakaur on 2022-01-14
Technical Review by AW on 2022-01-14

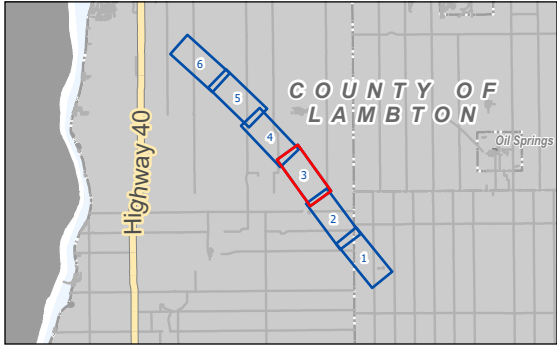
Client/Project
CULTURAL HERITAGE REPORT: EXISTING CONDITIONS
AND PRELIMINARY IMPACT ASSESSMENT—DAWN-
CORUNNA PROJECT

Figure No.

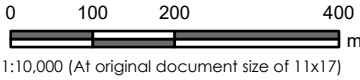
2 - 2

Title

Study Area



- Study Area
- Preferred Route
- Major Road
- Constructed Drain
- Watercourse
- Waterbody
- Municipal Boundary
- Municipal Boundary, Lower



Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



Project Location
County of Lambton
160961392 REV A
Prepared by bakaur on 2022-01-14
Technical Review by AW on 2022-01-14

Client/Project
CULTURAL HERITAGE REPORT: EXISTING CONDITIONS
AND PRELIMINARY IMPACT ASSESSMENT—DAWN-
CORUNNA PROJECT

Figure No.

2 - 3

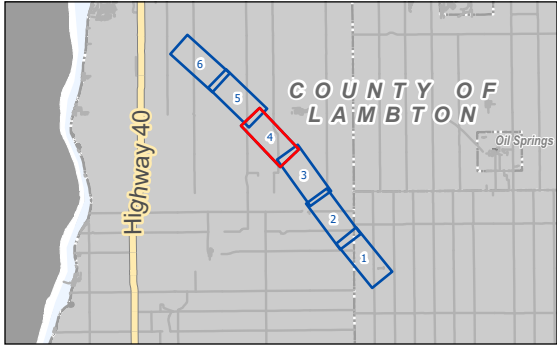
Title

Study Area

Notes

1. Coordinate System: NAD 1983 UTM Zone 17N
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3. Existing and Proposed Routing provided by Enbridge Gas Inc., June 25, 2021. Not for construction.

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- Study Area
- Preferred Route
- Major Road
- Constructed Drain
- Watercourse
- Waterbody
- Municipal Boundary
- Municipal Boundary, Lower

0 100 200 400
m
1:10,000 (At original document size of 11x17)

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



Project Location
County of Lambton
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Technical Review by AW on 2022-01-14

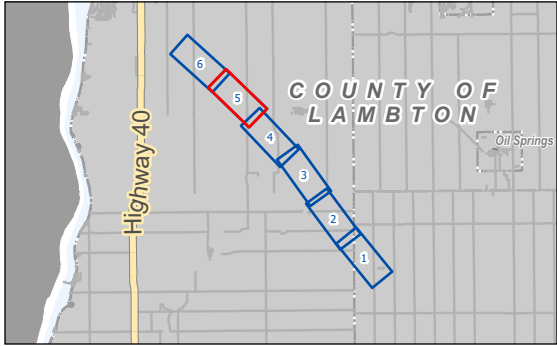
Client/Project
CULTURAL HERITAGE REPORT: EXISTING CONDITIONS
AND PRELIMINARY IMPACT ASSESSMENT—DAWN-
CORUNNA PROJECT

Figure No.

2 - 4

Title

Study Area



Notes

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- Study Area
- Preferred Route
- Major Road
- Constructed Drain
- Watercourse
- Municipal Boundary
- Municipal Boundary, Lower

0 100 200 400
m
1:10,000 (At original document size of 11x17)

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



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County of Lambton

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Technical Review by AW on 2022-01-14

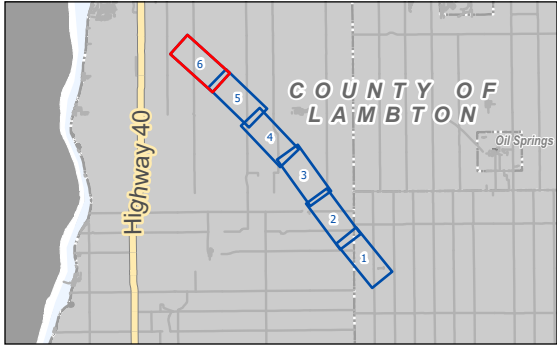
Client/Project
CULTURAL HERITAGE REPORT: EXISTING CONDITIONS
AND PRELIMINARY IMPACT ASSESSMENT—DAWN-
CORUNNA PROJECT

Figure No.

2 - 5

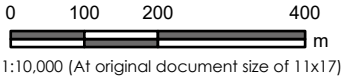
Title

Study Area



Notes
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- Study Area
- Preferred Route
- Existing Station
- Major Road
- Constructed Drain
- Watercourse
- Municipal Boundary
- Municipal Boundary, Lower



Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



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County of Lambton
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Prepared by bakaur on 2022-01-14
Technical Review by AW on 2022-01-14

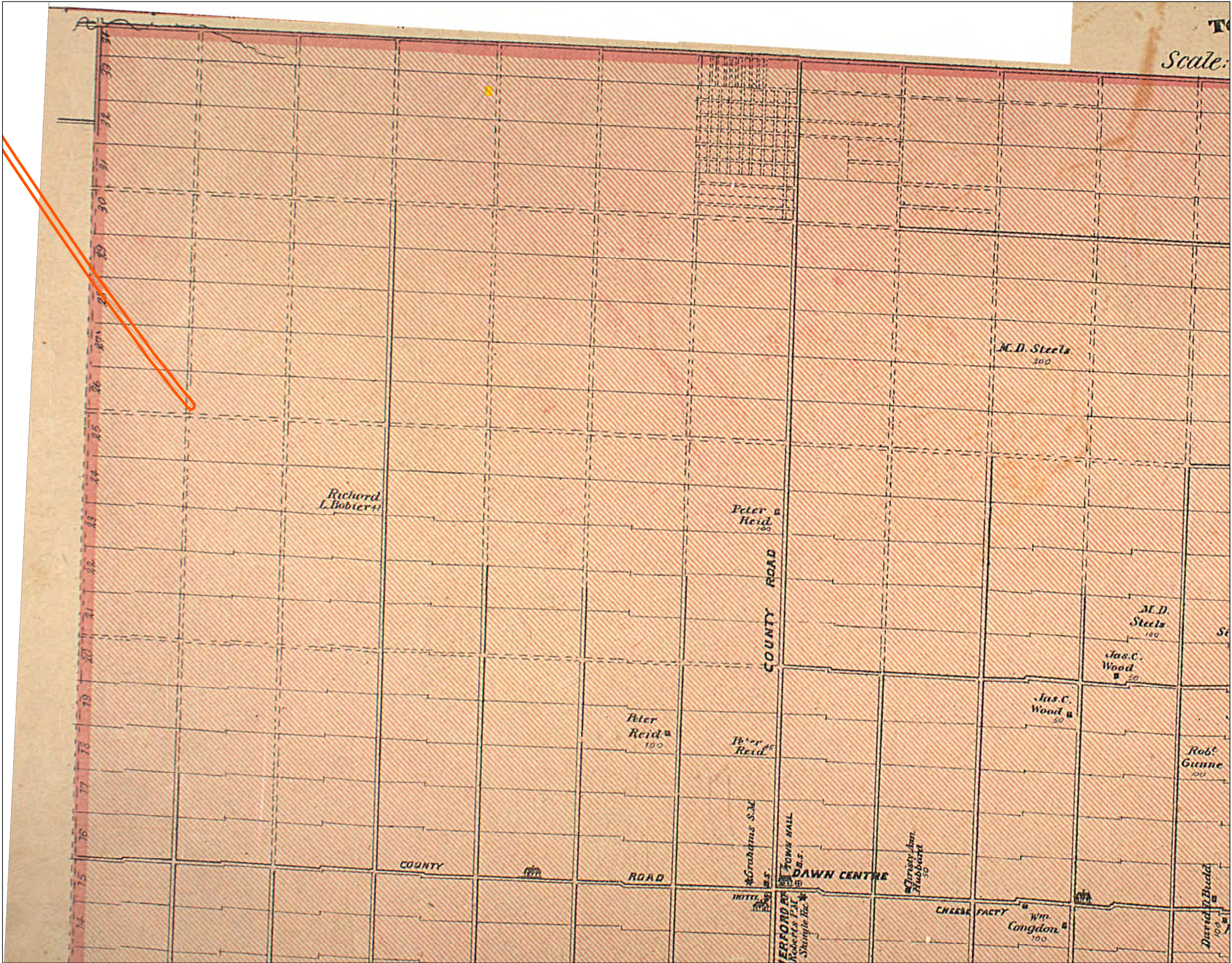
Client/Project
CULTURAL HERITAGE REPORT: EXISTING CONDITIONS
AND PRELIMINARY IMPACT ASSESSMENT—DAWN-
CORUNNA PROJECT

Figure No.

2 - 6

Title

Study Area



Legend
Study Area (approx. location)

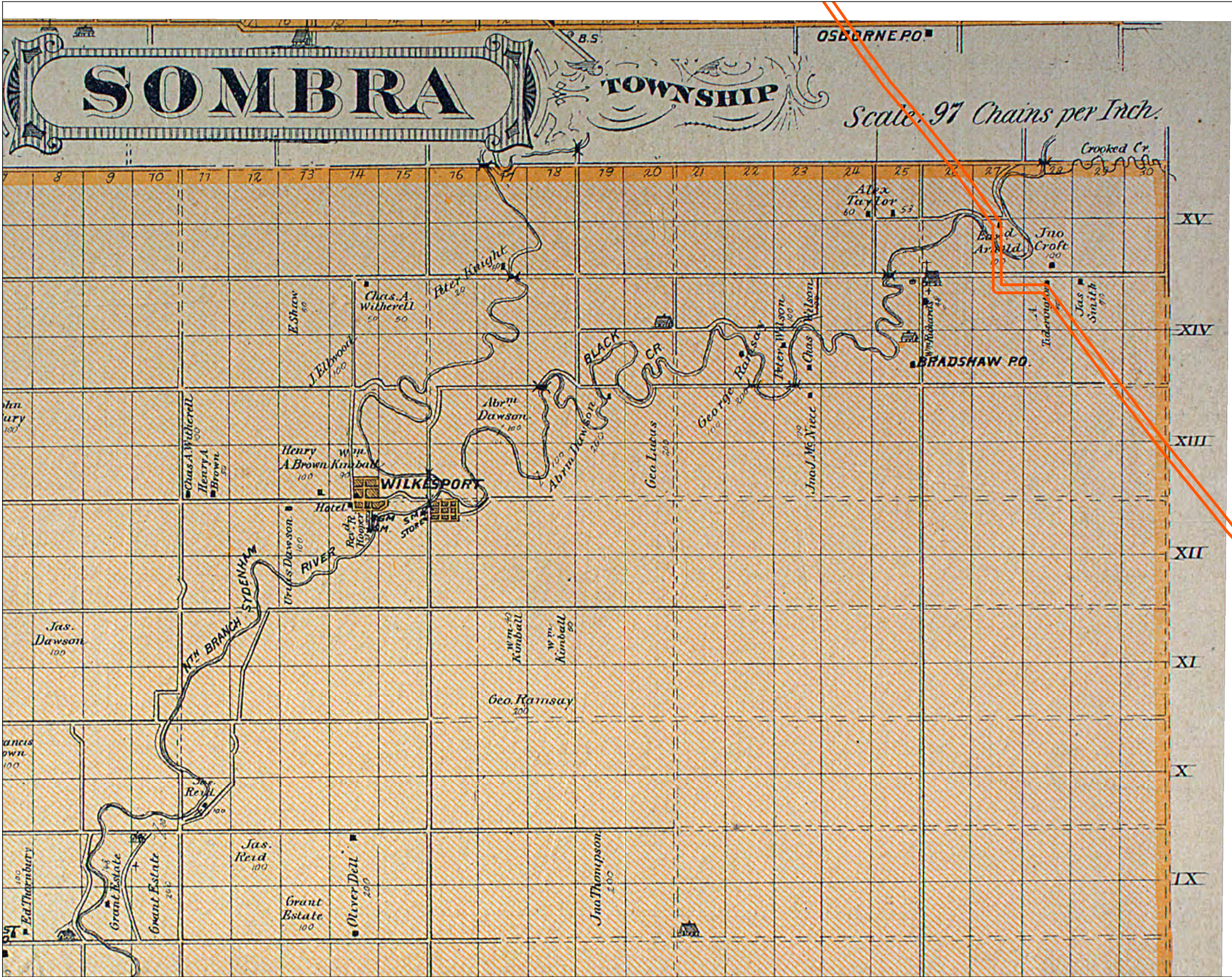
Notes
1. Map is not to scale.
2. Belden & Co. 1880a. Illustrated Historical Atlas of Lambton Count, Ont.
Toronto: H. Belden & Co.

Project Location
Lambton County
160961392 REVA
Prepared by bakaur on 2022-03-18
Technical Review by AW on 2021-09-08

Client/Project
CULTURAL HERITAGE REPORT: EXISTING CONDITIONS
AND PRELIMINARY IMPACT ASSESSMENT—DAWN-
CORUNNA PROJECT

Figure No.
3

Title
Dawn Township, 1880



Legend
Study Area (approx. location)

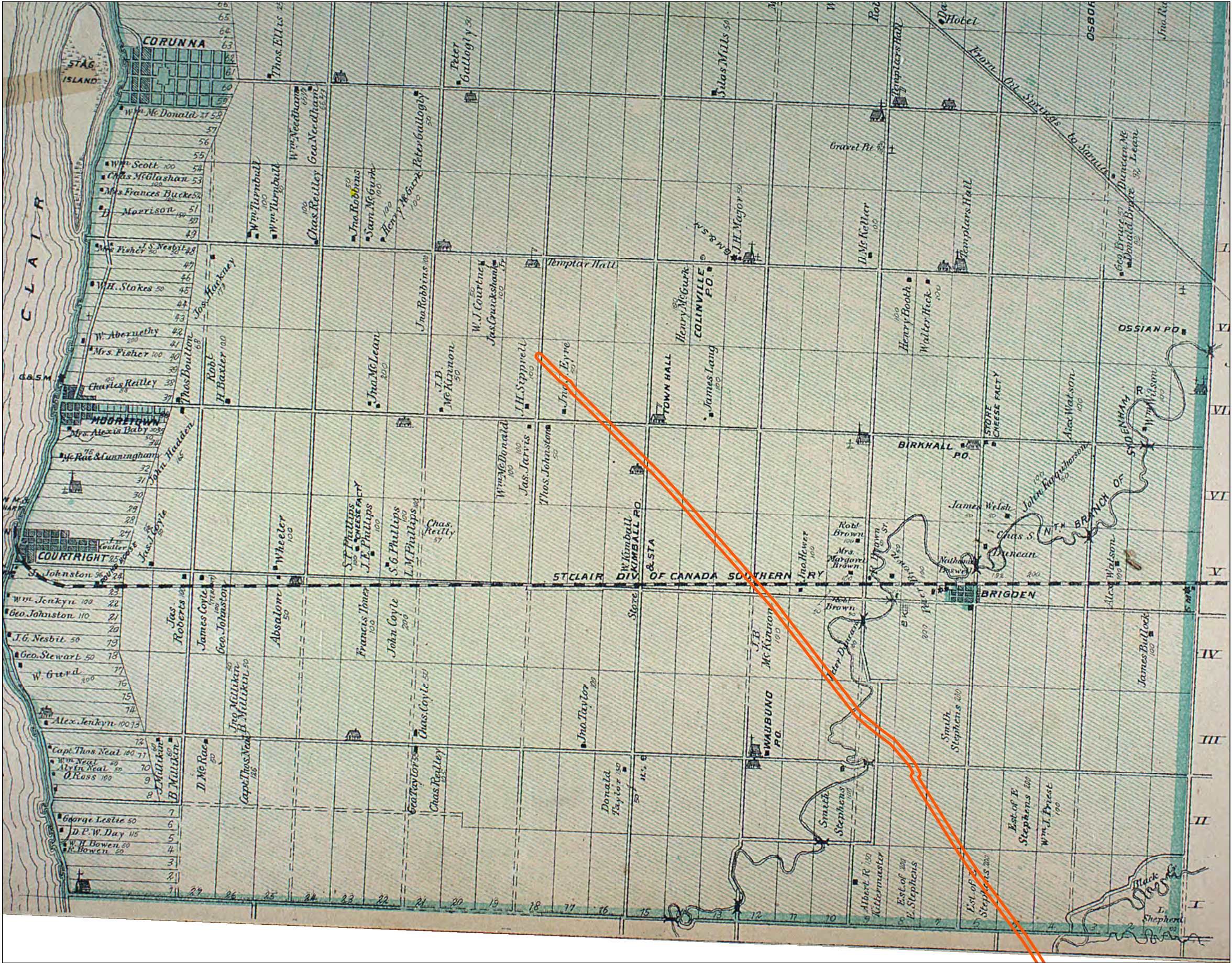
Notes
1. Map is not to scale.
2. Belden & Co. 1880a. Illustrated Historical Atlas of Lambton Count, Ont. Toronto: H. Belden & Co.

Project Location
Lambton County
160961392 REVA
Prepared by bakaur on 2022-03-18
Technical Review by AW on 2022-01-14

Client/Project
CULTURAL HERITAGE REPORT: EXISTING CONDITIONS
AND PRELIMINARY IMPACT ASSESSMENT—DAWN-
CORUNNA PROJECT

Figure No.
4

Title
Sombra Township, 1880



Legend
Study Area (approx. location)

Notes
1. Map is not to scale.
2. Historic map source: Belden, H. 1880. Belden's Historical Atlas of the County of Lambton. H. Belden and Co.

Project Location 160961392 REVA
Lambton Prepared by bakaur on 2022-03-18
County Technical Review by AW on 2022-01-14

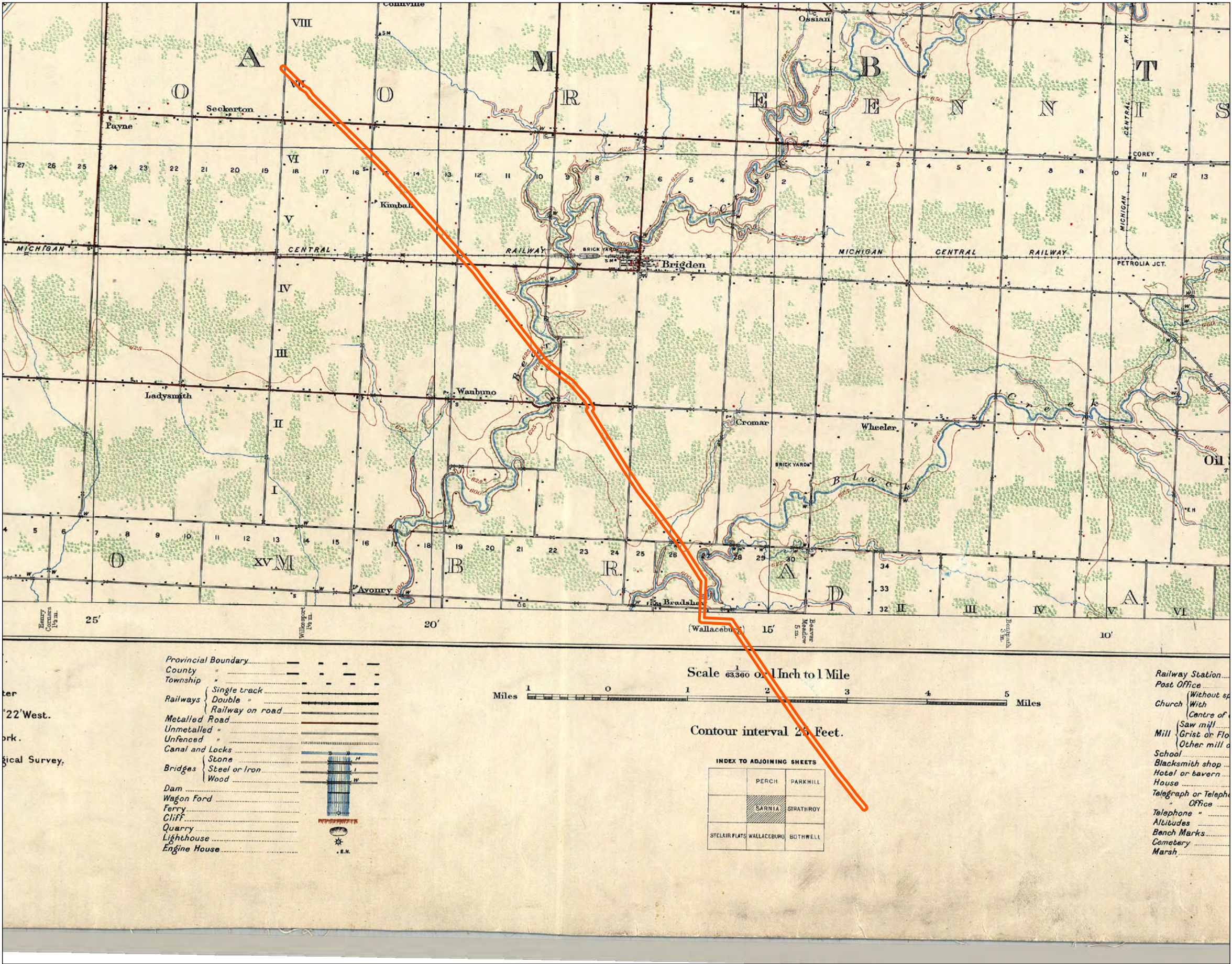
Client/Project
CULTURAL HERITAGE REPORT: EXISTING CONDITIONS
AND PRELIMINARY IMPACT ASSESSMENT—DAWN-
CORUNNA PROJECT

Figure No.

5

Title

Moore Township, 1880



Legend
Study Area (approx. location)

Notes
1. Map is not to scale.
2. Topographic map source: Sarnia Map; Department of Militia and Defence. 1912.
Sarnia, Ontario.

Project Location
Lambton
County


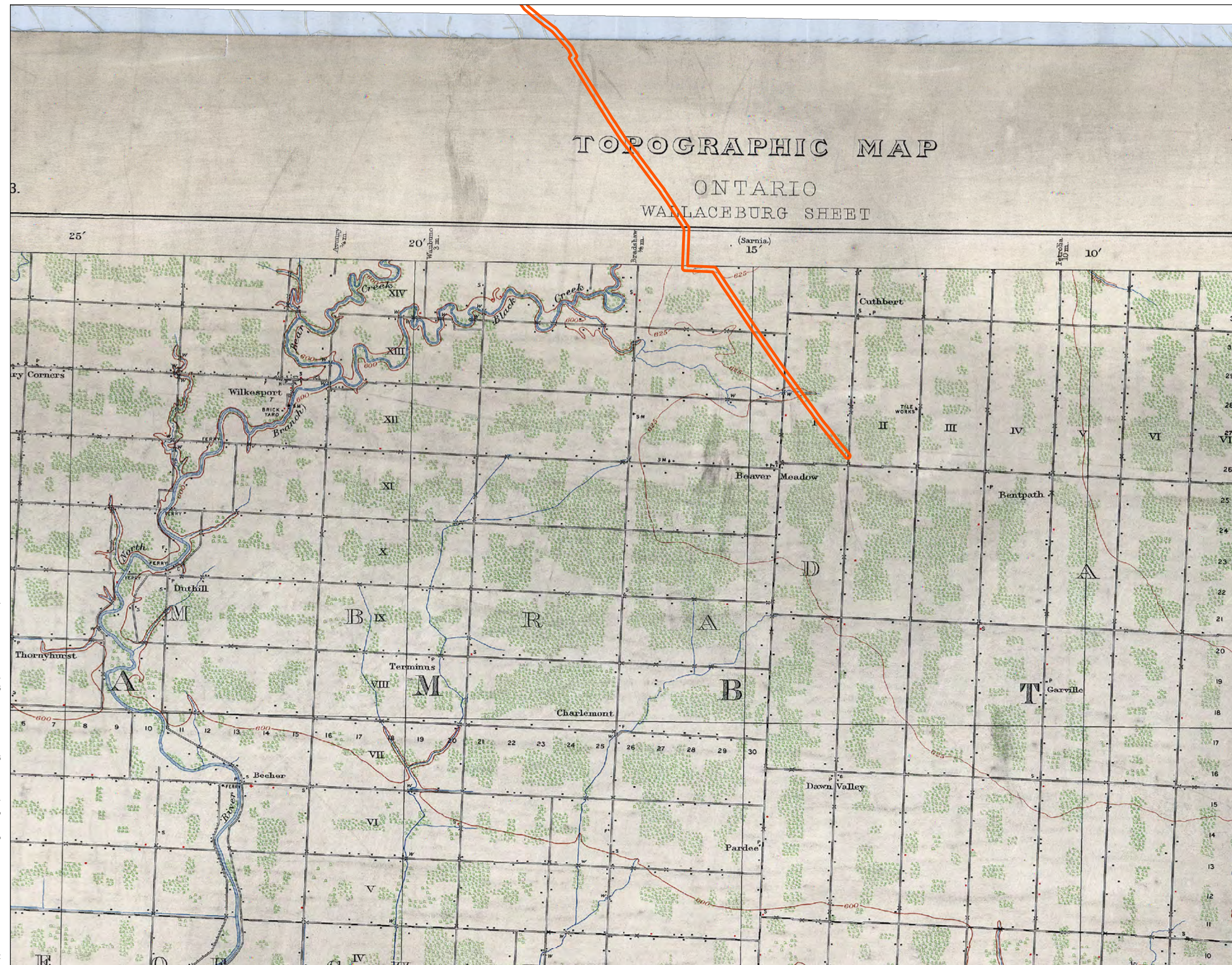
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Technical Review by AW on 2022-01-14

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CULTURAL HERITAGE REPORT: EXISTING CONDITIONS
AND PRELIMINARY IMPACT ASSESSMENT—DAWN-
CORUNNA PROJECT

Figure No.
6-1
Title
Topographic Mapping, 1912



Legend

 Study Area (approx. location)

Notes

1. Map is not to scale.
2. Topographic map source: Wallaceburg Map: Department of Militia and Defence. 1913. Wallaceburg, Ontario.

Project Location
Lambton
County

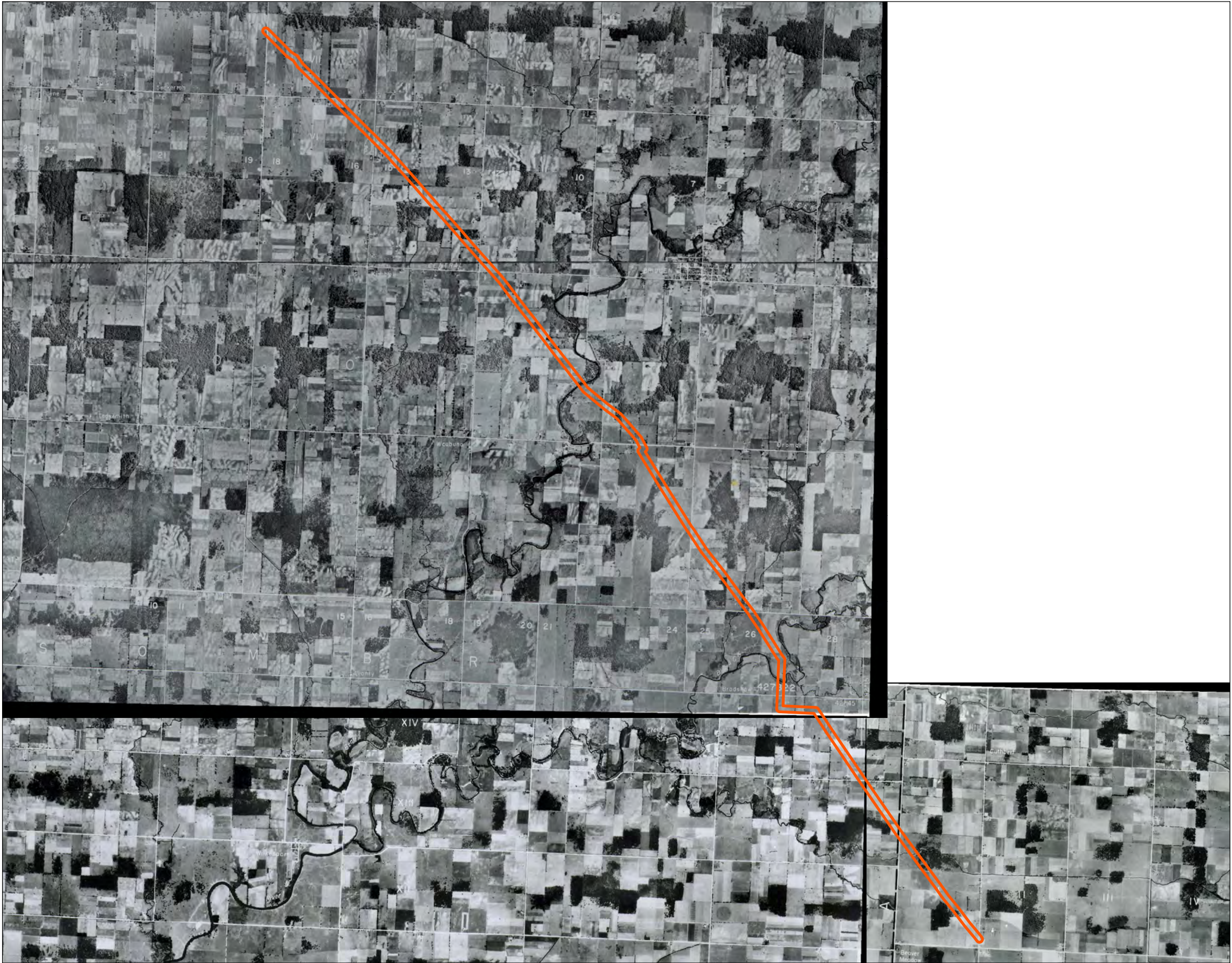
160961392 REVA
Prepared by bakaur on 2022-03-18
Technical Review by AW on 2022-01-14


Client/Project
CULTURAL HERITAGE REPORT: EXISTING CONDITIONS
AND PRELIMINARY IMPACT ASSESSMENT—DAWN-
CORUNNA PROJECT

Figure No.

6-2

Title
Topographic Mapping, 1913



Legend
 Study Area (approx. location)

Notes
1. Map is not to scale.
2. Aerial Photography source: Hunter Survey Corporation. 1954. Air Photos of Southern Ontario: University of Toronto Map and Data Library.

Project Location
Lambton
County
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Technical Review by AW on 2022-01-14

Client/Project
CULTURAL HERITAGE REPORT: EXISTING CONDITIONS
AND PRELIMINARY IMPACT ASSESSMENT—DAWN-
CORUNNA PROJECT

Figure No.
7

Title
Aerial Photography, 1954

3.2 THEMATIC DEVELOPMENT

The thematic development of the Study Area during the 19th and 20th centuries has been influenced by several factors which have also played a broader role in the development of southwestern Ontario. These themes include geographical as well as historical factors. The following key themes were identified for the Study Area:

- Pioneer Period (c. 1820-1869)
- Infrastructure Development (1870-1909)
- Mechanization of Agriculture and Urban Migration (1910-1938)
- Industrial Development (1939-Present)

These themes and their implications on the development of the Study Area are discussed in the following sections.

3.2.1 Pioneer Period (c. 1820-1869)

The pioneer period of settlement in the Study Area began in the 1820s when the townships of the Study Area were opened to largescale settlement. Prior to this, squatters and French-Canadians were present within the Study Area, mostly near the St. Clair River and Sydenham River. Early settlers to the Study Area encountered dense forests and large swaths of swamp. As a result, early settlers preferred locations along the navigable St. Clair River and Sydenham River. The rivers facilitated early transportation and commerce to the nearest largescale settlements at Sandwich and Detroit.

Early settlers began the task of clearing the land and large amounts of lumber were converted to the marketable and easily transportable potash. Generally, once an area was cleared of forest, it could be brought into cultivation. However, the agricultural and economic opportunities of the interior of the townships and county were limited by poor drainage. The poor drainage would drown crops and hamper attempts to develop a road network.

The Township of Sombra and Township of Moore contained lots that fronted the St. Clair River, while the Township of Dawn was located in the interior of Lambton County. As a result, the Township of Moore and Township of Sombra developed more quickly than Dawn Township during the mid-19th century. However, the development potential of all three townships remained limited due to poor drainage in the interior and a lack of adequate roadways or rail access.

3.2.2 Infrastructure Development (1870-1909)

During the late 19th century, the Ontario government passed a series of legislation to facilitate the construction of drainage systems in municipalities. These new laws allowed individual landowners to construct drainage systems and provided loans to municipalities to undertake drainage improvements (Irwin 1987). Among the most important of these laws was the *Ontario Drainage Act* of 1873 which financed the construction of 251 miles of drain, which benefited 201,000 acres of land in the province

(Drainage Superintendents Association of Ontario 2022). The municipalities located in the poorly drained St. Clair Plain, including the townships of the Study Area, borrowed money to fund drainage improvements. By 1906 the Township of Dawn had accumulated \$30,756 in drainage debentures, the Township of Sombra had accumulated \$11,785, and the Township of Moore had accumulated \$12,759 (Ontario Bureau of Industries 1906).

The passage of legislation to facilitate drainage improvements coincided with the advent of railway service to the Township of Sombra and Township of Moore. In 1872, the Canada Southern Railway was built through Moore Township and in 1886 the Huron and Erie Railway was built through Sombra Township (Elford 1982: 59, 160). However, no railway was built through Dawn Township during the late 19th century. The arrival of the railways reduced the importance of waterways for transportation and provided increased access to wider markets.

The improvements in drainage and advent of rail service resulted in a surge of agricultural development and population growth for the townships of the Study Area between 1871 and 1901. Table 1 shows the population growth of the Township of Dawn, Township of Sombra, and Township of Moore between 1871 and 1901 and Table 2 shows the growth of agriculture in the Township of Dawn, Township of Sombra, and Township of Moore between 1871 and 1881¹.

Table 1: Population Growth in Study Area, 1871-1901 (Dominion Bureau of Statistics 1953)

Township	1871 Population	1901 Population	Percent Change
Dawn	1,116	3,659	227%
Sombra	3,397	5,231	53%
Moore	3,998	4,795	20%

Table 2: Agricultural Improvement in Study Area, 1871-1881 (Census of Canada 1871 and 1881)

Township	1871 Improved Acres	1881 Improved Acres	Percent Change
Dawn	6,363	14,664	130%
Sombra	13,054	23,603	81%
Moore	21,848	45,029	106%

3.2.3 Mechanization of Agricultural and Urban Migration (1910-1938)

During the late 19th and early 20th century, most farms were owned by the family who worked them. In general, farms were inherited, and the average lifespan of Ontarians was increasing. Therefore, many children of farmers sought opportunity in the newly opened lands of western Canada or migrated to the burgeoning industrial cities of Ontario. While the farm population was declining, improvements in technology allowed farmers to cultivate more land with less labour (Drummond 1987: 30-31). After

¹ The Census of 1891 and 1901 did not enumerate improved acreage by township

reaching a population peak around 1900, the population of the townships of the Study Area entered a period of marked decline. Between 1911 and 1931 the population of the Township of Dawn decreased from 2,930 to 2,294, the population of the Township of Sombra decreased from 3,969 to 2,971, and the population of the Township of Moore decreased from 3,771 to 3,381 (Dominion Bureau of Statistics 1953).

Despite the population decreases during the early 20th century, the amount of improved acreage within the townships of the Study Area increased, reflecting improvements in technology. In 1921, the amount of improved acreage in Dawn Township was 42,921 acres, the amount of improved acreage in Sombra Township was 49,091 acres, and the amount of improved acreage in Moore Township was 50,642 acres (Census of Canada 1921).

3.2.4 Industrial Development (1939-Present)

The Second World War and postwar period resulted in the growth of industrial activity primarily in Moore Township and to a lesser extent in Sombra Township and Dawn Township. Overall, all three townships remained predominantly agricultural. The Township of Moore experienced the most industrial development due to its proximity to Sarnia and location at the southern end of Chemical Valley. The Township of Sombra also contained industries, including fertilizer and manufacturing industries. The location of both townships along the St. Lawrence Seaway helped to facilitate this industrial development. The Township of Dawn is not located along the St. Lawrence Seaway and remained the most rural of the three townships in the Study Area. Industrial activity in Dawn Township was mostly limited to activity associated with Union Gas, which maintained wells and a compressor station in the township at the southeast edge of the Study Area.

The growth of industry and postwar baby boom resulted in renewed population growth in Moore Township and Sombra Township in the mid to late 20th century. Between 1951 and 1981 the population of Moore Township increased from 4,445 to 8,952 and the population of Sombra Township increased from 3,144 to 4,277. The population of Dawn Township decreased from 2,045 to 1,812 during the same period (Dominion Bureau of Statistics 1953; Statistics Canada 1982). These population statistics reflect the prevalence of industry and employment opportunities in the three townships, with the more industrialized Moore Township containing the highest population.

3.3 MUNICIPAL AND AGENCY INFORMATION REQUESTS

In order to identify previously identified built heritage resources or cultural heritage landscapes, the MHSTCI, OHT, Township of St. Clair, Township of Dawn-Euphemia, and the Lambton Heritage Museum, were contacted, and municipal heritage registers were reviewed. As a result of the information request and review of heritage registers, no properties were identified within the Study Area. Table 3 contains a summary of the requests and results.

Table 3: Municipal and Agency Information Request Results

Organization	Result	Municipal Address	Level of Recognition	Relationship to Study Area
OHT	No OHT owned properties or easements within or adjacent to Study Area.	N/A	N/A	N/A
MHSTCI	No properties designated by Minister or provincial heritage properties within the Study Area	N/A	N/A	N/A
Township of Dawn-Euphemia	No listed or designated properties within the Study Area.	N/A	N/A	N/A
Township of St. Clair	No Response Received	N/A	N/A	N/A
Lambton Heritage Museum	Request forwarded to County Archivist, response pending as of February 17, 2022.	N/A	N/A	N/A

3.4 IDENTIFICATION OF PREVIOUSLY IDENTIFIED AND POTENTIAL BUILT HERITAGE RESOURCES AND CULTURAL HERITAGE LANDSCAPES

3.4.1 Field Program

As described in Section 2.4, a windshield survey of the Study Area was undertaken to identify potential built heritage resources and cultural heritage landscapes situated within the Study Area and confirm the presence of previously identified protected properties. Where identified, the site was photographically documented from publicly accessible roadways and its location was digitally recorded.



The Study Area is set in a rural area with a land use that is primarily agricultural. Agricultural activity mostly includes crop growing with some livestock raising. Some of these farm operations contain late 19th to early 20th century barns, residences, or both. However, they also often contain modern or heavily modified structures and are part of a contemporary agricultural operation. These properties have been modified and modernized over the years to support current agricultural operations and are not considered to be potential cultural heritage landscapes (Plate 3).







Plate 3: Looking south on Courtright Line at modern farming operation and modified late 19th to early 20th century residence



The potential for CHVI was identified through professional judgement, historical research, and evaluation following the MHSTCI *Criteria for Evaluating Potential for Built Heritage Resources and Cultural Heritage Landscapes* (MHSTCI 2016) and O. Reg 9/06. If found to have potential for CHVI, a structure or landscape was assigned a built heritage resource (referred to as BHR) or cultural heritage landscape (referred to as CHL) number and deemed to contain a potential built heritage resource or cultural heritage landscape. Each property was considered both as an individual built heritage resource and as part of a larger potential cultural heritage landscape. A total of 12 newly identified potential built heritage resources were identified following the application of the screening criteria. Table 4 provides an overview of the identified built heritage resources and cultural heritage landscapes and Figure 8 depicts their location on mapping.



Table 4: Identified Built Heritage Resources and Cultural Heritage Landscapes



Reference Number	Type of Property	Location	Previous Heritage Recognition	Description of Known or Potential CHVI	Photograph
BHR-1	Barn	1542 Mandaumin Road	Identified during field review	This property contains a modern residence and a barn. The barn is a gable roof structure with a metal clad roof. The exterior of the barn is clad in timber and the barn foundation is concrete block. The north elevation of the barn contains a modern addition. Additional details are obscured by vegetation, the residence, and distance from roadway. The barn was likely built between 1900 and 1930 based on materials and topographic mapping. The barn has potential design value as a representative early 20 th century gable roof barn.	
BHR-2	Barn	1635 Mandaumin Road	Identified during field review	This property contains a modern residence, outbuildings, and a barn. The barn is a gable roof structure with a metal clad roof. The exterior of the barn is clad in timber. The barn foundation is obscured by distance from roadway. The barn was likely built between 1880 and 1913 based on historical development patterns and topographic mapping. The barn has potential design value as a representative late 19 th to early 20 th century gable roof barn.	

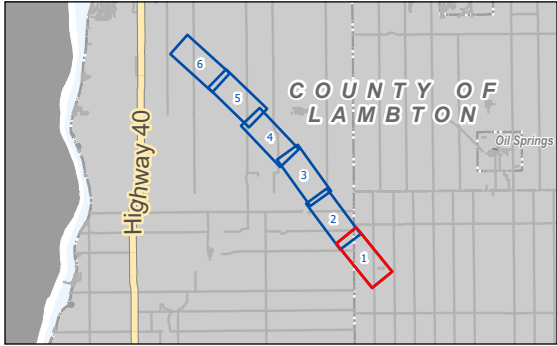
Reference Number	Type of Property	Location	Previous Heritage Recognition	Description of Known or Potential CHVI	Photograph
BHR-3	Barn	2481 McCallum Line	Identified during field review	This property contains a heavily modified residence and barn. The barn is a gable roof structure with a metal clad roof. The roof contains four lightening rods. The exterior of the barn is clad in timber and the barn foundation is poured concrete. The barn was likely built between 1940 and 1960 based on topographic mapping and materials. The barn has potential design value as a rare mid-20 th century example of a timber clad gable roof barn.	
BHR-4	Barn	2823/2829 Stanley Line	Identified during field review	This property contains a modern residence, outbuilding, and barn. The barn is a cross-gable roof structure with metal roof cladding. The roof contains five lightening rods. The barn is clad in timber which has been painted red. The barn foundation is poured concrete. The barn was likely built between 1900 and 1930 based on materials and topographic mapping. The barn has potential design value as a representative example of an early 20 th century cross gable roof barn.	

Reference Number	Type of Property	Location	Previous Heritage Recognition	Description of Known or Potential CHVI	Photograph
BHR-5	Barn	2659 Stanley Line	Identified during field review	This property contains a heavily modified residence, outbuildings, and barn. The barn is a gable roof structure with a hay hood and metal roof cladding. The barn exterior is clad in timber and the barn foundation is poured concrete. The barn was likely built between 1900 and 1930 based on materials and topographic mapping. The barn has potential design value as a representative early 20 th century gable roof barn with hay hood.	
BHR-6	Barn	2046 Oil Springs Line	Identified during field review	This property contains a heavily modified residence, outbuildings, and barn. The barn is a gambrel roof structure with three ventilators and metal roof cladding. The exterior of the barn is clad in timber which has been painted red. The barn foundation is concrete. The barn was likely built between 1900 and 1930 based on materials and topographic mapping. The barn has potential design value as a representative early 20 th century gambrel roof barn.	

Reference Number	Type of Property	Location	Previous Heritage Recognition	Description of Known or Potential CHVI	Photograph
BHR-7	Barn	1813 Courtright Line	Identified during field review	This property contains a modern residence, barn, cast-in-place concrete silos, grain bins, outbuildings and a Quonset hut. The barn is a gambrel roof structure with a metal clad roof and hay hood. The exterior of the barn is clad in timber and the barn foundation is poured concrete. The barn was likely built between 1900 and 1930 based on materials and topographic mapping. The barn has potential design value as a representative early 20 th century gambrel roof barn with hay hood.	
BHR-8	Farmstead	3262 Kimball Road	Identified during field review	This property contains a farmstead comprised of a residence and barn. The residence is a one and one half storey structure with a cross gable roof. The residence contains a red brick exterior and has modern windows. The foundation of the residence is obscured. The barn is a cross gable structure with metal roof cladding. The exterior of the barn is timber and the barn foundation is obscured by distance from roadway and vegetation. The residence and barn were likely built between 1880 and 1913 based on historical development patterns and architectural style. The residence has potential design value as a representative example of a late 19 th to early 20 th century Ontario vernacular residence and the barn has potential design value as a representative example of a late 19 th to early 20 th century cross gable barn.	

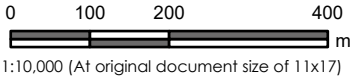
Reference Number	Type of Property	Location	Previous Heritage Recognition	Description of Known or Potential CHVI	Photograph
BHR-9	Barn	1509 Moore Line	Identified during field review	This property contains a heavily modified residence, cast-in-place concrete silo, modern grain bin, Quonset hut, modern outbuilding, and a barn. The barn is a gambrel roof structure with metal roof cladding, four ventilators, and a hay hood. The barn exterior is timber, and the barn foundation is poured concrete. The barn contains a row of windows just above the foundation. The barn was likely built between 1900 and 1930 based on materials and topographic mapping. The barn has potential design value as a representative early 20 th century gambrel roof barn with hay hood.	
BHR-10	Farmstead	1461 Moore Line	Identified during field review	This property contains a farmstead comprised of a residence, modern outbuildings, cast-in-place concrete silo, and barn. The residence is a one and one half storey structure with an intersecting gable roof. The exterior of the residence is buff brick and the windows are modern. The east elevation contains tow shed roof additions. The foundation of the residence is obscured. The barn is a gable roof structure with metal roof cladding. The barn exterior is clad in metal. The east elevation of the barn contains a gambrel roof addition with metal roof cladding and a metal exterior. The barn foundation is obscured by distance from roadway. The residence and barn were likely built between 1880 and 1913 based on historical development patterns and architectural style. The residence has potential design value as a representative example of a late 19 th to early 20 th century Ontario vernacular residence and the barn has potential design value as a representative gable roof barn with a gambrel addition.	

Reference Number	Type of Property	Location	Previous Heritage Recognition	Description of Known or Potential CHVI	Photograph
BHR-11	Barn	1430 Moore Line	Identified during field review	This property contains a heavily modified residence, barn, cast-in-place concrete silo, and modern outbuilding. The barn is a gambrel roof structure with three ventilators and metal roof cladding. The exterior of the barn is clad in timber which has been whitewashed. The barn foundation is concrete block. The barn contains two windows below the roofline of the south elevation and a row of windows on the south and east elevations of the concrete block foundation. The north elevation of the barn contains a shed roof addition near the silo. The barn was likely built between 1900 and 1930 based on materials and topographic mapping. The barn has potential design value as a representative early 20 th century gambrel roof barn.	
BHR-12	Barn	1270 Moore Line	Identified during field review	This property contains a heavily modified residence, barn, outbuildings, and cast in place concrete silo. The barn is a gable roof structure with metal roof cladding. The exterior of the barn is timber, and the south elevation of the timber exterior has been painted red. The barn foundation is not visible due to distance from roadway. The barn was likely built between 1880 and 1930 based on materials and topographic mapping. The barn has potential design value as a representative late 19 th to early 20 th century gable roof barn.	



Notes
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- Study Area
- Preferred Route
- Existing Station
- Built Heritage Resources
- Major Road
- Constructed Drain
- Watercourse
- Waterbody
- Municipal Boundary
- Municipal Boundary, Lower



Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



Project Location
County of Lambton

160961392 REV A
Prepared by bakaur on 2022-01-14
Technical Review by AW on 2022-01-14

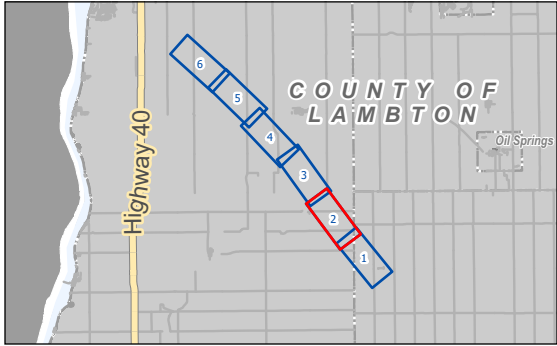
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CULTURAL HERITAGE REPORT: EXISTING CONDITIONS
AND PRELIMINARY IMPACT ASSESSMENT—DAWN-
CORUNNA PROJECT

Figure No.

8 - 1

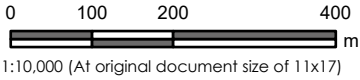
Title

**Identified Built Heritage Resources and
Cultural Heritage Landscapes**



Notes
1. Coordinate System: NAD 1983 UTM Zone 17N
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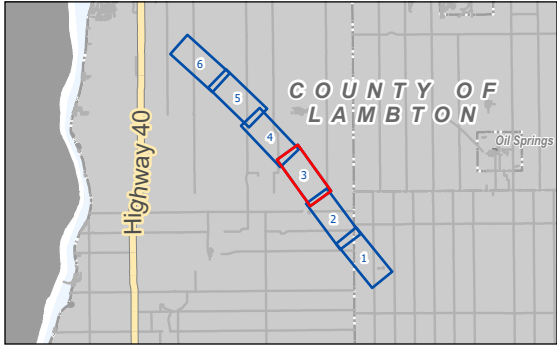


Project Location
County of Lambton
160961392 REV A
Prepared by bakaur on 2022-01-14
Technical Review by AW on 2022-01-14

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CULTURAL HERITAGE REPORT: EXISTING CONDITIONS
AND PRELIMINARY IMPACT ASSESSMENT—DAWN-
CORUNNA PROJECT

Figure No.
8 - 2

Title
**Identified Built Heritage Resources and
Cultural Heritage Landscapes**



Notes
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- Study Area
- Preferred Route
- Built Heritage Resources
- Major Road
- Constructed Drain
- Watercourse
- Waterbody
- Municipal Boundary
- Municipal Boundary, Lower

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Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



Project Location
County of Lambton
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Prepared by bakaur on 2022-01-14
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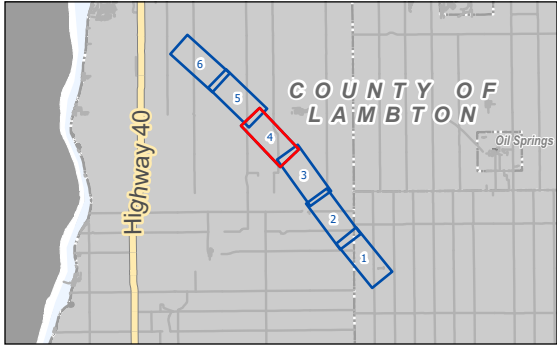
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CULTURAL HERITAGE REPORT: EXISTING CONDITIONS
AND PRELIMINARY IMPACT ASSESSMENT—DAWN-
CORUNNA PROJECT

Figure No.

8 - 3

Title

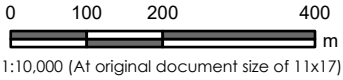
Identified Built Heritage Resources and
Cultural Heritage Landscapes



- Study Area
- Preferred Route
- Built Heritage Resources
- Major Road
- Constructed Drain
- Watercourse
- Waterbody
- Municipal Boundary
- Municipal Boundary, Lower

Notes
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Project Location
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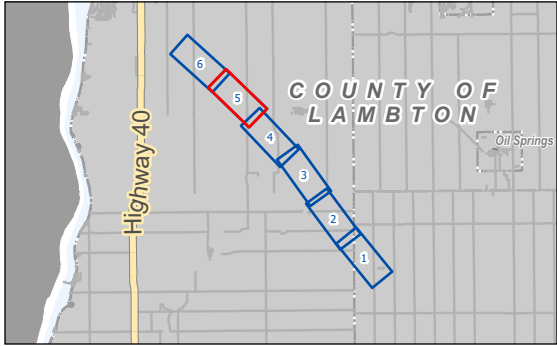
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CULTURAL HERITAGE REPORT: EXISTING CONDITIONS
AND PRELIMINARY IMPACT ASSESSMENT—DAWN-
CORUNNA PROJECT

Figure No.

8 - 4

Title

Identified Built Heritage Resources and
Cultural Heritage Landscapes



Notes
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- Study Area
- Preferred Route
- Built Heritage Resources
- Major Road
- Constructed Drain
- Watercourse
- Municipal Boundary
- Municipal Boundary, Lower

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Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



Project Location
County of Lambton
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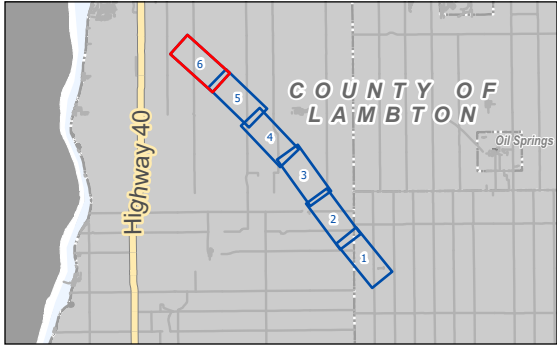
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CULTURAL HERITAGE REPORT: EXISTING CONDITIONS
AND PRELIMINARY IMPACT ASSESSMENT—DAWN-
CORUNNA PROJECT

Figure No.

8 - 5

Title

**Identified Built Heritage Resources and
Cultural Heritage Landscapes**



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- Study Area
- Preferred Route
- Existing Station
- Built Heritage Resources
- Major Road
- Constructed Drain
- Watercourse
- Municipal Boundary
- Municipal Boundary, Lower

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Prepared by bakaur on 2022-01-14
Technical Review by AW on 2022-01-14

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AND PRELIMINARY IMPACT ASSESSMENT—DAWN-
CORUNNA PROJECT

Figure No.

8 - 6

Title

Identified Built Heritage Resources and
Cultural Heritage Landscapes

3.4.2 OEB Environmental Guidelines Indicators

Based on the field program, resources representing one of the indicators of CHVI according to Section 4.3.4 of the *OEB Environmental Guidelines* were identified (Table 5). Where previously identified or potential built heritage resources or cultural heritage landscapes are identified, the impacts of the Project on these resources must be assessed.

Table 5: OEB Guidelines Indicators

Indicators	Identified within the Study Area
Property designated under Part IV of the OHA	Not Identified
A bridge on Ontario Heritage Bridge List	Not identified
Property within a Heritage Conservation District designated under Part V of the OHA	Not identified
Property with an OHT or municipal heritage conservation easement	Not identified
Property with a provincial or federal plaque	Not identified
A National Historic Site	Not identified
Property containing a registered archaeological site	Not Applicable*
Property with archaeological potential	Not Applicable*
Property listed on a municipal heritage register or provincial heritage register	Not identified
Property adjacent to an identified heritage property	Not identified
Property that has buildings or structures over 40 years old	Identified
Property within a Canadian Heritage River watershed	Not Identified
Property associated with a renowned architect or builder	Not identified
Property containing or adjacent to a burial site or cemetery	Not Identified
Parkland	Not identified
Land with distinctive landforms or geographic features	Not Identified
Historic transportation corridors (such as navigational canals, rail lines or trails, traditional Métis portage routes, etc.)	Not Identified
Other human-made alterations to natural landscapes (such as earthworks, plantings, etc.)	Not Identified

*An Archaeological Assessment has been undertaken under separate cover. Archaeological potential is considered beyond the scope of the current study (Stantec 2021).

4.0 PRELIMINARY IMPACT ASSESSMENT

4.1 DESCRIPTION OF PROPOSED UNDERTAKING

The final construction footprint and technique will be determined during the detailed design. As described in Section 1.2, the pipeline construction process involves the following activities:

- Constructing the Proposed Pipeline:
 - Site Preparation
 - Clearing
 - Stripping and RoW Preparation
 - Trenching
 - Stringing
 - Pipe Fabrication and Lowering
 - Backfilling
 - Pressure Testing
 - Clean-Up and Restoration

4.2 IDENTIFICATION OF PRELIMINARY POTENTIAL PROJECT SPECIFIC IMPACTS AND PROPOSED MITIGATION MEASURES

The results of the preliminary impact assessment and preparation of mitigation measures are presented in Table 6. No direct impacts or indirect impacts to any previously identified or potential built heritage resources or cultural heritage landscapes are anticipated at this stage of the Project.

Table 6: Preliminary Impact Assessment Mitigation Measures

Reference Number	Location	Previous Heritage Recognition	Type and Description of Potential/Anticipated Impact	Mitigation Measures
BHR-1	1542 Mandaumin Road	Identified during field review	No Impacts Anticipated: The property is located within the Cultural Heritage Study Area. Construction activities are proposed more than 460 metres northeast of the barn. Therefore, the property is not at risk of direct or indirect impacts and no mitigation measures or further cultural heritage evaluation are required.	Continued avoidance is recommended.

Reference Number	Location	Previous Heritage Recognition	Type and Description of Potential/Anticipated Impact	Mitigation Measures
BHR-2	1635 Mandaumin Road	Identified during field review	<p>No Impacts Anticipated: The property is located within the Cultural Heritage Study Area. Construction activities are proposed more than 300 metres northeast of the barn.</p> <p>Therefore, the property is not at risk of direct or indirect impacts and no mitigation measures or further cultural heritage evaluation are required.</p>	Continued avoidance is recommended.
BHR-3	2841 McCallum Line	Identified during field review	<p>No Impacts Anticipated: The property is located within the Cultural Heritage Study Area. Construction activities are proposed more than 258 metres northeast of the barn.</p> <p>Therefore, the property is not at risk of direct or indirect impacts and no mitigation measures or further cultural heritage evaluation are required.</p>	Continued avoidance is recommended.
BHR-4	2823/2829 Stanley Line	Identified during field review	<p>No Impacts Anticipated: The property is located within the Cultural Heritage Study Area. Construction activities are proposed more than 449 metres southwest of the barn.</p> <p>Therefore, the property is not at risk of direct or indirect impacts and no mitigation measures or further cultural heritage evaluation are required.</p>	Continued avoidance is recommended.
BHR-5	2659 Stanley Line	Identified during field review	<p>No Impacts Anticipated: The property is located within the Cultural Heritage Study Area. Construction activities are proposed more than 62 metres west of the barn.</p> <p>Therefore, the property is not at risk of direct or indirect impacts and no mitigation measures or further cultural heritage evaluation are required.</p>	Continued avoidance is recommended.
BHR-6	2046 Oil Springs Line	Identified during field review	<p>No Impacts Anticipated: The property is located within the Cultural Heritage Study Area. Construction activities are proposed more than 769 metres northeast of the barn.</p> <p>Therefore, the property is not at risk of direct or indirect impacts and no mitigation measures or further cultural heritage evaluation are required.</p>	Continued avoidance is recommended.

Reference Number	Location	Previous Heritage Recognition	Type and Description of Potential/Anticipated Impact	Mitigation Measures
BHR-7	1813 Courtright Line	Identified during field review	<p>No Impacts Anticipated: The property is located within the Cultural Heritage Study Area. Construction activities are proposed more than 150 metres northeast of the barn.</p> <p>Therefore, the property is not at risk of direct or indirect impacts and no mitigation measures or further cultural heritage evaluation are required.</p>	Continued avoidance is recommended.
BHR-8	3262 Kimball Road	Identified during field review	<p>No Impacts Anticipated: The property is located within the Cultural Heritage Study Area. Construction activities are proposed more than 81 metres northeast of the residence and barn.</p> <p>Therefore, the property is not at risk of direct or indirect impacts and no mitigation measures or further cultural heritage evaluation are required.</p>	Continued avoidance is recommended.
BHR-9	1509 Moore Line	Identified during field review	<p>No Impacts Anticipated: The property is located within the Cultural Heritage Study Area. Construction activities are proposed more than 503 metres southwest of the barn.</p> <p>Therefore, the property is not at risk of direct or indirect impacts and no mitigation measures or further cultural heritage evaluation are required.</p>	Continued avoidance is recommended.
BHR-10	1461 Moore Line	Identified during field review	<p>No Impacts Anticipated: The property is located within the Cultural Heritage Study Area. Construction activities are proposed more than 106 metres southwest of the residence and barn.</p> <p>Therefore, the property is not at risk of direct or indirect impacts and no mitigation measures or further cultural heritage evaluation are required.</p>	Continued avoidance is recommended.
BHR-11	1430 Moore Line	Identified during field review	<p>No Impacts Anticipated: The property is located within the Cultural Heritage Study Area. Construction activities are proposed more than 254 metres southwest of the barn.</p> <p>Therefore, the property is not at risk of direct or indirect impacts and no mitigation measures or further cultural heritage evaluation are required.</p>	Continued avoidance is recommended.

Reference Number	Location	Previous Heritage Recognition	Type and Description of Potential/Anticipated Impact	Mitigation Measures
BHR-12	1270 Moore Line		<p>No Impacts Anticipated: The property is located within the Cultural Heritage Study Area. Construction activities are proposed more than 386 metres northeast of the barn.</p> <p>Therefore, the property is not at risk of direct or indirect impacts and no mitigation measures or further cultural heritage evaluation are required.</p>	Continued avoidance is recommended.

4.2.1 Summary of Impacts

Direct Impacts: Following the assessment of impacts presented in Table 6, no previously identified or potential built heritage resources or cultural heritage landscapes were identified to be situated within the Project Location and at risk for direct impacts.

Indirect Impacts: Following the assessment of impacts presented in Table 6, no previously identified or potential built heritage resources or cultural heritage landscapes were identified to be situated within 50 metres of the Project Location and at risk of indirect impacts.

5.0 RECOMMENDATIONS

A total of 12 properties containing potential built heritage resources were determined to be situated within the Study Area. Following an assessment of impacts, no direct or indirect impacts were identified. Therefore, no mitigation measures or further cultural heritage evaluation are required. Continued avoidance of these 12 properties is recommended.

To assist in the retention of historic information, copies of this report should be deposited with local repositories of historic material and municipalities. Therefore, it is recommended that this report be deposited at the following location:

Lambton County Archives
787 Broadway Street
Wyoming, Ontario N0N 1T0

CULTURAL HERITAGE REPORT: EXISTING CONDITIONS AND PRELIMINARY IMPACT ASSESSMENT—DAWN-CORUNNA PROJECT


Closure
June 23, 2022

6.0 CLOSURE


This report has been prepared for the sole benefit of Enbridge Gas Inc., and may not be used by any third party without the express written consent of Stantec Consulting Ltd. Any use which a third party makes of this report is the responsibility of such third party.

We trust this report meets your current requirements. Please do not hesitate to contact us should you require further information or have additional questions about any facet of this report.

Stantec Consulting Ltd.

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Date: 2022.06.24
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Managing Principal, Environmental Services
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2026 Kimball-Colinville Well Drilling Project

Appendix D Stage 1-2 Archaeological Assessment: Coveny and Kimball-Colinville Well Drilling, Proposed Location of TCK 68
July 16, 2025

**Appendix D Stage 1-2 Archaeological Assessment:
Coveny and Kimball-Colinville Well
Drilling, Proposed Location of TCK
68**





Stage 1-2 Archaeological Assessment:
Coveny and Kimball-Colinville Well
Drilling, Proposed Location of TKC 68

Part of Lot 17, Concession 7,
Geographic Township of Moore,
now Township of St. Clair,
Lambton County, Ontario

October 22, 2021

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Project Information Form Number:
P256-0693-2021
Project Number: 160961448

ORIGINAL REPORT

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Executive Summary

Stantec Consulting Ltd. (Stantec) was retained by Enbridge Gas Inc. (Enbridge) to complete a Stage 1-2 archaeological assessment for the Coveny and Kimball-Colinville Well Drilling Project, Proposed Location of TKC 68 (the Project). The archaeological assessment is being completed during the preliminary planning phase of the Project. The Stage 1-2 archaeological assessment was carried out in accordance with the provisions of the *Ontario Heritage Act* (Government of Ontario 1990a) and the Ontario Energy Board's (OEB) established guidelines for the expansion of natural gas service in its *Guidelines for Assessing and Reporting on Natural Gas System Expansion in Ontario* (OEB 2019). Overall, the study area for this Stage 1-2 archaeological assessment comprises approximately 34.5 hectares located on part of Lot 17, Concession 7, Geographic Township of Moore, now Township of St. Clair, Lambton County, Ontario.

Stage 1-2 archaeological assessment of the study area was conducted under Project Information Form number P256-0693-2021 issued to Parker Dickson, MA, by the Ministry of Heritage, Sport, Tourism and Culture Industries (MHSTCI). Stage 1 archaeological assessment determined that the study area retained potential for the identification and recovery of archaeological resources. As such, Stage 2 archaeological assessment was completed on September 3 and 7, 2021.

Four new archaeological locations were identified during the Stage 2 survey of the study area. The Stage 2 assessment of Location 1 resulted in the identification of a single isolated find, a chipped lithic knife made of Kettle Point chert. The Stage 2 assessment of Location 2 resulted in the identification of a single isolated find, a broken projectile point manufactured from an indeterminate chert. The Stage 2 assessment of Location 3 resulted in the identification of a single isolated find, a broken projectile point manufactured from Kettle Point chert. The Stage 2 assessment of Location 4 resulted in the identification of a single isolated find, a retouched flake of indeterminate chert.

No further archaeological assessment is recommended for Location 1, Location 2, Location 3, and Location 4. No other archaeological resources were identified during the Stage 2 survey of the study area. Thus, in accordance with Section 2.2 and Section 7.8.4 Standard 3 of the MHSTCI's 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011), no further archaeological assessment of the surveyed portions of the study area is required.

The MHSTCI is asked to review the results presented and to accept this report into the *Ontario Public Register of Archaeological Reports*.

The Executive Summary highlights key points from the report only; for complete information and findings, the reader should examine the complete report.

Project Personnel

Project Manager:	Mark Knight, MA, MCIP, RPP
Task Manager:	Kayla Ginter
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Acknowledgements

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Chippewas of the Thames First Nation:	Fallon Burch – Consultation Coordinator Rochelle Smith – Events & Promotions Coordinator Carolyn Albert – Administrative Assistant
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1.0 PROJECT CONTEXT

1.1 DEVELOPMENT CONTEXT

Stantec Consulting Ltd. (Stantec) was retained by Enbridge Gas Inc. (Enbridge) to complete a Stage 1-2 archaeological assessment for the Coveny and Kimball-Colinville Well Drilling Project, Proposed Location of TKC 68 (the Project). The Project includes the construction of a temporary gravel drilling pad of approximately 8,100 square meters. Access to the pad will be via a new permanent access laneway. Upon completion of drilling activities, approximately 120 metres of Nominal Pipe Size (NPS) NPS 10-inch lateral pipeline will be constructed to connect the new natural gas storage well to the existing Kimball-Colinville gathering system, and portions of the temporary gravel drilling pad will be removed such that a permanent gravel pad of 60 square meters will remain. To accommodate potential future well drilling projects, the study area for this Stage 1-2 archaeological assessment was expanded to capture more than what is required for the Project. Overall, the study area for this Stage 1-2 archaeological assessment comprises approximately 34.5 hectares located on part of Lot 17, Concession 7, Geographic Township of Moore, now Township of St. Clair, Lambton County, Ontario (Figures 1 and 2).

The archaeological assessment is being completed during the preliminary planning phase of the Project. The Stage 1-2 archaeological assessment was carried out in accordance with the provisions of the *Ontario Heritage Act* (Government of Ontario 1990a) and the Ontario Energy Board's (OEB) established guidelines for the expansion of natural gas service in its *Guidelines for Assessing and Reporting on Natural Gas System Expansion in Ontario* (OEB 2019).

1.1.1 Objectives

In compliance with the provincial standards and guidelines set out in the Ministry of Heritage, Sport, Tourism and Culture Industries' (MHSTCI) 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011), the objectives of the Stage 1 archaeological assessment are as follows:

- To provide information about the study area's geography, history, previous archaeological fieldwork, and current land conditions.
- To evaluate the study area's archaeological potential which will support recommendations for Stage 2 survey for all or parts of the property.
- To recommend appropriate strategies for Stage 2 survey.

To meet these objectives, Stantec archaeologists employed the following research strategies:

- A review of relevant archaeological, historical, and environmental literature pertaining to the study area.
- A review of the land use history, including historical atlases.
- An examination of the *Ontario Archaeological Sites Database* to determine the presence of registered archaeological sites in and around the study area.

In compliance with the provincial standards and guidelines set out in the MHSTCI's 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011), the objectives of the Stage 2 archaeological assessment are as follows:

- To document archaeological resources within the study area.
- To determine whether the study area contains archaeological resources requiring further assessment.
- To recommend appropriate Stage 3 assessment strategies for archaeological resources identified.

Permission to enter the study area to conduct the archaeological assessment was provided by Enbridge in consultation with individual landowner consent, as required.

1.2 HISTORICAL CONTEXT

1.2.1 Post-contact Indigenous Resources

“Contact” is typically used as a chronological benchmark when discussing Indigenous archaeology in Canada and describes the contact between Indigenous and European cultures. The precise moment of contact is a constant matter of discussion. Contact in what is now the province of Ontario is broadly assigned to the 16th century (Loewen and Chapdelaine 2016).

At the turn of the 16th century, the region of the study area is documented to have been occupied by the Western Basin Tradition archaeological culture (see Section 1.3.2). Following the turn of the 17th century, the region of the study area is understood to have been within the territory of the Fire Nation, an Algonquian group occupying the western end of Lake Erie. It is argued, however, that the Attiwandaron (Neutral) expanded extensively westward, displacing the Fire Nation, and occupying the region of the current Municipality of Chatham-Kent (Lennox and Fitzgerald 1990:418-419). It is debated whether the Fire Nation was descendent from the archaeologically described Western Basin Tradition or if they migrated into the western part of Lake Erie, displacing a previous Indigenous culture (Murphy and Ferris 1990:193-194). Historians understand that the displaced Fire Nation moved across the St. Clair and Detroit Rivers into lower Michigan and their populations are synonymous with the later Kickapoo, Miami, Potawatomi, Fox, and Sauk (Heidenreich 1990: Figure 15.1). Bkejwanong (Walpole Island) First Nation tradition states that nations of the Three Fires (a political confederacy constituted of the Pottawatomi, the Ojibwa, and Ottawa) have occupied the delta of the St. Clair River and the surrounding region continually for thousands of years (Walpole Island First Nation [WIFN] n.d.). In 1649, the Seneca, with the Mohawk, led a campaign into southern Ontario and dispersed the resident Indigenous populations and the Seneca used the lower Great Lakes basin as a prolific hinterland for beaver hunting (Heidenreich 1978; Trigger 1978:345).

By 1690, Ojibwa-speaking people had begun to displace the Seneca from southern Ontario. The Indigenous economy, since the turn of the 18th century, focused on fishing and the fur trade, supplemented by agriculture and hunting (Konrad 1981; Rogers 1978). The study area falls within the traditional territory of the WIFN and the Aamjiwnaang (Sarnia) First Nation (AFN), the Wiikwewong and Aazhoozena (Kettle Point and Stony Point) First Nation (Lytwyn 2009), and the Deshkaan Ziibing Anishnaabeg (Chippewas of the Thames First Nation [COTTFN]). Some populations of Wyandot (a nation

of historically amalgamated Tionontate and Huron-Wendat populations) also had moved to the region of Lake St. Clair at the turn of the 18th century and resided with the Three Fires nations (Tooker 1978:398).

The expansion of the fur trade led to increased interaction between European and Indigenous people, and ultimately intermarriage between European men and Indigenous women. During the 18th century the progeny of these marriages began to no longer identify with either their paternal or maternal cultures, but instead as Métis. The ethnogenesis of the Métis progressed with the establishment of distinct Métis communities along the major waterways in the Great Lakes of Ontario. Métis communities were primarily focused around the upper Great Lakes and along Georgian Bay, however, Métis people have historically lived throughout Ontario (Métis Nation of Ontario 2021; Stone and Chaput 1978:607-608).

By 1730, it is reported that a community of approximately 300 people were living at the north end of Lake St. Clair (Rogers 1978:762). D'Anville's 1755 map (Konrad 1981: Plate 1) indicates the Mississauga (an Ojibwa nation) on the east bank of the St. Clair River. By 1760, the Chippewa community was established on the Thames River, southwest of present-day London, Ontario (COTTEN 2021). By approximately 1790, the region of the study area was occupied by populations of the Three Fires nations and Wyandot. By 1796, the Three Fires community of Chenail Ecarté was established (Feest and Feest 1978:777-779).

Under British administration in the 19th century, the various Indigenous groups were divided into separate bands. The Anishinaabe included the western Algonquian peoples, among them the Chippewa and the Odawa. Until the 18th century, the central Algonquian-speaking peoples, including the Potawatomi, were located in the Michigan Peninsula (Blackbird 1887). In the middle of the 18th century, the Chippewa were located on the south shores of Lake Huron, the east shores of Georgian Bay, and on the west end of Lake Ontario. Indigenous peoples and their communities continue to play a large role in the occupation of the study area and its environs.

Since contact with European explorers and immigrants, and later, with the establishment of provincial and federal governments (the Crown), the lands within Ontario have been included in various treaties, land claims, and land cessions. Following the American Revolutionary War, the Crown focused on the settlement of European immigrants into what became the province of Upper Canada in 1791. To enable widespread settlement, the Crown negotiated a series of treaties with Indigenous peoples. Figure 3 provides a map of southwestern Ontario illustrating early treaties and purchases (Government of Canada n.d.), including a vast tract of land southeast of Lake Huron with a treaty or agreement date of July 10, 1824. Later, the chiefs of the Chippewa and representatives of the Crown established this vast tract of land as Treaty Number 27 ½. Though not an exhaustive list, Morris (1943) provides a general outline of some of the treaties within the Province of Ontario from 1783 to 1923. Figure 4 provides an approximate outline of Treaty Number 27 ½, illustrated by the letter "T", based on a series of compilations by Morris (1943). The lands of Treaty Number 27 ½ are described by Morris (1943:26) as:

...being an agreement made at Amherstburg in the Western District of the Province of Upper Canada on the 26th of April, 1825, between James Givens, Esquire, Superintendent of Indian Affairs, on behalf of His Majesty King George the Fourth and the Chiefs and Principal Men of the part of the Chippewa Nation of Indians, inhabiting and claiming the tract of land

.... Wawanosh Township in the County of Huron was named after Way-way-nosh the principal Chief of the Band making this Treaty.

The nature of Indigenous settlement size, population distribution, and material culture shifted as European settlers encroached upon Indigenous territory. However, despite this shift, “written accounts of material life and livelihood, the correlation of historically recorded villages to their archaeological manifestations, and the similarities of those sites to more ancient sites have revealed an antiquity to documented cultural expressions that confirms a deep historical continuity to...systems of ideology and thought” (Ferris 2009:114). As a result, Indigenous peoples have left behind archaeological resources throughout the region which show continuity with past peoples, even if they have not been explicitly recorded in Euro-Canadian documentation.

1.2.2 Euro-Canadian Resources

In 1791, the Provinces of Upper Canada and Lower Canada were created from the former Province of Quebec by an act of British Parliament. At this time, Colonel John Graves Simcoe was appointed as the Lieutenant Governor of Upper Canada and was tasked with governing the new province, directing its European settlement and establishing a constitutional government modelled after that of Britain (Petrhshyn 1985). In 1792, Simcoe divided Upper Canada into 19 counties consisting of previously settled lands, new lands opened for settlement, and lands not yet acquired by the Crown. These new counties stretched from Essex in the west to Glengarry in the east.

In discussing the late 19th century historical mapping, it must be remembered that historical county atlases were produced primarily to identify factories, offices, residences, and landholdings of subscribers and were funded by subscription fees. Landowners who did not subscribe were not always listed on the maps (Caston 1997:100). As such, structures were not necessarily depicted or placed accurately (Gentilcore and Head 1984). Review of historical mapping also has inherent accuracy difficulties due to potential error in geo-referencing. Geo-referencing is conducted by assigning spatial coordinates to fixed locations and using these points to spatially reference the remainder of the map. Due to changes in “fixed” locations over time (e.g., road intersections, road alignments, watercourses, etc.), errors and difficulties of scale, and the relative idealism of the historical cartography, historic maps may not translate accurately into real space points. This may provide obvious inconsistencies during historical map review.

Lambton County was originally part of the District of Hesse, which in 1792 was renamed the Western District. The Western District consisted of Kent (which included Lambton) and Essex Counties, and was named after John George Lambton, first Earl of Durham. Lambton was the author of the Durham Report, which investigated the issues that led to the Upper Canada Rebellion of 1837. The townships in Lambton were not completely surveyed until 1835. After the *Municipal Act* of 1849, which provided a means of government for towns and counties, several counties amalgamated and separated over the next few years with the former Kent County. Lambton County finally became an independent county in 1853 (Elford 1982).

Euro-Canadian settlement of Lambton County began as early as 1796 as French settlers began living along the banks of the St. Clair River. Large-scale European settlement, however, did not begin until the 1830s. The majority of the surveyed lots in the townships of Lambton County were assigned to children of United Empire Loyalists, who sold their rights to early settlers. Early European settlers were primarily tenant farmers from Britain as well as artisans and retired military men. The population of Lambton County swelled in the 1850s with the establishment of the Great Western Railway and the Great Trunk (later renamed Grand Trunk) Railway. This growth remained steady until 1891, when the population peaked at 58,810 European settlers (Elford 1982).

Moore Township, with its easy accessibility to the St. Clair River, was one of the first areas in Lambton County to be settled by European immigrants. Fifteen French-speaking and five English-speaking families were among the first Europeans to settle the area. Part of Moore Township was bought from the Aamjiwnaang First Nation in 1827 and a reserve was partitioned for the Indigenous community along the township's northern border. The township was named after Sir John Moore, the celebrated British General killed in the Battle of Corunna, in 1829. The survey of Moore township was completed in 1829 by Roswell Mount, who squeezed as many lots along the St. Clair River front as possible for veterans of the Napoleonic Wars. Figure 5 illustrates a portion of the 1829 plan of Moore Township (Mount 1829). No Indigenous notations are depicted in close proximity to the study area on the 1829 plan of Moore Township, however, the southwest corner of the township, including 2,575 acres, had been dedicated as an "Indian Reserve". A landowner for Lot 17, Concession 7 is depicted on the 1829 plan and though it is difficult to clearly read the name, the inscription may be "Mary Hughes".

A portion of the 1880 map of Moore Township from the *Illustrated Historical Atlas of the County of Lambton, Ontario* (Belden & Co. 1880) is illustrated in Figure 6. Many lots on the 1880 map do not show a landowner name or evidence of structures; however, this is because only the names of subscribers to the *Dominion Atlas of Canada* were shown. In fact, the lots of Moore Township would have been claimed by various private landowners, holdings companies, the Crown, and the Clergy by the time of the 1880 map. The population of Moore Township had reached 5,146 by 1881, in large part to the advent of the Canada Southern Railway (Mika and Mika 1983). Though the interior of the township had been settled, the population of the township and economic centres continued to be focused along the St. Clair River, particularly in the communities of Corunna, Mooretown, and Courtright. A landowner is not illustrated for Lot 17, Concession 7 on the 1880 map of Moore Township, and no structures are depicted. The majority of the region surrounding the study area has been subject to European-style agricultural practices for over 100 years, having been settled by Euro-Canadian farmers by the late 19th century. Much of the region today continues to be used for agricultural purposes.

1.3 ARCHAEOLOGICAL CONTEXT

1.3.1 The Natural Environment

The study area is situated within the St. Clair Clay Plain physiographic region. This region is described as:

Adjoining Lake St. Clair in Essex and Kent County Counties and the St. Clair River in Lambton County are extensive clay plains covering 2,270 square miles. The region is one of little relief, lying between 575 and 700 feet a.s.l. [above sea level], except for the moraine at Ridgetown and Blenheim which rises 50 to 500 feet higher....Glacial Lake Whittlesey, which deeply covered all of these lands, and Lake Warren which subsequently covered nearly the whole area, failed to leave deep stratified beds of sediment on the underlying clay till except around Chatham, between Blenheim and the Rondeau marshes, and in a few other smaller areas. Most of Lambton and Essex Counties, therefore, are essentially till plains smoothed by shallow deposits of lacustrine clay which settled in the depressions while the knolls were being lowered by wave action.

(Chapman and Putnam 1986:147)

The *Soil Survey of Lambton County* (Matthews *et al.* 1957) indicates that soils within the study area comprise Caistor clay and Brookston clay. Caistor clay is a medium lime content clay till with imperfect drainage, and Brookston clay is a high lime context clay with poor drainage (Matthews *et al.* 1957). Agricultural fields in this area commonly have tile drainage to increase the agricultural productivity. Although not ideal, Caistor clay and Brookston clay would also have been suitable for Indigenous agricultural practices.

Potable water is the single most important resource for any extended human occupation or settlement and since water sources in southwestern Ontario have remained relatively stable over time, current proximity to drinkable water is regarded as a useful index for the evaluation of archaeological site potential. In fact, distance to water is one of the most commonly used variables for predictive modeling of archaeological site location in Ontario. The closest extant source of potable water to the study area is Burton Creek, located approximately 1.8 kilometres to the east. Generally, the flow of natural water courses throughout the township has been altered through realignments from the construction of multiple municipal drains. In fact, modern municipal drains are located adjacent to the north and east of the study area.

1.3.2 Pre-contact Indigenous Resources

This portion of southwestern Ontario has been occupied by Indigenous peoples since the retreat of the Wisconsin glacier approximately 11,000 years ago. Much of what is understood about the lifeways of Indigenous peoples is derived from archaeological evidence and ethnographic analogy. In Ontario, Indigenous culture prior to the period of contact with European peoples has been distinguished into cultural periods based on observed changes in material culture. These cultural periods are largely based in observed changes in formal lithic tools, and separated into the Early Paleo-Indian, Late Paleo-Indian, Early Archaic, Middle Archaic, and Late Archaic periods. Following the advent of ceramic technology in the Aboriginal archaeological record, cultural periods are separated into the Early Woodland, Middle Woodland, and Late Woodland periods, based primarily on observed changes in formal ceramic decoration. It should be noted that these cultural periods do not necessarily represent specific cultural identities but are a useful paradigm for understanding changes in Indigenous culture through time. The current understanding of Indigenous archaeological culture is summarized in Table 1 below, based on

Ellis and Ferris (1990). The provided time periods are based on the “Common Era” calendar notation system: Before Common Era (BCE) and Common Era (CE).

Table 1: Generalized Cultural Chronology of the Study Area

Period	Characteristics	Time	Comments
Early Paleo-Indian	Fluted Projectiles	9000 – 8400 BCE	Spruce parkland/caribou hunters
Late Paleo-Indian	Hi-Lo Projectiles	8400 – 8000 BCE	Smaller but more numerous sites
Early Archaic	Kirk and Bifurcate Base Points	8000 – 6000 BCE	Slow population growth
Middle Archaic	Brewerton-like Points	6000 – 2500 BCE.	Environment similar to present
Late Archaic	Narrow Point	2500 – 1800 BCE	Increasing site size
	Broad Point	1800 – 1500 BCE	Large chipped lithic tools
	Small Point	1500 – 1100 BCE	Introduction of bow hunting
Terminal Archaic	Hind Points	1100 – 950 BCE	Emergence of true cemeteries
Early Woodland	Meadowood Points	950 – 400 BCE	Introduction of pottery
Middle Woodland	Couture Corded Pottery	400 BCE – 500 CE	Increased sedentism
	Riviere au Vase Phase	500 – 800 CE	Seasonal hunting and gathering
Late Woodland	Younge Phase	800 – 1200 CE	Incipient agriculture
	Springwells Phase	1200 – 1400 CE	Agricultural villages
	Wolf Phase	1400 – 1550 CE	Earth worked villages, warfare
Contact Indigenous	Various Algonkian and Iroquoian Groups	1600 – 1875 CE	Early written records and treaties
Historical	French/Euro-Canadian	1749 CE – present	European settlement

Local environmental conditions were significantly different from what they are today. Ontario’s first peoples would have crossed the landscape in small groups in search of food, particularly migratory game species. In this area, caribou may have been a Paleo-Indian diet staple, supplemented by wild plants, small game, birds, and fish. Given the low density of populations on the landscape at this time and their mobile nature, Paleo-Indian sites are small and ephemeral. Such sites are sometimes identified by the presence of fluted points and are frequently located adjacent to the shorelines of large glacial lakes (Ellis and Deller 1990).

Archaeological records indicate subsistence changes around 8000 BCE at the start of the Archaic Period in southwestern Ontario. Since the large mammal species that formed the basis of the Paleo-Indian diet became extinct or moved north with the warming of the climate, Archaic populations had a more varied diet, exploiting a range of plants and bird, mammal, and fish species. Reliance on specific food resources such as fish, deer, and several nut species became more noticeable through the Archaic Period and the presence of warmer, more hospitable environs led to expansion of group and family sizes. In the archaeological record, this is evident in the presence of larger sites. The coniferous forests of earlier times were replaced by stands of mixed coniferous and deciduous trees by about 4000 BCE. The transition to more productive environmental circumstances led to a rise in population density. As a result,

Archaic sites become more abundant over time. Artifacts typical of these occupations include a variety of stemmed and notched projectile points; chipped stone scrapers; ground stone tools (e.g., celts, adzes, etc.) and ornaments (e.g., bannerstones, gorgets, etc.); bifaces or tool blanks; animal bone; and chert waste flakes, a byproduct of the tool making process (Ellis *et al.* 1990).

Significant changes in cultural and environmental patterns occurred in the Early and Middle Woodland periods (*circa* 950 BCE to 800 CE). Occupations became increasingly more permanent in this period, culminating in major semi-permanent villages by roughly 1,000 years ago. Archaeologically, the most significant changes by Woodland peoples were the appearance of artifacts manufactured from modeled clay and the emergence of more sedentary villages. The earliest pottery was crudely made by the coiling method and early house structures were simple oval enclosures. The Early and Middle Woodland periods are also characterized by extensive trade in raw materials, objects and finished tools, with sites in Ontario containing trade items with origins in the Mississippi and Ohio River valleys (Spence *et al.* 1990).

By the Late Woodland period there was a distinctive cultural occupation in southwestern Ontario, including Essex, Kent, and Lambton counties. The primary Late Woodland occupants of this area were populations described by archaeologists as Western Basin Tradition. Murphy and Ferris (1990:189) indicate that these people had ties with populations in southeastern Michigan and northwestern Ohio and represent an *in situ* cultural development from the earlier Middle Woodland groups. The Western Basin Tradition seems to have been centred in the territory comprising the eastern side of the drainage basin of Lake Erie, Lake St. Clair, and the southern end of Lake Huron. The Western Basin Tradition is divided up into four phases based on differences in settlement and subsistence strategies and pottery attributes. By the time of increased European interaction in the last half of the 16th century and early 17th century, there were no Western Basin Tradition sites in the Essex County area, their inhabitants having moved west into Michigan (Ferris 2009:32-33).

1.3.3 Registered Archaeological Sites and Surveys

In Canada, archaeological sites are registered within the Borden system, a national grid system designed by Charles Borden in 1952 (Borden 1952). The grid covers the entire surface area of Canada and is divided into major units containing an area that is two degrees in latitude by four degrees in longitude. Major units are designated by upper case letters. Each major unit is subdivided into 288 basic unit areas, each containing an area of 10 minutes in latitude by 10 minutes in longitude. The width of basic units reduces as one moves north due to the curvature of the earth. In southern Ontario, each basic unit measures approximately 13.5 kilometres east-west by 18.5 kilometres north-south. In northern Ontario, adjacent to Hudson Bay, each basic unit measures approximately 10.2 kilometres east-west by 18.5 kilometres north-south. Basic units are designated by lower case letters. Individual sites are assigned a unique, sequential number as they are registered. These sequential numbers are issued by the MHSTCI who maintain the *Ontario Archaeological Sites Database*. The study area under review is located within Borden Block AeHo.

Information concerning specific site locations is protected by provincial policy and is not fully subject to the *Freedom of Information and Protection of Privacy Act* (Government of Ontario 1990b). The release of such information in the past has led to looting or various forms of illegally conducted site destruction.

Confidentiality extends to media capable of conveying location, including maps, drawings, or textual descriptions of a site location. The MHSTCI will provide information concerning site location to the party or an agent of the party holding title to a property, or to a licensed archaeologist with relevant cultural resource management interests.

An examination of the *Ontario Archaeological Sites Database* has shown that there are no registered archaeological sites within one kilometre of the study area (Government of Ontario 2021a). A query of the *Ontario Public Record of Archaeological Reports* was completed to identify previous archaeological surveys which may document work within 50 metres of the study area. Based on the query, no previous archaeological surveys have been completed within 50 metres of the study area (Government of Ontario 2021b).

1.3.4 Archaeological Potential

Archaeological potential is established by determining the likelihood that archaeological resources may be present within a study area. Stantec applied archaeological potential criteria commonly used by MHSTCI (Government of Ontario 2011) to determine areas of archaeological potential within the region under study. These variables include proximity to previously identified archaeological sites, distance to various types of water sources, soil texture and drainage, glacial geomorphology, elevated topography, and the general topographic variability of the area. Extensive land disturbance can eradicate archaeological potential (Government of Ontario 2011).

Distance to modern or ancient water sources is generally accepted as the most important determinant of past human settlement patterns and considered alone, may result in a determination of archaeological potential. However, any combination of two or more other criteria, such as well-drained soils or topographic variability, may also indicate archaeological potential.

As discussed above, distance to water is an essential factor in archaeological potential modeling. When evaluating distance to water it is important to distinguish between water and shoreline, as well as natural and artificial water sources, as these features affect site locations and types to varying degrees. The MHSTCI categorizes water sources in the following manner:

- Primary water sources: lakes, rivers, streams, creeks.
- Secondary water sources: intermittent streams and creeks, springs, marshes, and swamps.
- Past water sources: glacial lake shorelines, relic river or stream channels, cobble beaches, shorelines of drained lakes or marshes.
- Accessible or inaccessible shorelines: high bluffs, swamp or marshy lake edges, sandbars stretching into marsh.

The closest source of extant potable water is Burton Creek, located approximately 1.8 kilometres to the east of the study area. Additional ancient and/or relic tributaries of other primary and secondary water sources may have existed but are not identifiable today. Additionally, natural drainage in the area has been significantly altered through the establishment of municipal drainage channels. Soil texture can be an important determinant of past settlement, usually in combination with other factors such as

topography. As indicated previously, soil within the study area comprises Caistor clay and Brookston clay that, while not ideal, would be suitable for Indigenous agriculture.

Archaeological potential can be extended to areas of early Euro-Canadian settlement, including places of military or pioneer settlements; early transportation routes; and properties listed on the municipal register or designated under the *Ontario Heritage Act* (Government of Ontario 1990a) or property that local histories or informants have identified with possible historical events. The 1829 plan of Moore Township notes a landowner for Lot 17, Concession 7. The *Illustrated Historical Atlas of the Lambton County, Ontario* (Belden & Co. 1880) demonstrates that the region of the study area had been occupied by Euro-Canadian settlers by the late 19th century. Though no landowners or structures are illustrated on the 1880 map of Moore Township, much of the established road system and agricultural settlement from the 19th century is still visible today.

When the above listed criteria are applied, the study area retains potential for the identification of Indigenous and Euro-Canadian archaeological resources. Thus, in accordance with Section 1.3.1 of the MHSTCI's 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011), a Stage 2 archaeological assessment was required.

1.4 EXISTING CONDITIONS

The Stage 1-2 archaeological assessment was conducted under Project Information Form (PIF) number P256-0693-2021 issued to Parker Dickson, MA, by the MHSTCI. The study area comprises approximately 34.5 hectares located on part of Lot 17, Concession 7, Geographic Township of Moore, now Township of St. Clair, Lambton County, Ontario. The study area is largely agricultural field with some previous modern disturbance from existing Enbridge and municipal infrastructure.

2.0 FIELD METHODS

Stage 1-2 archaeological assessment of the study area was conducted under PIF number P256-0693-2021 issued to Parker Dickson, MA of Stantec by the MHSTCI. Overall, the study area comprises approximately 34.5 hectares. Prior to the start of the Stage 2 archaeological assessment, Enbridge provided preliminary mapping of the Project's proposed impacts which defined the assessment area (i.e., the study area). This mapping was then geo-referenced by Stantec's Geographical Information Services (GIS) team and a digital file (i.e., a shape file) was created of the study area. The digital file was uploaded to handheld Global Positioning Service (GPS) devices for use in the field.

The Stage 2 survey of the study area was completed on September 3, 2021 and September 7, 2021. On both days of survey, the weather was mainly sunny and warm. Darren Kipping (P422) was the Field Director on September 3, 2021, and Ruth Dickau (R1171) was the Field Director on September 7, 2021. Overall, assessment conditions were adequate and at no time was the archaeological assessment conducted when the field, weather, or lighting conditions were detrimental to the identification and recovery of archaeological resources. As part of the Stage 2 survey, Stantec archaeologists were joined by representatives from Aamjiwnaang First Nation, Chippewas of the Thames First Nation, and Walpole Island First Nation. Additional information regarding Indigenous engagement for the archaeological component of the Project can be found in the *Record of Indigenous Engagement* document associated with this report. The Record of Indigenous Engagement is a separate document submitted to the MHSTCI which may include who was engaged, engagement procedures, dates of engagement, strategies to incorporate community input, and processes for providing results to the community. Similar to sensitive information documented in the Supplementary Documentation (e.g., exact site location, UTM coordinates, etc.), the Record of Indigenous Engagement is provided as a separate document and does not form a part of the *Ontario Public Register of Archaeological Reports*.

Photographic documentation in Section 8.1 of this report confirms that field conditions met the requirements for a Stage 1-2 archaeological assessment, as per the MHSTCI's 2011 *Standards and Guidelines for Consultant Archaeologists* (Section 7.8.6 Standard 1.a; Government of Ontario 2011). An overview of the Stage 2 assessment methodology, as well as photograph locations and directions, is depicted on Figure 7 in Section 9.0 of this report.

Approximately 98.8% of the study area consists of active and ploughed agricultural field and was subject to pedestrian survey in accordance with Section 2.1.1 of the MHSTCI's 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011). Ground surface visibility during the pedestrian survey was greater than 80% and provided for adequate conditions for the identification of archaeological resources. Photographs illustrating the pedestrian survey of the study area are provided in Section 8.1.

During the pedestrian survey, when archaeological resources were identified, the survey transect was decreased to a one metre interval and spanned a minimum 20 metre radius around the identified artifact. This approach was used to determine if the artifact was an isolated find or part of a larger surface scatter, as per Section 2.1.1 Standard 7 of the MHSTCI's 2011 *Standards and Guidelines for Consultant*

Archaeologists (Government of Ontario 2011). The artifact was collected, and a Universal Transverse Mercator (UTM) coordinate was taken as per Section 2.1 Standard 4.a of the MHSTCI's 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011). The Stage 2 surface collection was conducted according to Stage 3 controlled surface pickup (CSP) standards, as allowed by the *Fieldwork: Stage 2 – Frequently Asked Questions* document issued by the MHSTCI (Government of Ontario 2016). If the identified archaeological resource comprised a single isolated find (see Section 3.0 for record of finds for each archaeological location), no further UTM coordinates were required or recorded. The UTM coordinates were taken using ArcGIS Collector powered by ESRI, customized for archaeological survey and assessment, on a handheld mobile device paired with an R1 Receiver to an accuracy of less than one metre. The UTM coordinates are located in zone 17T and are based upon the North American Datum 1983 (NAD83). A map illustrating the exact site locations and a listing of UTM coordinates recorded during the assessment are provided in the Supplementary Documentation to this report.

The remaining portion of the study area, approximately 1.2%, was identified as previously disturbed and included existing Enbridge infrastructure (i.e., gas wells and an access laneway) and the municipal road right-of-way (ROW) with extensive drainage ditching and buried utilities. This portion of the study area was not surveyed. While this portion of the study area was not surveyed, it was photographically documented in Section 8.1 to confirm that physical features affected the ability to survey portions of the study area in accordance with Section 7.8.6 Standard 1.b of the MHSTCI's 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011).

3.0 RECORD OF FINDS

The Stage 1-2 archaeological assessment was conducted employing the methods described in Section 2.0. An inventory of the documentary record generated by fieldwork is provided in Table 2. Four new archaeological locations were identified during the Stage 2 survey of the study area. In accordance with Section 7.12 of the MHSTCI's 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011), no Borden numbers were required for the identified archaeological locations. Maps illustrating exact site locations do not form part of this public report; they may be found in the Supplementary Documentation.

Table 2: Inventory of Documentary Record

Document Type	Current Location of Document Type	Additional Comments
2 pages of field notes	Stantec office, London, Ontario	In original field book and photocopied in project file
1 map provided by Enbridge	Stantec office, London, Ontario	Hard and digital copies in project file
23 digital photographs	Stantec office, London, Ontario	Stored digitally in project file

The material culture collected during the Stage 2 archaeological survey of the study area is contained in one Bankers box, labeled by location number and artifact type. The box will be temporarily housed at the Stantec London office until formal arrangements can be made for a transfer to a MHSTCI collections facility.

3.1 LOCATION 1

Location 1 was identified during the pedestrian survey of a ploughed agricultural field and comprises a single, isolated find of a chipped lithic knife manufactured from Kettle Point chert. The recovered artifact is illustrated on Plate 1 in Section 8.2.

Chert type identification was accomplished visually using reference materials located in the Stantec London office. Chert is a naturally occurring mineral found in sedimentary rocks that is a granular crystalline form of quartz, composed of cryptocrystalline and microcrystalline crystals (Eley and von Bitter 1989). Raw material acquisition and procurement strategies have long been theorized in academic literature. Some researchers suggest that raw material choices are purely utilitarian (e.g., Deller 1979; Ellis 1989; Parker 1986), while others suggest non-utilitarian reasons (e.g., Hall 1993; Simmons *et al.* 1984). Regardless of the reason, chert type identification and their respective quantities within a particular assemblage provide an opportunity to evaluate numerous archaeological variables, including group mobility and sedentism, lithic reduction strategy and technique, transportation, trade, and symbolism.

Kettle Point formation chert is from the Late Devonian age and is situated between the Kettle Point (Late Devonian shales) and the Ipperwash formations (Middle Devonian Limestone). It occurs as submerged outcrops that extend approximately 1,350 metres into Lake Huron (Janusas 1984). Secondary deposits have been reported in Essex County (Janusas 1984) and the Ausable Basin (Kenyon 1980; Eley and Von Bitter 1989). Kettle Point chert can be identified by the presence of a waxy lustre and occurs in a range of

colours including brown, grey and greenish colours as well as reddish purple and dark blue varieties (Eley and von Bitter 1989).

The chipped lithic knife recovered from Location 1 is bifacially worked and exhibits a higher angle flaking edge along one lateral margin than the obverse margin. The higher angle edge suggests use as a cutting edge. Overall, the knife measures 73.8 millimetres (mm) in length, 30.3 mm in width, and 11.5 mm in thickness.

3.1.1 Location 1 Artifact Catalogue

Table 3 provides the complete catalogue (Cat.) of the Stage 2 artifact assemblage recovered from Location 1.

Table 3: Location 1 Artifact Catalogue

Cat. #	Context	Artifact	Quantity	Chert	Comment
1	CSP 1	Knife	1	Kettle Point	Bifacially worked, with higher angle flaking on one lateral edge, hafting area broken and reworked; Length (L) =73.8* mm, Width (W) = 30.3 mm, Thickness (TH) = 11.5 mm.

* Measurement taken on an incomplete margin.

3.2 LOCATION 2

Location 2 was identified during the pedestrian survey of a ploughed agricultural field and comprises a single, isolated find of a chipped lithic projectile point manufactured from an indeterminate chert. The recovered artifact is illustrated on Plate 2 in Section 8.2.

The recovered projectile point is broken at the shoulder and base. The tip is rounded and may represent repair following an impact fracture. Due to the extensive damage, the projectile point cannot be typed or assigned to a general time period of use. Overall, the projectile point measures 47.8 mm in length, 30.2 mm in width, and 6.9 mm in thickness. The base is 26.3 mm in width, with a neck width of 20.0 mm and a haft height of 14.6 mm.

3.2.1 Location 2 Artifact Catalogue

Table 4 provides the complete catalogue (Cat.) of the Stage 2 artifact assemblage recovered from Location 2.

Table 4: Location 2 Artifact Catalogue

Cat. #	Context	Artifact	Quantity	Chert	Comment
1	CSP 1	Projectile point	1	Indeterminate	Broken shoulder and asymmetrically flaked base, unevenly side-notched, concave or notched base, triangular blade, chert is rough, light coloured; L = 47.8 mm, W = 30.2* mm, Th = 6.9 mm, base W = 26.3 mm, neck W = 20.0 mm, haft height = 14.6 mm.

* Measurement taken on an incomplete margin.

3.3 LOCATION 3

Location 3 was identified during the pedestrian survey of a ploughed agricultural field and comprises a single, isolated find of a chipped lithic projectile point manufactured from Kettle Point chert. The recovered artifact is illustrated on Plate 3 in Section 8.2.

The recovered projectile point is broken at the tip and base, and high angle retouch is evident on one lateral margin suggesting the projectile point was re-worked as a scraping or cutting edge. Due to the extensive damage, the projectile point cannot be typed or assigned to a general time period of use. Overall, the projectile point measures 67.2 mm in length, 30.5 mm in width, and 7.4 mm in thickness. The base is 20.6 mm in width, with a neck width of 21.8 mm and a haft height of 10.6 mm.

3.3.1 Location 3 Artifact Catalogue

Table 5 provides the complete catalogue (Cat.) of the Stage 2 artifact assemblage recovered from Location 3.

Table 5: Location 3 Artifact Catalogue

Cat. #	Context	Artifact	Quantity	Chert	Comment
1	CSP 1	Projectile point	1	Kettle Point	Broken tip and base; reworked lateral margin; L = 67.2* mm, W = 30.5 mm, TH = 7.4 mm, base W = 20.6* mm, neck W = 21.8 mm, haft height = 10.6 mm.

* Measurement taken on an incomplete margin.

3.4 LOCATION 4

Location 4 was identified during the pedestrian survey of a ploughed agricultural field and comprises a single, isolated find of a retouched flake of an indeterminate chert. The recovered artifact is illustrated on Plate 4 in Section 8.2.

Retouched flakes are fragments of chipping detritus that display intentional chipping or sharpening marks along their edges. Expedient tools, such as retouched flakes, cannot be used to determine the cultural affiliation or time period of the occupation of a site.

3.4.1 Location 4 Artifact Catalogue

Table 6 provides the complete catalogue (Cat.) of the Stage 2 artifact assemblage recovered from Location 4.

Table 6: Location 4 Artifact Catalogue

Cat. #	Context	Artifact	Quantity	Chert	Comment
1	CSP 1	Retouched flake	1	Kettle Point	Retouch along curved edge; other edges broken.

4.0 ANALYSIS AND CONCLUSIONS

Four new archaeological locations were identified during the Stage 2 survey of the study area for the Project.

4.1 LOCATION 1

The Stage 2 assessment of Location 1 resulted in the identification of a single isolated find, a chipped lithic knife made of Kettle Point chert. Chert knives are a most common Indigenous lithic tool and could be further refined into a variety of other tools with different functions. Due to the long span of use of knives, and other bifacial tools, they cannot be used to determine the cultural affiliation or time period of the occupation of a site. Given the temporally non-diagnostic nature and paucity of finds, the cultural heritage value or interest of Location 1 is judged to be sufficiently documented in accordance with Section 2.2 of the MHSTCI's 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011).

4.2 LOCATION 2

The Stage 2 assessment of Location 2 resulted in the identification of a single isolated find, a broken projectile point manufactured from an indeterminate chert. Due to the extensive damage of the recovered projectile point, it cannot be definitively typed or assigned to a time period of use. Given the temporally non-diagnostic nature and paucity of finds, the cultural heritage value or interest of Location 2 is judged to be sufficiently documented in accordance with Section 2.2 of the MHSTCI's 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011).

4.3 LOCATION 3

The Stage 2 assessment of Location 3 resulted in the identification of a single isolated find, a broken projectile point manufactured from Kettle Point chert. Due to the extensive damage of the recovered projectile point, it cannot be definitively typed or assigned to a time period of use. Given the temporally non-diagnostic nature and paucity of finds, the cultural heritage value or interest of Location 3 is judged to be sufficiently documented in accordance with Section 2.2 of the MHSTCI's 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011).

4.4 LOCATION 4

The Stage 2 assessment of Location 4 resulted in the identification of a single isolated find, a retouched flake of indeterminate chert. Expedient tools, such as retouched flakes, cannot be used to determine the cultural affiliation or time period of the occupation of a site. Given the temporally non-diagnostic nature and paucity of finds, the cultural heritage value or interest of Location 4 is judged to be sufficiently documented in accordance with Section 2.2 of the MHSTCI's 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011).

5.0 RECOMMENDATIONS

The Stage 1 archaeological assessment determined that the study area retained potential for the identification and recovery of archaeological resources. As such, Stage 2 archaeological assessment was required. Stage 2 archaeological assessment was completed on September 3, 2021 and September 7, 2021. Four new archaeological locations were identified during the Stage 2 survey.

5.1 LOCATION 1

Given the temporally non-diagnostic nature and paucity of finds, the cultural heritage value or interest of Location 1 is judged to be sufficiently documented in accordance with Section 2.2 of the MHSTCI's 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011). Thus, **no further archaeological assessment is recommended for Location 1.**

5.2 LOCATION 2

Given the temporally non-diagnostic nature and paucity of finds, the cultural heritage value or interest of Location 2 is judged to be sufficiently documented in accordance with Section 2.2 of the MHSTCI's 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011). Thus, **no further archaeological assessment is recommended for Location 2.**

5.3 LOCATION 3

Given the temporally non-diagnostic nature and paucity of finds, the cultural heritage value or interest of Location 3 is judged to be sufficiently documented in accordance with Section 2.2 of the MHSTCI's 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011). Thus, **no further archaeological assessment is recommended for Location 3.**

5.4 LOCATION 4

Given the temporally non-diagnostic nature and paucity of finds, the cultural heritage value or interest of Location 4 is judged to be sufficiently documented in accordance with Section 2.2 of the MHSTCI's 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011). Thus, **no further archaeological assessment is recommended for Location 4.**

5.5 SUMMARY

Four new archaeological locations were identified during the Stage 2 survey of the study area. No further archaeological assessment is recommended for Location 1, Location 2, Location 3, and Location 4. No other archaeological resources were identified during the Stage 2 survey of the study area. Thus, in accordance with Section 2.2 and Section 7.8.4 Standard 3 of the MHSTCI's 2011 *Standards and*

Guidelines for Consultant Archaeologists (Government of Ontario 2011), no further archaeological assessment of the surveyed portions of the study area is required.

The MHSTCI is asked to review the results presented and to accept this report into the *Ontario Public Register of Archaeological Reports*.

6.0 ADVICE ON COMPLIANCE WITH LEGISLATION

In accordance with Section 7.5.9 of the MHSTCI's 2011 Standards and Guidelines for Consultant Archaeologists (Government of Ontario 2011), the following standard statements are a required component of archaeological reporting and are provided verbatim from the MHSTCI's 2011 Standards and Guidelines for Consultant Archaeologists (Government of Ontario 2011).

This report is submitted to the Minister of Heritage, Sport, Tourism and Culture Industries as a condition of licensing in accordance with Part VI of the *Ontario Heritage Act*, R.S.O. 1990, c. O.18 (Government of Ontario 1990a). The report is reviewed to ensure that it complies with the standards and guidelines that are issued by the Minister, and that the archaeological fieldwork and report recommendations ensure the conservation, protection and preservation of the cultural heritage of Ontario. When all matters relating to archaeological sites within the project area of a development proposal have been addressed to the satisfaction of the Ministry of Heritage, Sport, Tourism and Culture Industries, a letter will be issued by the ministry stating that there are no further concerns with regard to alterations to archaeological sites by the proposed development.

It is an offence under Sections 48 and 69 of the *Ontario Heritage Act* (Government of Ontario 1990a) for any party other than a licensed archaeologist to make any alteration to a known archaeological site or to remove any artifact or other physical evidence of past human use or activity from the site, until such time as a licensed archaeologist has completed fieldwork on the site, submitted a report to the Minister stating that the site has no further cultural heritage value or interest, and the report has been filed in the *Ontario Public Register of Archaeological Reports* referred to in Section 65.1 of the *Ontario Heritage Act* (Government of Ontario 1990a).

Should previously undocumented archaeological resources be discovered, they may be a new archaeological site and therefore subject to Section 48(1) of the *Ontario Heritage Act* (Government of Ontario 1990a). The proponent or person discovering the archaeological resources must cease alteration of the site immediately and engage a licensed consultant archaeologist to carry out archaeological fieldwork, in compliance with Section 48(1) of the *Ontario Heritage Act* (Government of Ontario 1990a).

The *Funeral, Burial and Cremation Services Act*, 2002, S.O. 2002, c. 33 (Government of Ontario 2002), requires that any person discovering or having knowledge of a burial site shall immediately notify the police or coroner. It is recommended that the Registrar of Cemeteries at the Ministry of Government and Consumer Services is also immediately notified.

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8.0 IMAGES

8.1 PHOTOGRAPHS

Photo 1: View of study area, facing south



Photo 2: View of pedestrian survey, facing north



Photo 3: View of pedestrian survey, facing southeast



Photo 4: View of pedestrian survey, facing southeast



Photo 5: View of pedestrian survey, facing northwest



Photo 6: View of pedestrian survey, facing west



Photo 7: View of typical existing gas well within study area, facing northeast



Photo 8: View of existing municipal road ROW with extensive drainage ditching, facing southwest



8.2 PLATES

Plate 1: Artifact from Location 1



Knife,
Cat. #1



Plate 2: Artifact from Location 2



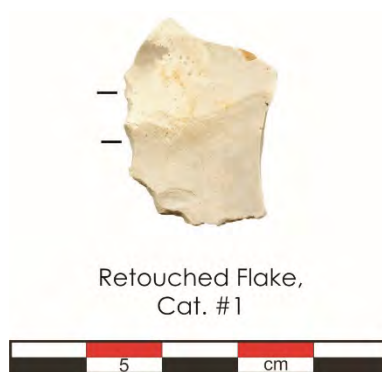
Projectile Point,
Cat. #1



Plate 3: Artifact from Location 3

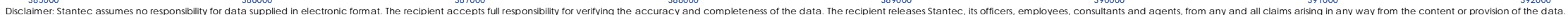


Plate 4: Artifact from Location 4

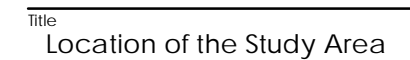
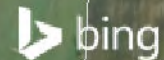


9.0 MAPS

General maps of the study area will follow on succeeding pages.



Location of the Project

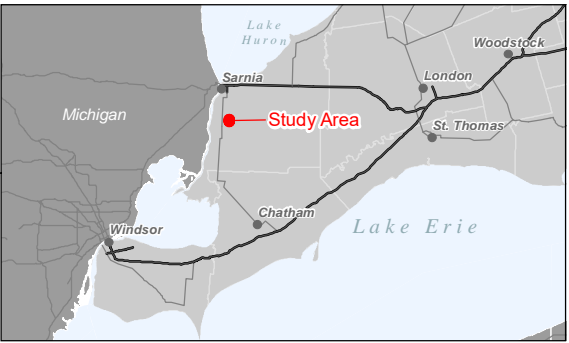




Legend

★ Project Location

- Notes
1. Not to Scale
 2. Government of Canada, n.d.a. Map of Treaty Areas in Upper Canada. Ottawa: Department of Indian Affairs, Survey Branch.



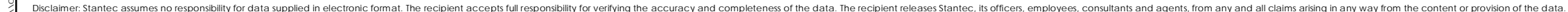
Project Location
Township of St. Clair

160961448
Prepared by PRM on 2021-10-20
Technical Review by PD on 2021-10-20

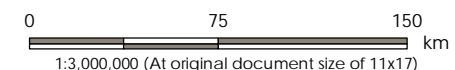
Client/Project
ENBRIDGE GAS INC.
COVENY AND KIMBALL-COLINVILLE WELL DRILLING
PROJECT, PROPOSED LOCATION OF TKC 68
STAGE 1-2 ARCHAEOLOGICAL ASSESSMENT

Figure No.
3

Title
Map of Treaty Areas in Upper Canada



- | | |
|----|---|
| A | Treaty No. 381, May 9th, 1781 (Mississauga and Chippewa) |
| B | Crawford's Purchase, October 9th, 1783 (Algonquin and Iroquois) |
| B1 | Crawford's Purchase, October 9th, 1783 (Mississauga) |
| B2 | Crawford's Purchases, 1784, 1787 And 1788 (Mississauga) |
| A2 | John Collins' Purchase, 1785 (Chippewa) |
| C | Treaty No. 2, May 19th, 1790 (Odawa, Chippewa, Pottawatomi, and Huron) |
| D | Treaty No. 3, December 2nd., 1792 (Mississauga) |
| E | Haldimand Tract:from the Crown to the Mohawk, 1793 |
| F | Tyendingana:from the Crown to the Mohawk, 1793 |
| G | Treaty No. 3 3/4:from the Crown to Joseph Brant, October 24th, 1795 |
| H | Treaty No. 5, May 22nd, 1798 (Chippewa) |
| I | Treaty No. 6, September 7th, 1796 (Chippewa) |
| J | Treaty No. 7, September 7th, 1796 (Chippewa) |
| L | Treaty No. 13, August 1st, 1805 (Mississauga) |
| M | Treaty No. 13A, August 2nd, 1805 (Mississauga) |
| N | Treaty No.16, November 18th, 1815 (Chippewa) |
| O | Treaty No. 18, October 17th, 1818 (Chippewa) |
| P | Treaty No. 19, October 28th 1818 (Chippewa) |
| Q | Treaty No. 20, November 5th, 1818 (Chippewa) |
| R | Treaty No. 21, March 9th, 1819 (Chippewa) |
| S | Treaty No. 27, May 31st, 1819 (Mississauga) |
| T | Treaty No. 27½, April 25th, 1825 (Ojibwa and Chippewa) |
| U | Treaty No. 35, August 13th, 1833 (Wyandot or Huron) |
| V | Treaty No. 45, August 9th, 1836 (Chippewa and Odawa, "For All Indians To Reside Thereon") |
| W | Treaty No. 45½, August 9th, 1836 (Saugeen) |
| X | Treaty No. 57, June 1st, 1847 (Iroquois of St. Regis) |
| Z | Treaty No. 61, September 9th, 1850 (Robinson Treaty:Ojibwa) |
| AA | Treaty No. 72, October 30th, 1854 (Chippewa) |
| AB | Treaty No. 82, February 9th, 1857 (Chippewa) |
| AF | Williams Treaty, October 31st and November 15th, 1923 (Chippewa and Mississauga) |
| AG | Williams Treaty, October 31st, 1923 (Chippewa) |



Notes

- Notes
1. Coordinate System: NAD 1983 Statistics Canada Lambert
 2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2021.
 3. Treaty boundaries adapted from Morris 1943 (1964 reprint).

Project Location 160961448
Township of St. Clair Prepared by PRM on 2021-10-20
Technical Review by PD on 2021-10-20

Client/Project
ENBRIDGE GAS INC.
COVENY AND KIMBALL-COLINVILLE WELL DRILLING
PROJECT, PROPOSED LOCATION OF TKC 68
STAGE 1-2 ARCHAEOLOGICAL ASSESSMENT

Figure No.

4

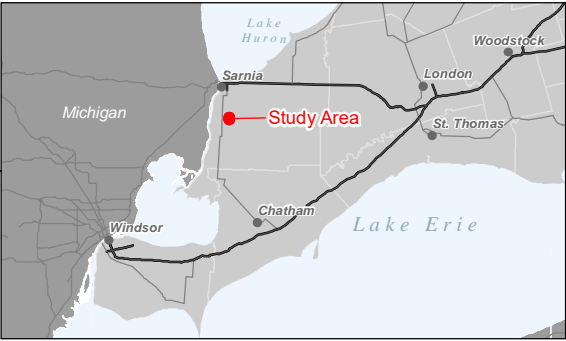
Title

Treaties and Purchases
(Adapted from Morris 1943)



Legend
 Study Area (Approximate)

Notes
1. Map is not to scale.
2. Historic map source: Mount, Roswell. 1829. Plan of Moore Township. Ministry of Natural Resources and Forestry, Crown Land Survey Records.



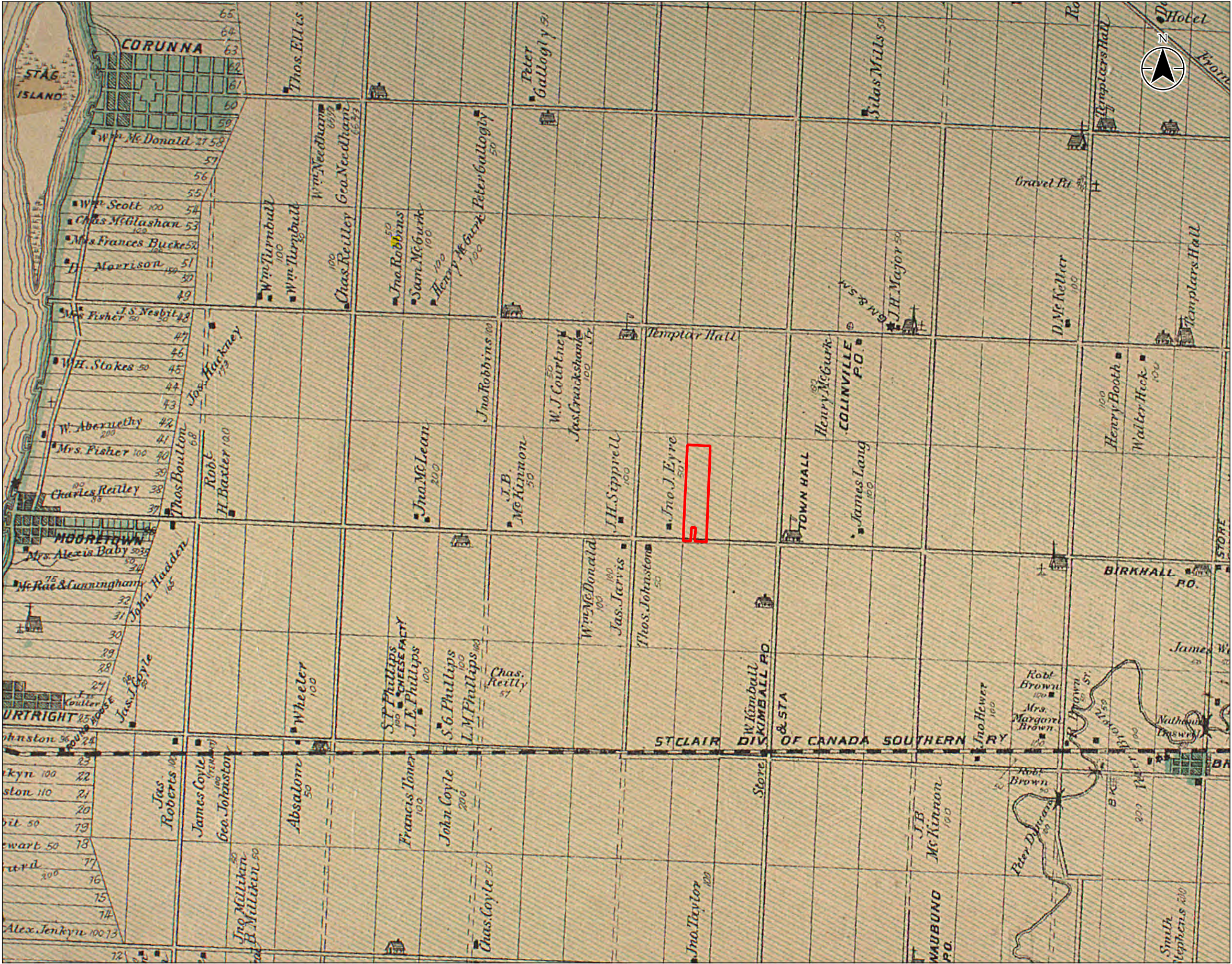
Project Location
Township of St. Clair
160961448
Prepared by PRM on 2021-10-22
Technical Review by PD on 2021-10-21

Client/Project
ENBRIDGE GAS INC.
COVENY AND KIMBALL-COLINVILLE WELL DRILLING
PROJECT, PROPOSED LOCATION OF TKC 68
STAGE 1-2 ARCHAEOLOGICAL ASSESSMENT

Figure No.
5

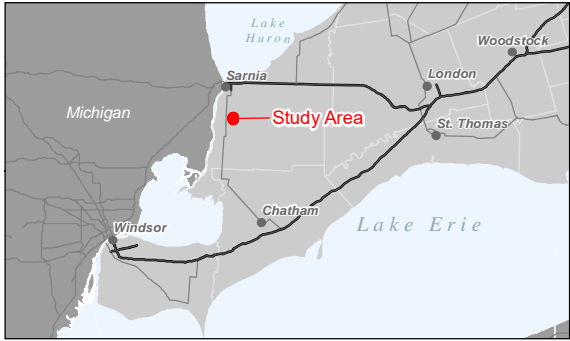
Title
Portion of the 1829 Plan of Moore Township

\\Ca0220-sphua\work_group\0160961448\03_data\gis_cad\gis\mxd\Archaeology\Report_Figures\Stage1-2\160961448_Stage1-2_Fig06_1880.mxd Reviewed: 2021-10-22 By: pmoiser



Legend
 Study Area (Approximate)

Notes
1. Map is not to scale.
2. Historic map source: Belden, H. 1880. Belden's Historical Atlas of the County of Lambton. H. Belden and Co.



Project Location
Township of St. Clair
160961448
Prepared by PRM on 2021-10-22
Technical Review by PD on 2021-10-21


Client/Project
ENBRIDGE GAS INC.
COVENY AND KIMBALL-COLINVILLE WELL DRILLING
PROJECT, PROPOSED LOCATION OF TKC 68
STAGE 1-2 ARCHAEOLOGICAL ASSESSMENT

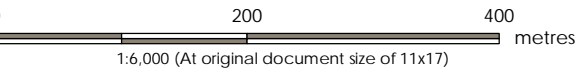
Figure No.
6
Title

Portion of the 1880 Map of Moore Township

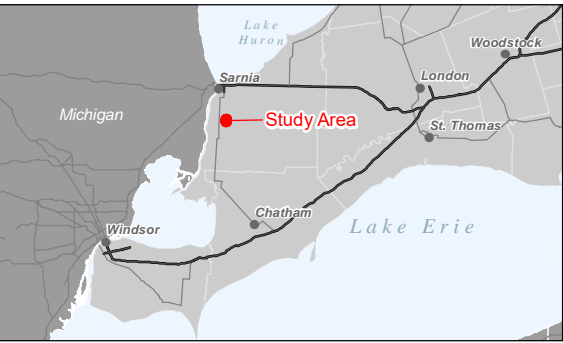


Legend

- Study Area (Approximate)
-  Photo Location and Direction
- Watercourse
- Archaeological Assessment
 - Pedestrian Survey, 5 m Intervals
 - Previously Disturbed, Low to No Archaeological Potential - No Further Archaeological Work Required



- Notes
1. Coordinate System: NAD 1983 UTM Zone 17N
 2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2021.
 3. Orthoimagery © © 2021 Microsoft Corporation © 2021 Maxar © CNES (2021) Distribution Airbus DS



Project Location: Township of St. Clair
160961448 REVA
Prepared by PRM on 2021-10-22
Technical Review by PD on 2021-10-22

Client/Project: ENBRIDGE GAS INC.
COVENY AND KIMBALL-COLINVILLE WELL DRILLING
PROJECT, PROPOSED LOCATION OF TKC 68
STAGE 1-2 ARCHAEOLOGICAL ASSESSMENT

Figure No.: 7

Title: Stage 1-2 Assessment Results

STAGE 1-2 ARCHAEOLOGICAL ASSESSMENT: COVENY AND KIMBALL-COLINVILLE WELL DRILLING, PROPOSED LOCATION OF TKC 68

Closure

10.0 CLOSURE

This report documents work that was performed in accordance with generally accepted professional standards at the time and location in which the services were provided. No other representations, warranties or guarantees are made concerning the accuracy or completeness of the data or conclusions contained within this report, including no assurance that this work has uncovered all potential archaeological resources associated with the identified property.

All information received from the client or third parties in the preparation of this report has been assumed by Stantec to be correct. Stantec assumes no responsibility for any deficiency or inaccuracy in information received from others.

Conclusions made within this report consist of Stantec's professional opinion as of the time of the writing of this report and are based solely on the scope of work described in the report, the limited data available and the results of the work. The conclusions are based on the conditions encountered by Stantec at the time the work was performed. Due to the nature of archaeological assessment, which consists of systematic sampling, Stantec does not warrant against undiscovered environmental liabilities nor that the sampling results are indicative of the condition of the entire property.

This report has been prepared for the exclusive use of the client identified herein and any use by any third party is prohibited. Stantec assumes no responsibility for losses, damages, liabilities or claims, howsoever arising, from third party use of this report. We trust this report meets your current requirements. Please do not hesitate to contact us should you require further information or have additional questions about any facet of this report.

Quality Review _____



Colin Varley
2021.10.22
14:20:25 -04'00'

(signature)

Colin Varley – Senior Archaeologist, Senior Associate

Independent Review _____



Tracie Carmichael
2021.10.22
14:21:31 -04'00'

(signature)

Tracie Carmichael – Managing Principal, Environmental Services



2026 Kimball-Colinville Well Drilling Project

Appendix E Cultural Heritage Memo: Kimball Replacement Wells TKC 71 Drilling Project

July 16, 2025

**Appendix E Cultural Heritage Memo: Kimball
Replacement Wells TKC 71 Drilling
Project**



To:	Enbridge Gas Ontario	From:	Frank Smith, MA, CAHP Stantec Consulting Ltd.
Project/File:	160901240	Date:	May 27, 2025

Reference: Cultural Heritage Memo: Kimball Replacement Wells TKC 71 Drilling Project

1 Introduction

Enbridge Gas Ontario (Enbridge Gas) is undertaking the Kimball Replacement Wells Project¹ (the Project), within the Township of St. Clair, County of Lambton, Ontario. The Project is required to offset the reduction in deliverability due to abandonment of wells TKC 29 and 36. The Project will include drilling an 8.5/8-inch NGS well (TKC 71) and installing approximately 50 metres of NPS8 lateral to the Mid Kimball gathering line (Plate 1). TKC 71 is located on part Lot 17, Concession 8, in the former Township of Moore, County of Lambton, Ontario. The property on which the Project is situated, is bounded to the north by Rokeby Line.

To facilitate this Project, Enbridge Gas retained Stantec to prepare a Cultural Heritage Memo for the Study Area. The need to consider known and potential built heritage resources and cultural heritage landscapes is defined by Section 4.3.4 of the *Ontario Energy Board (OEB) Environmental Guidelines for the Location, Construction and Operation of Hydrocarbon Projects and Facilities in Ontario* (OEB 2023).

The objectives of this Memo are to identify known and potential built heritage resources and cultural heritage landscapes within, adjacent to, or crossed by the Project Study Area. If identified, recommendations for subsequent cultural heritage studies, such as a *Cultural Heritage Report: Existing Conditions and Preliminary Impact Assessment* (CHR), *Cultural Heritage Evaluation Reports* (CHERs), or *Heritage Impact Assessments* (HIAs) are made. This Memo follows the *Criteria for Evaluating Potential for Built Heritage Resources and Cultural Heritage Landscapes: A Checklist for the Non-Specialist* (the Checklist) published by the Ministry of Citizenship and Multiculturalism (MCM) in 2016 and last updated in 2022 (MCM 2022). The results of the checklist for the entire Study Area are contained in Appendix A.

¹ The Kimball Replacement Wells Project also includes TKC 70. The property containing this well was previously screened for cultural heritage value or interest and no further consideration is given to TKC 70 in this memo.

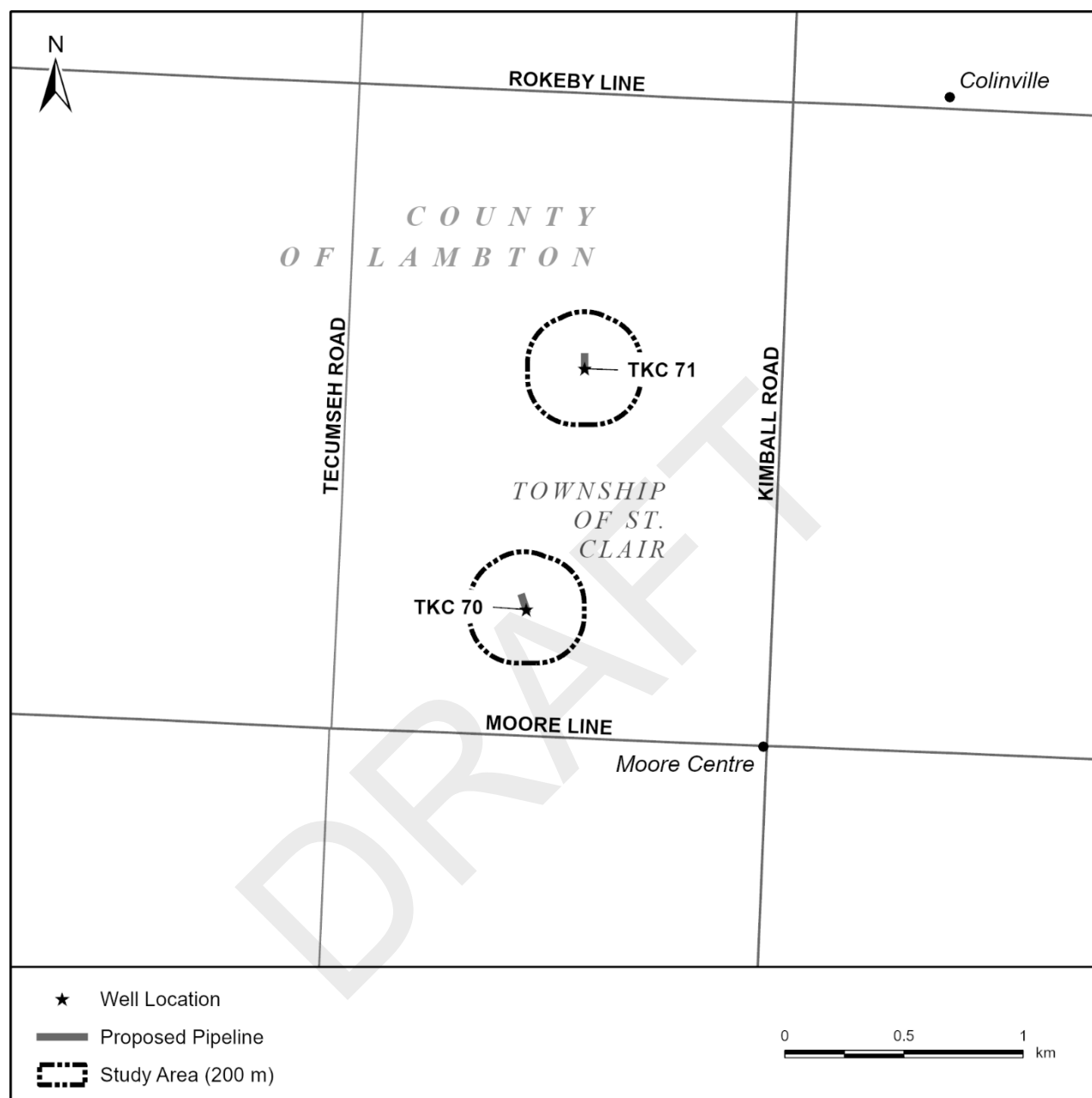


Plate 1: Location of TKC 70 and TKC 71

2 Methodology

The Memo comprises a community input program and a desktop review of available mapping, digital databases, and photography. The results of the desktop survey were used to complete the Checklist (MCM 2016). Information requests were conducted to determine the presence of known built heritage resources and cultural heritage landscapes. Community input included correspondence with the following:

- MCM
- Ontario Heritage Trust (OHT)
- Township of St. Clair

Digitized historical mapping and topographic mapping were reviewed to identify areas where potential built heritage resources and cultural heritage landscapes may be located. Mapping reviewed included:

- Belden, H. 1880. *Illustrated Historical Atlas of Lambton County*. Map of Moore Township. Toronto: H. Belden and Co. Map of Moore Township
- Department of Militia and Defence. 1912. *Topographic Map, Ontario, Sarnia Sheet*.
- Department of Militia and Defence. 1922. *Topographic Map, Ontario, Sarnia Sheet*.
- Department of National Defence. 1932. *Topographic Map, Ontario, Sarnia Sheet*.
- Department of National Defence. 1936. *Sarnia, Ontario*.
- Department of Mines and Technical Surveys. 1963. *Brigden, Lambton County, Ontario*. Ottawa: Map Distribution Office.
- Department of Mines and Technical Surveys. 1975. *Brigden, Lambton County, Ontario*. Ottawa: Map Distribution Office.

Present-day mapping and available online photography were also reviewed to identify potential built heritage resources and cultural heritage landscapes and confirm the location of known built heritage resources and cultural heritage landscapes, if applicable.

Alongside community input and a review of historical mapping, a desktop review of databases was completed, including:

- Parks Canada Directory of Federal Heritage Designations (Parks Canada 2025a)
- Parks Canada Canada's Historic Places (Parks Canada 2025b)
- OHT Plaque Database (OHT 2025)

- Ontario Trails Council Find a Trail (Ontario Trails Council 2025)
- Canada GenWeb Cemetery Find a Cemetery (Can GenWeb 2025a)
- Canadian Heritage Rivers Systems (CHRS) (CHRS 2025)
- The United Nations Educational, Scientific and Cultural Organization (UNESCO) World Heritage List (UNESCO 2025)

3 Desktop Review

The Study Area for TKC 71 is located on part of Lot 17, Concession 8, in the former Township of Moore, County of Lambton. Settlement of the Township of Moore began in the 1830s. The first settlers in the new Township of Moore were veterans of the Napoleonic Wars who often received riverfront lots for their service to the Crown. Other large land grants in the township included grants to the children of United Empire Loyalists. Settlement in the back concessions of the township, including within the Study Area, was impeded by poor drainage. During the late 19th century, concerted efforts were made to improve drainage and arability within the township (Elford 1982; Belden 1880).

Lot 17, Concession 8 was granted by the Crown to John Lewis Fralick (Ontario Land Registry Access [OnLand] 2025). He was likely the son of a Loyalist family from New York that settled in Lennox and Addington County, Ontario (Buchanan 2024). Based on this, it is likely that this lot was held in speculation and remained unsettled until it was divided into west and east halves in 1849 (OnLand 2025).

Historical mapping from 1880 does not depict any owners or structures on Lot 17, Concession 8 (Belden 1880). Mapping from this period often only included structures and landowners who subscribed to the *Dominion Atlas* in which these illustrated historical township maps were added as a supplement (Caston 1997; Gentilcore 1984).

Topographic mapping from 1912 depicts a structure at the approximate location of the present-day residence on the adjacent property parcel at 1357 Rokeby Line. The mapping also depicts a cemetery adjacent to the Study Area at the northeast corner of Lot 17, Concession 8. This cemetery is known as the “Smith and White Cemetery” and contains approximately 13 markers dating to between 1888 and 1907 (Canada GenWeb Cemetery Project 2025b). Based on Google Streetview Photography, these markers have been placed into a cement cairn. The residence and cemetery remain present on topographic mapping from 1922, 1932, and 1936 (Department of Militia Defence 1922; Department of National Defence 1932 and 1936).

Topographic mapping from 1963 no longer depicts a structure at the present-day location of 1357 Rokeby Line or depicts the cemetery. The mapping depicts an unpaved road matching the approximate alignment of the existing access road on the property as well as a series of oil and gas wells (Department of Mines and Technical Surveys 1963). Based on topographic mapping, the present-day residence at 1357 Rokeby Line was built *circa* 1964, on a severed parcel of part Lot 17, Concession 8. This is consistent with the style of the residence based on a review of Google Streetview photography. Topographic mapping from 1975 continues to depict the residence, access road, and oil and gas wells (Department of Mines and Technical

Surveys 1975). While on part Lot 17, Concession 8, the residence at 1357 Rokeby Line is on a separate parcel outside of the Study Area.

4 Information Requests

Consultation occurred via email and included mapping of the Study Area. The results are summarized in Table 1.

Table 1 Municipal and Agency Information Results

Organization	Contact	Results
OHT	Samuel Bayefsky, Real Property Coordinator samuel.bayefsky@heritagetrust.on.ca	Information request sent on May 13, 2025, to Samuel Bayefsky, Real Property Coordinator at the Ontario Heritage Trust. A response was received from Samuel Bayefsky the same day. His email confirmed that the OHT neither owns nor protects via conservation easement properties within or immediately adjacent to the Study Area.
MCM	registrar@ontario.ca	Information request sent on May 13, 2025. Mariana Nito, Heritage Advisor, responded on May 16, 2025 that to date no properties within or adjacent to the Study Area have been designated by the Minister and MCM has no records of a provincial heritage property within or adjacent to the Study Area.
Township of St. Clair	Carlie Clemens, Deputy Clerk/Coordinator of Planning	Information request sent on May 13, 2025. Carlie McClemens, Deputy Clerk/Coordinator of Planning responded on May 22, 2025, that the Township does not maintain a municipal heritage register. Therefore, the Study Area contains no heritage designations, easements, or heritage by-laws.

5 Recommendations

The Study Area met one indicator of cultural heritage value or interest on the MCM Checklist, for the “Smith and White Cemetery.” However, this cemetery is located adjacent to the Study Area over one kilometre northeast of the proposed construction activity associated with TKC 71. Therefore, no potential for direct or indirect impacts to the cemetery is anticipated. Based on this understanding, no further cultural heritage studies are recommended for TKC 71.

6 Closure

This memorandum has been prepared for the sole benefit of Enbridge Gas Ontario and may not be used by any third party without the express written consent of Stantec Consulting Ltd. and Enbridge Gas Ontario.

We trust this memo meets your current requirements. Please do not hesitate to contact us should you require further information or have additional questions about any facet of this report.

Sincerely,

Stantec Consulting Ltd.

Frank J. Smith MA, CAHP
Cultural Heritage Specialist
Phone: (226) 448-7417
frank.smith@stantec.com

Laura Walter MA, CAHP
Cultural Heritage Specialist
Phone: (226) 962-6017
laura.walter@stantec.com

Attachment:
Attachment A MCM Checklist

7 References

- Belden, H. 1880. *Illustrated Historical Atlas of Lambton County*. Map of Moore Township. Toronto: H. Belden and Co.
- Buchanan, Dan. 2024. *Trees By Dan, Person Page 873, John Lewis Fralick*. Electronic Document: <https://treesbydan.com/p873.htm>. Last Accessed: May 13, 2025.
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Parks Canada. 2025. *Canada's Historic Places*. Electronic Document: <https://www.historicplaces.ca/en/home-accueil.aspx>. Last Accessed: May 13, 2025.

UNESCO. 2023. *World Heritage List*. Electronic Document: <https://whc.unesco.org/en/list/>. Last Accessed: May 13, 2025.

Attachment A MCM Checklist

DRAFT



**Ministry of Tourism,
Culture and Sport**
Programs & Services Branch
401 Bay Street, Suite 1700
Toronto ON M7A 0A7

Criteria for Evaluating Potential for Built Heritage Resources and Cultural Heritage Landscapes A Checklist for the Non-Specialist

The **purpose of the checklist** is to determine:

- if a property(ies) or project area:
 - is a recognized heritage property
 - may be of cultural heritage value
- it includes all areas that may be impacted by project activities, including – but not limited to:
 - the main project area
 - temporary storage
 - staging and working areas
 - temporary roads and detours

Processes covered under this checklist, such as:

- *Planning Act*
- *Environmental Assessment Act*
- *Aggregates Resources Act*
- *Ontario Heritage Act* – Standards and Guidelines for Conservation of Provincial Heritage Properties

Cultural Heritage Evaluation Report (CHER)

If you are not sure how to answer one or more of the questions on the checklist, you may want to hire a qualified person(s) (see page 5 for definitions) to undertake a cultural heritage evaluation report (CHER).

The CHER will help you:

- identify, evaluate and protect cultural heritage resources on your property or project area
- reduce potential delays and risks to a project

Other checklists

Please use a separate checklist for your project, if:

- you are seeking a Renewable Energy Approval under Ontario Regulation 359/09 – [separate checklist](#)
- your Parent Class EA document has an approved screening criteria (as referenced in Question 1)

Please refer to the Instructions pages for more detailed information and when completing this form.

Project or Property Name

Kimball Replacement Wells TKC 71 Drilling Project

Project or Property Location (upper and lower or single tier municipality)

Township of St. Clair, Lambton County

Proponent Name

Enbridge Gas Ontario

Proponent Contact Information

Screening Questions

	Yes	No
1. Is there a pre-approved screening checklist, methodology or process in place?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

If Yes, please follow the pre-approved screening checklist, methodology or process.

If No, continue to Question 2.

Part A: Screening for known (or recognized) Cultural Heritage Value

	Yes	No
2. Has the property (or project area) been evaluated before and found not to be of cultural heritage value?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

If Yes, do **not** complete the rest of the checklist.

The proponent, property owner and/or approval authority will:

- summarize the previous evaluation and
- add this checklist to the project file, with the appropriate documents that demonstrate a cultural heritage evaluation was undertaken

The summary and appropriate documentation may be:

- submitted as part of a report requirement
- maintained by the property owner, proponent or approval authority

If No, continue to Question 3.

	Yes	No
3. Is the property (or project area):		
a. identified, designated or otherwise protected under the <i>Ontario Heritage Act</i> as being of cultural heritage value?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. a National Historic Site (or part of)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. designated under the <i>Heritage Railway Stations Protection Act</i> ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d. designated under the <i>Heritage Lighthouse Protection Act</i> ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e. identified as a Federal Heritage Building by the Federal Heritage Buildings Review Office (FHBRO)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f. located within a United Nations Educational, Scientific and Cultural Organization (UNESCO) World Heritage Site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

If Yes to any of the above questions, you need to hire a qualified person(s) to undertake:

- a Cultural Heritage Evaluation Report, if a Statement of Cultural Heritage Value has not previously been prepared or the statement needs to be updated

If a Statement of Cultural Heritage Value has been prepared previously and if alterations or development are proposed, you need to hire a qualified person(s) to undertake:

- a Heritage Impact Assessment (HIA) – the report will assess and avoid, eliminate or mitigate impacts

If No, continue to Question 4.

Part B: Screening for Potential Cultural Heritage Value

	Yes	No
4. Does the property (or project area) contain a parcel of land that:		
a. is the subject of a municipal, provincial or federal commemorative or interpretive plaque?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. has or is adjacent to a known burial site and/or cemetery?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. is in a Canadian Heritage River watershed?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d. contains buildings or structures that are 40 or more years old?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Part C: Other Considerations

	Yes	No
5. Is there local or Aboriginal knowledge or accessible documentation suggesting that the property (or project area):		
a. is considered a landmark in the local community or contains any structures or sites that are important in defining the character of the area?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. has a special association with a community, person or historical event?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. contains or is part of a cultural heritage landscape?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

If Yes to one or more of the above questions (Part B and C), there is potential for cultural heritage resources on the property or within the project area.

You need to hire a qualified person(s) to undertake:

- a Cultural Heritage Evaluation Report (CHER)

If the property is determined to be of cultural heritage value and alterations or development is proposed, you need to hire a qualified person(s) to undertake:

- a Heritage Impact Assessment (HIA) – the report will assess and avoid, eliminate or mitigate impacts

If No to all of the above questions, there is low potential for built heritage or cultural heritage landscape on the property.

The proponent, property owner and/or approval authority will:

- summarize the conclusion
- add this checklist with the appropriate documentation to the project file

The summary and appropriate documentation may be:

- submitted as part of a report requirement e.g. under the *Environmental Assessment Act*, *Planning Act* processes
- maintained by the property owner, proponent or approval authority

Instructions

Please have the following available, when requesting information related to the screening questions below:

- a clear map showing the location and boundary of the property or project area
 - large scale and small scale showing nearby township names for context purposes
- the municipal addresses of all properties within the project area
- the lot(s), concession(s), and parcel number(s) of all properties within a project area

For more information, see the Ministry of Tourism, Culture and Sport's [Ontario Heritage Toolkit](#) or [Standards and Guidelines for Conservation of Provincial Heritage Properties](#).

In this context, the following definitions apply:

- **qualified person(s)** means individuals – professional engineers, architects, archaeologists, etc. – having relevant, recent experience in the conservation of cultural heritage resources.
- **proponent** means a person, agency, group or organization that carries out or proposes to carry out an undertaking or is the owner or person having charge, management or control of an undertaking.

1. Is there a pre-approved screening checklist, methodology or process in place?

An existing checklist, methodology or process may already be in place for identifying potential cultural heritage resources, including:

- one endorsed by a municipality
- an environmental assessment process e.g. screening checklist for municipal bridges
- one that is approved by the Ministry of Tourism, Culture and Sport (MTCS) under the Ontario government's [Standards & Guidelines for Conservation of Provincial Heritage Properties](#) [s.B.2.]

Part A: Screening for known (or recognized) Cultural Heritage Value

2. Has the property (or project area) been evaluated before and found not to be of cultural heritage value?

Respond 'yes' to this question, if all of the following are true:

A property can be considered not to be of cultural heritage value if:

- a Cultural Heritage Evaluation Report (CHER) - or equivalent - has been prepared for the property with the advice of a qualified person and it has been determined not to be of cultural heritage value and/or
- the municipal heritage committee has evaluated the property for its cultural heritage value or interest and determined that the property is not of cultural heritage value or interest

A property may need to be re-evaluated, if:

- there is evidence that its heritage attributes may have changed
- new information is available
- the existing Statement of Cultural Heritage Value does not provide the information necessary to manage the property
- the evaluation took place after 2005 and did not use the criteria in Regulations 9/06 and 10/06

Note: Ontario government ministries and public bodies [prescribed under Regulation 157/10] may continue to use their existing evaluation processes, until the evaluation process required under section B.2 of the Standards & Guidelines for Conservation of Provincial Heritage Properties has been developed and approved by MTCS.

To determine if your property or project area has been evaluated, contact:

- the approval authority
- the proponent
- the Ministry of Tourism, Culture and Sport

3a. Is the property (or project area) identified, designated or otherwise protected under the *Ontario Heritage Act* as being of cultural heritage value e.g.:

- designated under the *Ontario Heritage Act*
 - individual designation (Part IV)
 - part of a heritage conservation district (Part V)

Individual Designation – Part IV

A property that is designated:

- by a municipal by-law as being of cultural heritage value or interest [s.29 of the *Ontario Heritage Act*]
- by order of the Minister of Tourism, Culture and Sport as being of cultural heritage value or interest of provincial significance [s.34.5]. **Note:** To date, no properties have been designated by the Minister.

Heritage Conservation District – Part V

A property or project area that is located within an area designated by a municipal by-law as a heritage conservation district [s. 41 of the *Ontario Heritage Act*].

For more information on Parts IV and V, contact:

- municipal clerk
- [Ontario Heritage Trust](#)
- local land registry office (for a title search)

ii. subject of an agreement, covenant or easement entered into under Parts II or IV of the *Ontario Heritage Act*

An agreement, covenant or easement is usually between the owner of a property and a conservation body or level of government. It is usually registered on title.

The primary purpose of the agreement is to:

- preserve, conserve, and maintain a cultural heritage resource
- prevent its destruction, demolition or loss

For more information, contact:

- [Ontario Heritage Trust](#) - for an agreement, covenant or easement [clause 10 (1) (c) of the *Ontario Heritage Act*]
- municipal clerk – for a property that is the subject of an easement or a covenant [s.37 of the *Ontario Heritage Act*]
- local land registry office (for a title search)

iii. listed on a register of heritage properties maintained by the municipality

Municipal registers are the official lists - or record - of cultural heritage properties identified as being important to the community.

Registers include:

- all properties that are designated under the *Ontario Heritage Act* (Part IV or V)
- properties that have not been formally designated, but have been identified as having cultural heritage value or interest to the community

For more information, contact:

- municipal clerk
- municipal heritage planning staff
- municipal heritage committee

iv. subject to a notice of:

- intention to designate (under Part IV of the *Ontario Heritage Act*)
- a Heritage Conservation District study area bylaw (under Part V of the *Ontario Heritage Act*)

A property that is subject to a **notice of intention to designate** as a property of cultural heritage value or interest and the notice is in accordance with:

- section 29 of the *Ontario Heritage Act*
- section 34.6 of the *Ontario Heritage Act*. **Note:** To date, the only applicable property is Meldrum Bay Inn, Manitoulin Island. [s.34.6]

An area designated by a municipal by-law made under section 40.1 of the *Ontario Heritage Act* as a **heritage conservation district study area**.

For more information, contact:

- municipal clerk – for a property that is the subject of notice of intention [s. 29 and s. 40.1]
- [Ontario Heritage Trust](#)

v. included in the Ministry of Tourism, Culture and Sport's list of provincial heritage properties

Provincial heritage properties are properties the Government of Ontario owns or controls that have cultural heritage value or interest.

The Ministry of Tourism, Culture and Sport (MTCS) maintains a list of all provincial heritage properties based on information provided by ministries and prescribed public bodies. As they are identified, MTCS adds properties to the list of provincial heritage properties.

For more information, contact the MTCS Registrar at registrar@ontario.ca.

3b. Is the property (or project area) a National Historic Site (or part of)?

National Historic Sites are properties or districts of national historic significance that are designated by the Federal Minister of the Environment, under the *Canada National Parks Act*, based on the advice of the Historic Sites and Monuments Board of Canada.

For more information, see the [National Historic Sites website](#).

3c. Is the property (or project area) designated under the *Heritage Railway Stations Protection Act*?

The *Heritage Railway Stations Protection Act* protects heritage railway stations that are owned by a railway company under federal jurisdiction. Designated railway stations that pass from federal ownership may continue to have cultural heritage value.

For more information, see the [Directory of Designated Heritage Railway Stations](#).

3d. Is the property (or project area) designated under the *Heritage Lighthouse Protection Act*?

The *Heritage Lighthouse Protection Act* helps preserve historically significant Canadian lighthouses. The Act sets up a public nomination process and includes heritage building conservation standards for lighthouses which are officially designated.

For more information, see the [Heritage Lighthouses of Canada](#) website.

3e. Is the property (or project area) identified as a Federal Heritage Building by the Federal Heritage Buildings Review Office?

The role of the Federal Heritage Buildings Review Office (FHBRO) is to help the federal government protect the heritage buildings it owns. The policy applies to all federal government departments that administer real property, but not to federal Crown Corporations.

For more information, contact the [Federal Heritage Buildings Review Office](#).

See a [directory of all federal heritage designations](#).

3f. Is the property (or project area) located within a United Nations Educational, Scientific and Cultural Organization (UNESCO) World Heritage Site?

A UNESCO World Heritage Site is a place listed by UNESCO as having outstanding universal value to humanity under the Convention Concerning the Protection of the World Cultural and Natural Heritage. In order to retain the status of a World Heritage Site, each site must maintain its character defining features.

Currently, the Rideau Canal is the only World Heritage Site in Ontario.

For more information, see Parks Canada – [World Heritage Site website](#).

Part B: Screening for potential Cultural Heritage Value

4a. Does the property (or project area) contain a parcel of land that has a municipal, provincial or federal commemorative or interpretive plaque?

Heritage resources are often recognized with formal plaques or markers.

Plaques are prepared by:

- municipalities
- provincial ministries or agencies
- federal ministries or agencies
- local non-government or non-profit organizations

For more information, contact:

- [municipal heritage committees](#) or local heritage organizations – for information on the location of plaques in their community
- Ontario Historical Society's [Heritage directory](#) – for a list of historical societies and heritage organizations
- Ontario Heritage Trust – for a [list of plaques](#) commemorating Ontario's history
- Historic Sites and Monuments Board of Canada – for a [list of plaques](#) commemorating Canada's history

4b. Does the property (or project area) contain a parcel of land that has or is adjacent to a known burial site and/or cemetery?

For more information on known cemeteries and/or burial sites, see:

- Cemeteries Regulations, Ontario Ministry of Consumer Services – for a [database of registered cemeteries](#)
- Ontario Genealogical Society (OGS) – to [locate records of Ontario cemeteries](#), both currently and no longer in existence; cairns, family plots and burial registers
- Canadian County Atlas Digital Project – to [locate early cemeteries](#)

In this context, adjacent means contiguous or as otherwise defined in a municipal official plan.

4c. Does the property (or project area) contain a parcel of land that is in a Canadian Heritage River watershed?

The Canadian Heritage River System is a national river conservation program that promotes, protects and enhances the best examples of Canada's river heritage.

Canadian Heritage Rivers must have, and maintain, outstanding natural, cultural and/or recreational values, and a high level of public support.

For more information, contact the [Canadian Heritage River System](#).

If you have questions regarding the boundaries of a watershed, please contact:

- your conservation authority
- municipal staff

4d. Does the property (or project area) contain a parcel of land that contains buildings or structures that are 40 or more years old?

A 40 year 'rule of thumb' is typically used to indicate the potential of a site to be of cultural heritage value. The approximate age of buildings and/or structures may be estimated based on:

- history of the development of the area
- fire insurance maps
- architectural style
- building methods

Property owners may have information on the age of any buildings or structures on their property. The municipality, local land registry office or library may also have background information on the property.

Note: 40+ year old buildings or structure do not necessarily hold cultural heritage value or interest; their age simply indicates a higher potential.

A building or structure can include:

- residential structure
- farm building or outbuilding
- industrial, commercial, or institutional building
- remnant or ruin
- engineering work such as a bridge, canal, dams, etc.

For more information on researching the age of buildings or properties, see the Ontario Heritage Tool Kit Guide [Heritage Property Evaluation](#).

Part C: Other Considerations

5a. Is there local or Aboriginal knowledge or accessible documentation suggesting that the property (or project area) is considered a landmark in the local community or contains any structures or sites that are important to defining the character of the area?

Local or Aboriginal knowledge may reveal that the project location is situated on a parcel of land that has potential landmarks or defining structures and sites, for instance:

- buildings or landscape features accessible to the public or readily noticeable and widely known
- complexes of buildings
- monuments
- ruins

5b. Is there local or Aboriginal knowledge or accessible documentation suggesting that the property (or project area) has a special association with a community, person or historical event?

Local or Aboriginal knowledge may reveal that the project location is situated on a parcel of land that has a special association with a community, person or event of historic interest, for instance:

- Aboriginal sacred site
- traditional-use area
- battlefield
- birthplace of an individual of importance to the community

5c. Is there local or Aboriginal knowledge or accessible documentation suggesting that the property (or project area) contains or is part of a cultural heritage landscape?

Landscapes (which may include a combination of archaeological resources, built heritage resources and landscape elements) may be of cultural heritage value or interest to a community.

For example, an Aboriginal trail, historic road or rail corridor may have been established as a key transportation or trade route and may have been important to the early settlement of an area. Parks, designed gardens or unique landforms such as waterfalls, rock faces, caverns, or mounds are areas that may have connections to a particular event, group or belief.

For more information on Questions 5.a., 5.b. and 5.c., contact:

- Elders in Aboriginal Communities or community researchers who may have information on potential cultural heritage resources. Please note that Aboriginal traditional knowledge may be considered sensitive.
- [municipal heritage committees](#) or local heritage organizations
- Ontario Historical Society's "[Heritage Directory](#)" - for a list of historical societies and heritage organizations in the province

An internet search may find helpful resources, including:

- historical maps
- historical walking tours
- municipal heritage management plans
- cultural heritage landscape studies
- municipal cultural plans

Information specific to trails may be obtained through [Ontario Trails](#).

2026 Kimball-Colinville Wells Drilling Project: Environmental Report
Appendix A Consultation Materials
November 7, 2025

**Appendix A.5 Virtual Information Session Boards and
Questionnaire**





2026 Kimball Colinville Well Drilling Project Information Session Questionnaire



Thank you for attending the 2026 Kimball Colinville Well Drilling Project Information Session! We hope the session was informative and we would appreciate your comments and feedback. If you require any assistance or clarification while completing this questionnaire, please send an email to **2026KimballColinvilleWellDrilling@stantec.com**. If you have a question that requires a response, please fill out the **Contact Information** section at the end of this form and a representative will respond as soon as possible.

Please complete this questionnaire by **August 26, 2025** for feedback to be considered as part of the Environmental Report submitted to the Ontario Energy Board (OEB). Your feedback is important and will also be considered during the planning and permitting stages of the project.

1. What is your interest in this project?

- ☐ Directly affected landowner
- ☐ Member of an Indigenous community
- ☐ Business owner
- ☐ Surrounding landowner
- ☐ Interested citizen
- ☐ Member of interest group
- ☐ Government official
- ☐ Other: _____

2. What is your view of the proposed project?

3. Please indicate if the project will have any potential impacts to you, your property, or your business that you would like addressed (i.e., access, noise, dust, traffic, etc.).

4. Please identify any features in the study area you feel are important to consider during the Environmental Study.



2026 Kimball Colinville Well Drilling Project Information Session Questionnaire



5. **Were you provided with an adequate understanding of the project as well as the Environmental Assessment OEB review and approval process?**

☐ Yes

☐ No

6. **Do you require additional information about the project and/or OEB Environmental Report process? Please note below:**

7. **Did the content provided in the Information Session meet your needs?**

8. **How did you hear about the Information Session? Check all that apply:**

☐ Project Notification Letter

☐ Word of Mouth

☐ Social Media Post

9. **Do you have any questions or comments about this project, not addressed above, you would like to bring to our attention?**



2026 Kimball Colinville Well Drilling Project Information Session Questionnaire



Thank you for completing this questionnaire. If you would like to be informed of project updates, please provide us with your full contact information. If you have a question about the project that has not been addressed or for which you would like more information, please email us at:

2026KimballColinvilleWellDrilling@stantec.com Alternatively, questionnaires can be mailed to **1331 Clyde Avenue. #300. Ottawa, ON. K2C 3G4. Attention to: Shelby Gibson**

Contact Information	
Name:	
Address:	
Email:	
Phone:	()

Any personal information (PI), such as names and addresses, collected by Enbridge Gas Inc. (EGI) on this comment form (or through the Information Session process) for this project will be used for the purpose of conducting an environmental assessment and related activities, such as creating an environmental assessment report. EGI may also share PI with its consultant(s) for this purpose and will share PI with the OEB and other government agencies as required for the project. In accordance with the Ontario Freedom of Information and Protection of Privacy Act, PI provided to the OEB will not be disclosed on the public record or to any third parties. However, comments, questions and other information collected may be disclosed on the public record provided that any PI will be redacted.



2026 Kimball-Colinville Well Drilling Project

Virtual Information Session

July 23 – August 8, 2025



2026 Kimball-Colinville Well Drilling Project Information Session



Welcome

Press the next button to navigate to the next slide at any time.

- To return to the previous slide, press the previous button.
- You can mute the audio at any time by pressing the speaker icon.
- The presentation slides, as well as the audio script, are available for download (see the Resources tab in the top right corner).
- Questions and comments can be submitted using the questionnaire found in the Resources tab.
- If you would like to receive future project updates, please complete the "Contact Information" section of the questionnaire.



2026 Kimball-Colinville Well Drilling Project Information Session



Enbridge Gas' Commitment

Enbridge Gas Inc. doing business as Enbridge Gas Ontario (Enbridge Gas) is dedicated to engaging with Indigenous communities, agencies, interest groups, and community members. It commits to providing up-to-date information in an open, honest, and respectful manner while carefully considering your input. With over 3.9 million residential, commercial, and industrial customers, Enbridge Gas is committed to delivering natural gas safely and reliably. Environmental stewardship is also a top priority for Enbridge Gas, and it conducts its operations in an environmentally responsible manner.



2026 Kimball-Colinville Well Drilling Project Information Session



Purpose of the Information Session

- Consult with Indigenous communities and engage with members of the public and regulatory authorities about the proposed Project, its potential impacts, and proposed mitigation measures.
- Provide an opportunity for these individuals and the public to review the proposed project, ask questions, and/or provide comments to representatives from Enbridge Gas and Stantec.

2026 Kimball-Colinville Well Drilling Project Information Session



Enbridge Gas' Engagement with Indigenous Peoples

Enbridge Gas recognizes the diversity of Indigenous peoples who live where we work and operate. We understand that certain laws and policies have had destructive impacts on Indigenous cultures, languages, and the social and economic well-being of Indigenous peoples. We also recognize the importance of reconciliation between Indigenous peoples and broader society. We are committed to building positive and sustainable relationships with Indigenous peoples based on trust and respect and are focused on finding common goals through open dialogue.

The Indigenous engagement program is based on adherence to the Ontario Energy Boards's (OEB) Guidelines and Enbridge Inc.'s company-wide Indigenous Peoples Policy, which Enbridge Gas follows. Enbridge's Indigenous Peoples Policy lays out key principles for establishing relationships with Indigenous groups, including:

- Recognizing the importance of the United Nations Declaration on the Rights of Indigenous Peoples in the context of existing Canadian law;
- Recognizing the legal and constitutional rights possessed by Indigenous peoples in Canada and the importance of the relationship between Indigenous peoples and their traditional lands and resources;
- Engaging early to achieve meaningful relationships with Indigenous groups by providing timely exchanges of information, understanding and addressing Indigenous project-specific concerns, and ensuring ongoing dialogue regarding its projects, their potential impacts and benefits; and
- Aligning Enbridge's interests with those of Indigenous peoples through meaningful, direct Indigenous economic activity in projects corresponding to community capacity and project needs, where possible.



2026 Kimball-Colinville Well Drilling Project Information Session



Project Overview

The 2026 Kimball-Colinville Well Drilling Project is proposing to replace deliverability due to well abandonment in the Township of St. Clair, in the County of Lambton, to continue to provide residents, businesses, and industries located in the Project area with safe, reliable natural gas services. The Project involves drilling two new storage wells in the Kimball-Colinville Designated Storage Area, and will include temporary drill pads, permanent well pads, and new lateral lines.

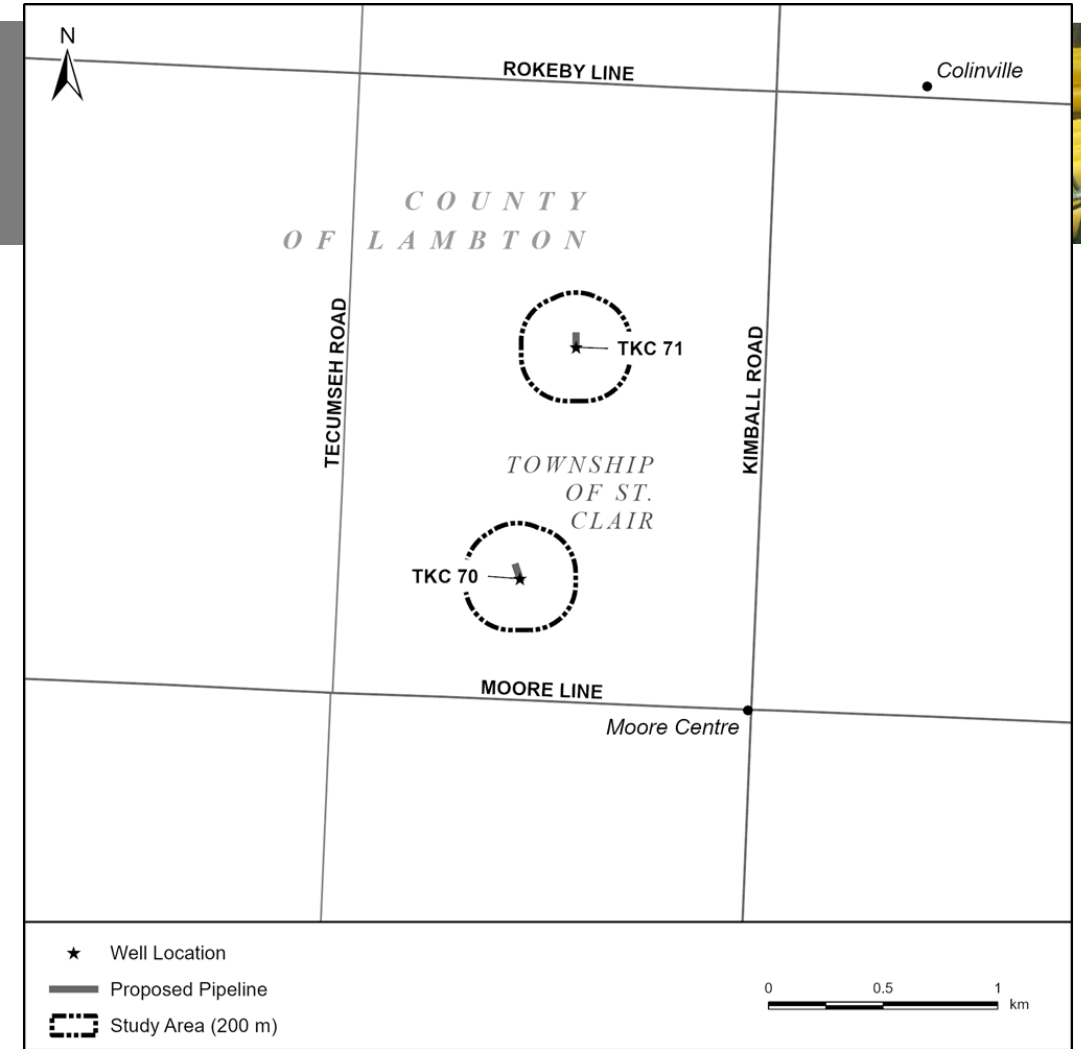
Project Description

1. Drill two new 8.5/8" natural gas storage (NGS) wells
2. Install approximately 100 to 140 m of 10-inch diameter steel pipeline to connect to the existing Mid Kimball Gathering Line
3. Temporary drill pads and permanent well pads

2026 Kimball-Colinville Well Drilling Project Information Session

Study Area

- The Study Area has been developed to assess potential environmental and socio-economic impacts.
- This map does not represent the final project scope/design that will provide access to natural gas to end-use customers.
- An interactive map that shows these routing alternatives can be accessed at:
<http://www.solutions.ca/KimballColinvilleWellsER>



2026 Kimball-Colinville Well Drilling Project Information Session



Environmental Study Process

As part of the planning process, Enbridge Gas has retained Stantec to undertake an Environmental Study for the Project. The Environmental Study will fulfill the requirements of the Ontario Energy Board's (OEB) "*Environmental Guidelines for the Location, Construction, and Operation of Hydrocarbon Projects and Facilities in Ontario, 8th Edition (2023)*".

The study will:

- Undertake engagement to understand the views of interested and potentially affected parties.
- Consult with Indigenous communities to understand interests and potential impacts.
- Be conducted during the earliest phase of the Project.
- Identify potential impacts of the Project.
- Develop environmental mitigation and protective measures to avoid or reduce potential impacts.
- Develop an appropriate environmental inspection, monitoring, and follow-up program.



2026 Kimball-Colinville Well Drilling Project Information Session



OEB Review Process

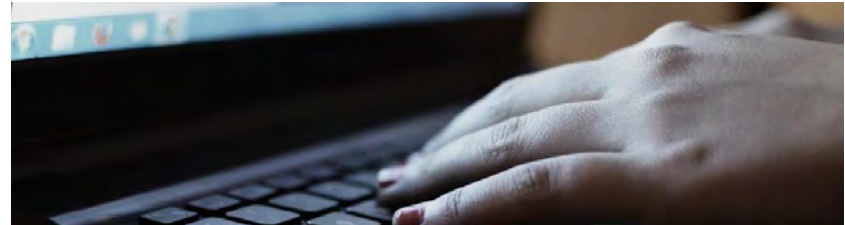
The Environmental Report (ER) for the study is scheduled to be completed by Q4 2025.

Enbridge Gas plans to submit a Well Drilling Licence Application to the Ministry of Natural Resources and Forestry (MNRF). Upon the Minister's request of the OEB to review the application, Enbridge Gas plans to file a final Environmental Report with the OEB.

Pending a positive recommendation from the OEB to the Minister of Natural Resources for the issuance of well drilling licenses under section 40 of the OEB Act, construction is anticipated to commence in early 2026.

Additional information about the OEB process may be found online at: www.oeb.ca

2026 Kimball-Colinville Well Drilling Project Information Session



Consultation and Engagement

- Consultation and engagement are key components of the Environmental Report.
- At the outset of the Project, Enbridge Gas submits a Project Description to the Ministry of Energy and Mines. Upon review, the Ministry determines the potential impacts on Aboriginal or treaty rights and identifies Indigenous communities that Enbridge Gas will consult with during the entirety of the project.
- The consultation and engagement program helps to identify and address Indigenous communities' and stakeholders' concerns, provides information about the Project to the stakeholders, and allows participation in the Project's review and development process.
- All input will be evaluated and may be considered during the evaluation for the Project.

2026 Kimball-Colinville Well Drilling Project Information Session



Access and Land Requirements

The project will be constructed near existing natural gas infrastructure and will require both permanent easements and temporary working space during construction.

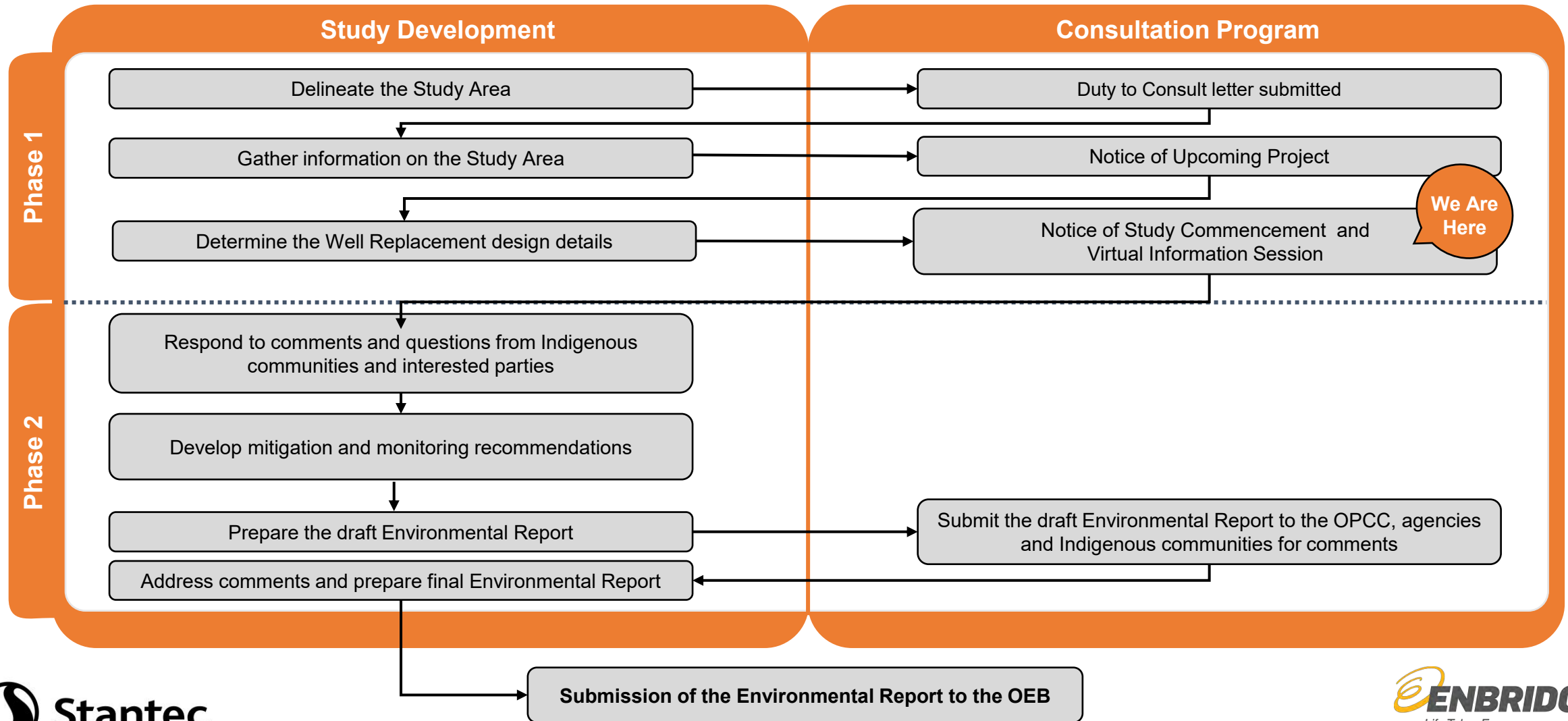
Enbridge Gas has a comprehensive Landowner Relations Program that uses a dedicated Lands Advisor who will:

- Provide direct contact and act as a liaison between landowners and Enbridge Gas.
- Be available to landowners during the length of the Project and throughout construction activities.
- Act as a singular point of contact for concerns and questions.
- Address any legal matters relating to permanent easements, the temporary use of property, and impacts or remedies to property.

2026 Kimball-Colinville Well Drilling Project

Information Session

Environmental Study Process



2026 Kimball-Colinville Well Drilling Project Information Session



Well Design

The natural gas wells will be designed to meet or exceed the regulations of the Canadian Standards Association (Z662 Oil and Gas Pipeline Systems) and the applicable regulations of the Technical Standards and Safety Association (TSSA).

Infrastructure Safety and Integrity

Many steps are taken to ensure the safe, reliable operation of the Enbridge Gas network of natural gas infrastructure, including:

- Design, construct, and test infrastructure to meet or exceed requirements set by industry standards and regulatory authorities.
- Continuously monitor the entire network.
- Perform regular field surveys to detect leaks and confirm that corrosion prevention methods are working as intended.



2026 Kimball-Colinville Well Drilling Project Information Session



Constructing an Enbridge Gas Well

Typical well drilling activities involve drilling with a rotary rig then running casing, and cementing the hole in place from larger to smaller diameters:

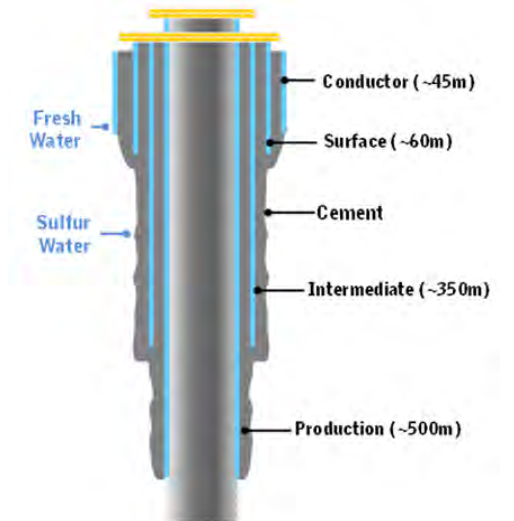
1. Surface Casing: set into bedrock to protect drinking water
2. Intermediate Casing: isolates storage gas zones
3. Production Casing: isolates storage gas zones

The final activity for the well drilling is the installation of a wellhead which meets industry standards.

Typical Injection – Withdrawal Well Wellhead



Typical cross-section of a storage well configuration



2026 Kimball-Colinville Well Drilling Project Information Session

Constructing an Enbridge Gas Pipeline

The pipeline construction process includes various procedures.

- Photo 1: Shows a typical Enbridge Gas natural gas pipeline. The Kimball-Colinville Well Drilling Project will involve the installation of 10-inch pipeline to each well which will be smaller than the pipeline shown in Photo 1.
- Photo 2: Represents a typical trench that is created during the installation process.
- Photo 3: Represents the process of backfilling a trench.
- Photo 4: Represents final clean-up and restoration. Once the pipeline has been installed, clean-up will involve the restoration of the right-of-way and other work areas.



2026 Kimball-Colinville Well Drilling Project Information Session



Pipeline Design

A 100 to 140-metre steel pipeline will be installed for the project. The pipeline is designed to meet and/or exceed the standards of the Canadian Standards Association (Z662 Oil and Gas Pipeline Systems) and of the Technical Standards and Safety Authority (TSSA).

Pipeline safety and integrity

Enbridge Gas takes many steps to maintain the safe, reliable operation of our network of natural gas pipelines, including:

- Designing, constructing, and testing our pipelines to meet or exceed requirements set by industry standards and regulatory authorities;
- Continuously monitor the entire network; and,
- Perform regular field surveys to detect leaks and confirm that corrosion prevention methods are working as intended.

2026 Kimball-Colinville Well Drilling Project Information Session



Socio-Economic Features

The Project will be constructed adjacent to existing natural gas infrastructure on agricultural lands.

Potential Impacts

- Temporary increases in noise, dust and air emissions.
- Increased construction traffic volumes.
- Temporary impairment of the use of residential and/or commercial/industrial properties.

Example Mitigation Measures

- Adhere to applicable noise by-laws.
- Implement dust control measures.
- Implement measures to reduce vehicle and equipment air emissions.
- Develop and implement a Traffic Control Plan.
- Ensure that a designated Enbridge Gas representative is available prior to and throughout construction.

2026 Kimball-Colinville Well Drilling Project Information Session



Cultural and Natural Heritage Features

Cultural heritage features such as heritage buildings, fences, and landscapes may be encountered during construction.

Previous archaeological assessments have determined that there are no likely impacts to archaeological resources during construction.

A natural heritage assessment determined potential encounters between wildlife and construction/drilling activities.

Potential Impacts

- Damage or destruction of historical resources.
- Disturbance and/or mortality to local wildlife.

Example Mitigation Measures

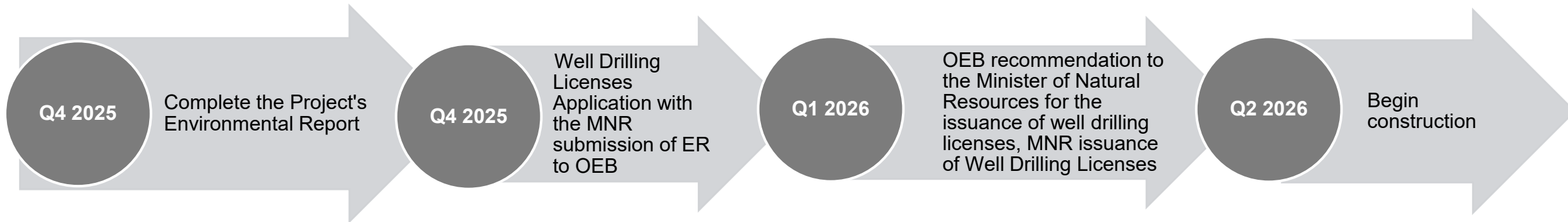
- Avoidance of Cultural Heritage properties is recommended
- Reporting of any previously unknown archaeological or historical resources uncovered, or suspected to be uncovered, during excavation.
- Equipment and vehicles should yield ROW to wildlife.

2026 Kimball-Colinville Well Drilling Project Information Session



Next Steps

After this Information Session, Enbridge Gas intends to pursue the following schedule of activities:



2026 Kimball-Colinville Well Drilling Project Information Session



Thank you!

On behalf of the Project Team, thank you for attending the session. Please complete a questionnaire by August 26, 2025, to ensure that your comments are considered as part of the Environmental Report.

Shelby Gibson

Environmental Planner
Assessment & Permitting

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300-1331 Clyde Avenue
Ottawa, ON K2C 3G4
(613) 804-6362

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2026 Kimball-Colinville Wells Drilling Project: Environmental Report
Appendix A Consultation Materials
November 7, 2025

Appendix A.6 Comment & Response Summary Table



Appendix A6 Project Correspondence

Consultation Correspondence

Agencies and Elected Officials

Comment Number	Stakeholder Group	Name	Method of Communication	Email	Phone Number	Date of Correspondence	Summary of Comment	Date Response Provided	Summary of Response
1	All Elected Officials on contact list	N/A	Email	N/A	N/A	June 20, 2025	Notice of Upcoming Project (NUP) sent to all members on the contact list via email.	N/A	N/A
2	Agencies, OPCC on the Contact List	Stantec on the behalf of Enbridge Gas	Email	N/A	N/A	June 24, 2025	NUP was sent to all members on the contact list under Agency, OPCC and Stakeholders via email.	N/A	N/A
3	Ministry of Natural Resources (MNR)	N/A	Email	Karen.oconnor@ontario.ca	N/A	July 8, 2025	Provided MNR Southern Region Information Package – For External Proponent Environmental Assessments (Package)	N/A	N/A
4	All Elected Officials on contact list	Enbridge Gas	Email	N/A	N/A	July 11, 2025	Notice of Commencement / VIS sent to all members on the contact list under Indigenous communities via email.	N/A	N/A
5	Agencies, OPCC, and Municipal Officials on the Contact List`	N/A	Email	N/A	N/A	July 11, 2025	Notice of Commencement / VIS sent to all members on the contact list under Agency, OPCC, and Stakeholders via email.	N/A	N/A
6	Ministry of Citizenship and Multiculturalism (MCM)	N/A	Email	anastasia.abrazhevich@ontario.ca	N/A	July 30, 2025	Provided MCM Initial Guidance Letter in reference to NUP and NOC.	N/A	N/A
7	Saint Clair Region Conservation Authority (SCRCA)	Stantec on behalf of Enbridge Gas	Email	Shelby.gibson@stantec.com	N/A	August 20, 2025	Requested GIS Data layers for use in the Environmental Report (ER).	N/A	N/A



Ontario Pipeline Coordinating Committee

Comment Number	Stakeholder Group	Name	Method of Communication	Email	Phone Number	Date of Correspondence	Summary of Comment	Date Response Provided	Summary of Response
1	All OPCC on contact list	Stantec on behalf of Enbridge Gas	Email	N/A	N/A	June 24, 2025	The NUP sent to all of the OPCC via email.	N/A	N/A
2	All OPCC on contact list	Stantec on behalf of Enbridge Gas	Email	N/A	N/A	July 11, 2025	The NOC was sent to all of the OPCC via email.	N/A	N/A

Municipal

Comment Number	Stakeholder Group	Name	Method of Communication	Email	Phone Number	Date of Correspondence	Summary of Comment	Date Response Provided	Summary of Response
1	All Municipal members on the contact list	Enbridge Gas	Email	N/A	N/A	June 24, 2025	The NUP sent to all Municipal Members via email.	N/A	N/A
2	All Municipal members on the contact list	Enbridge Gas	Email	N/A	N/A	July 11, 2025	The NOC/VIS sent to all Municipal Members via email.	N/A	N/A



Indigenous Communities

Comment Number	Stakeholder Group	Name	Method of Communication	Email	Phone Number	Date of Correspondence	Summary of Comment	Date Response Provided	Summary of Response
1	All Indigenous communities on the contact list	Enbridge Gas	Email	N/A	N/A	January 31, 2025	The NUP sent to all Indigenous communities via email.	N/A	N/A
2	All Indigenous communities on the contact list	Enbridge Gas	Email	N/A	N/A	March 26, 2025	The NOC sent to all Indigenous communities via email.	N/A	N/A

Stakeholders

Comment Number	Stakeholder Group	Name	Method of Communication	Email	Phone Number	Date of Correspondence	Summary of Comment	Date Response Provided	Summary of Response
1	Adjacent Residents	Stantec on behalf of Enbridge Gas	Mail	N/A	N/A	July 11, 2025	Notice of Commencement / VIS mailed to all members on the landowner list.	N/A	N/A

Draft Environmental Report Correspondence

OPCC Review

Comment Number	Stakeholder Group	Name	Method of Communication	Email	Phone Number	Date of Correspondence	Summary of Comment	Date Response Provided	Summary of Response
1	All OPCC on contact list	Stantec on behalf of Enbridge Gas	Email	N/A	N/A	August 29, 2025	The Draft ER was sent to the OPCC via email. Comments were expected to be received by Friday, October 10, 2025.	N/A	N/A
2	All OPCC on contact list	Stantec on behalf of Enbridge Gas	Email	N/A	N/A	October 1, 2025	A reminder email was sent out to the OPPC regarding the Draft ER.	N/A	N/A



Comment Number	Stakeholder Group	Name	Method of Communication	Email	Phone Number	Date of Correspondence	Summary of Comment	Date Response Provided	Summary of Response
3	Ministry of Energy, Mines (MEM), Indigenous Policy Unit		Email		N/A	October 1, 2025	Feedback on Draft ER – requesting more information regarding Indigenous consultation.	N/A	N/A
4	MNR		Email		N/A	October 2, 2025	MNR has no comments on Draft ER.	N/A	N/A
5	Ministry of the Environment, Conservation, and Parks (MECP) – Source Protection Branch		Email		N/A	October 2, 2025	MECP provided general comments regarding potential impacts to drinking water from construction activities.	N/A	N/A
6	MCM		Email		N/A	October 2, 2025	Feedback on Draft ER – MCM is finalizing comments and will provide feedback by early next week.	N/A	N/A
7	Ontario Ministry of Agriculture, Food & Agribusinesses (OMAFRA)		Email		N/A	October 10, 2025	Feedback on Draft ER – OMAFA provided feedback regarding potential impacts to agricultural lands, tile drainage, and temporary work areas.	N/A	N/A



Comment Number	Stakeholder Group	Name	Method of Communication	Email	Phone Number	Date of Correspondence	Summary of Comment	Date Response Provided	Summary of Response
8	MCM		Email		N/A	October 15, 2025	Feedback on Draft ER – MCM agreed no more archaeological assessment required for TKC 70 and 71. MCM recommends including a section in the ER that shows the overlap between past archaeological reports and TKC 70 and 71. MCM confirms the past cultural heritage reports covered TKC 70 and recommends further mapping to determine the cultural heritage resources located near the TKC 71 location.	October 20, 2025	Enbridge Gas acknowledged MCM's comments and questions on the Draft ER.

Indigenous Communities

Comment Number	Stakeholder Group	Name	Method of Communication	Email	Phone Number	Date of Correspondence	Summary of Comment	Date Response Provided	Summary of Response
1	All Indigenous communities on contact list	Enbridge Gas	Email	N/A	N/A	August 29, 2025	The Draft ER was sent to all Indigenous community members on the Contact List.	N/A	N/A
2	The Chippewas of Kettle and Stony Point First Nation (CKSPFN)	N/A	Email	N/A	N/A	October 9, 2025	Enbridge received questions and comments from CKSPFN's review of the Draft ER.		Enbridge Gas continues to work on responses to comments received from CKSPFN. A review of the correspondence has determined that responses will not require any updates to the ER. More details can be found in Enbridge Gas' <i>Indigenous Consultation Record</i> .



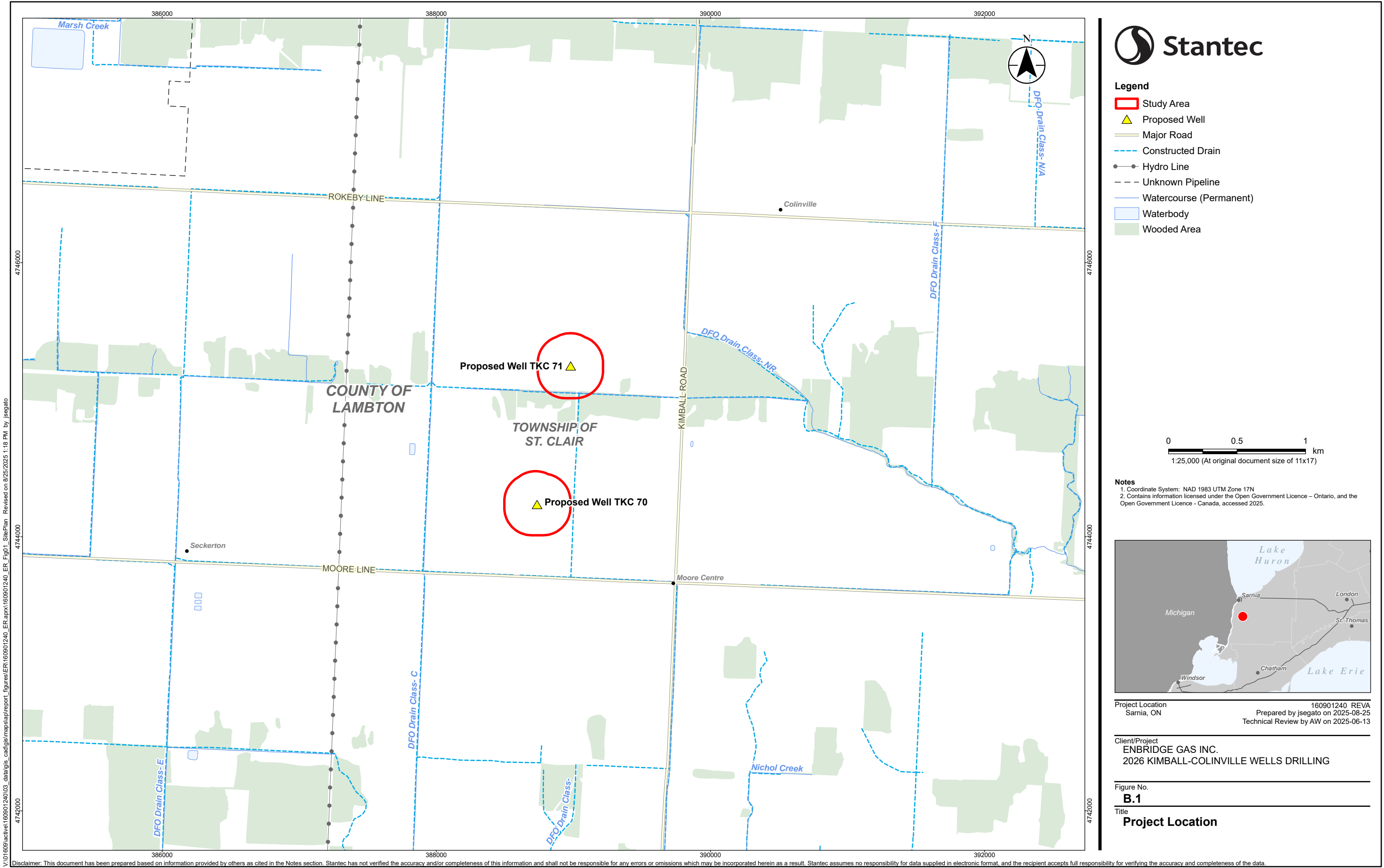
Comment Number	Stakeholder Group	Name	Method of Communication	Email	Phone Number	Date of Correspondence	Summary of Comment	Date Response Provided	Summary of Response
3	Chippewas of the Thames First Nation (COTTFN)	N/A	Email	N/A	N/A	October 14, 2025	Enbridge received questions and comments from COTTFN's review of the Draft ER.		Enbridge Gas continues to work on responses to comments received from COTTFN. A review of the correspondence has determined that responses will not require any updates to the ER. More details can be found in Enbridge Gas' <i>Indigenous Consultation Record</i> .



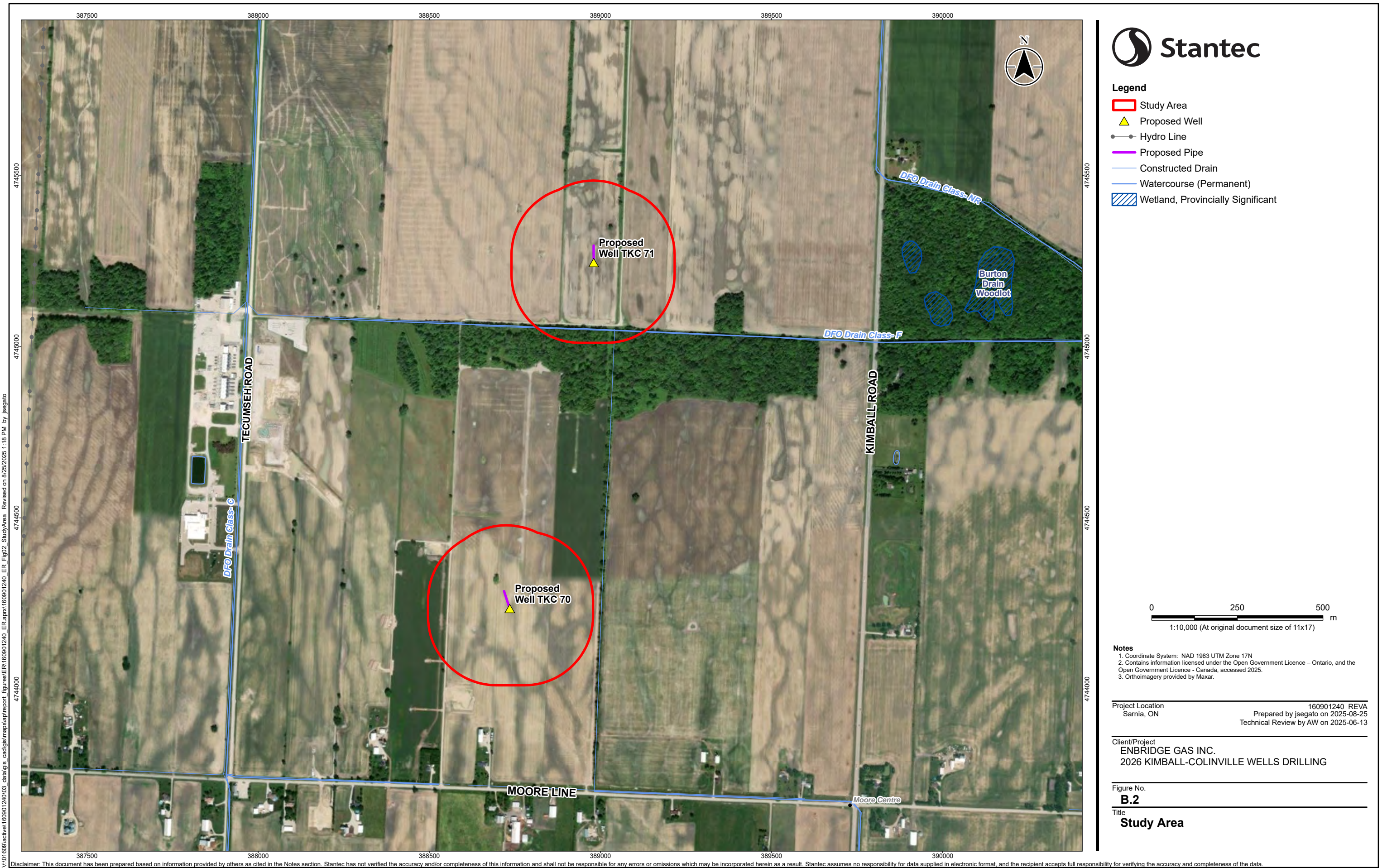
2026 Kimball-Colinville Wells Drilling Project: Environmental Report
Appendix B Existing Conditions Figures
November 7, 2025

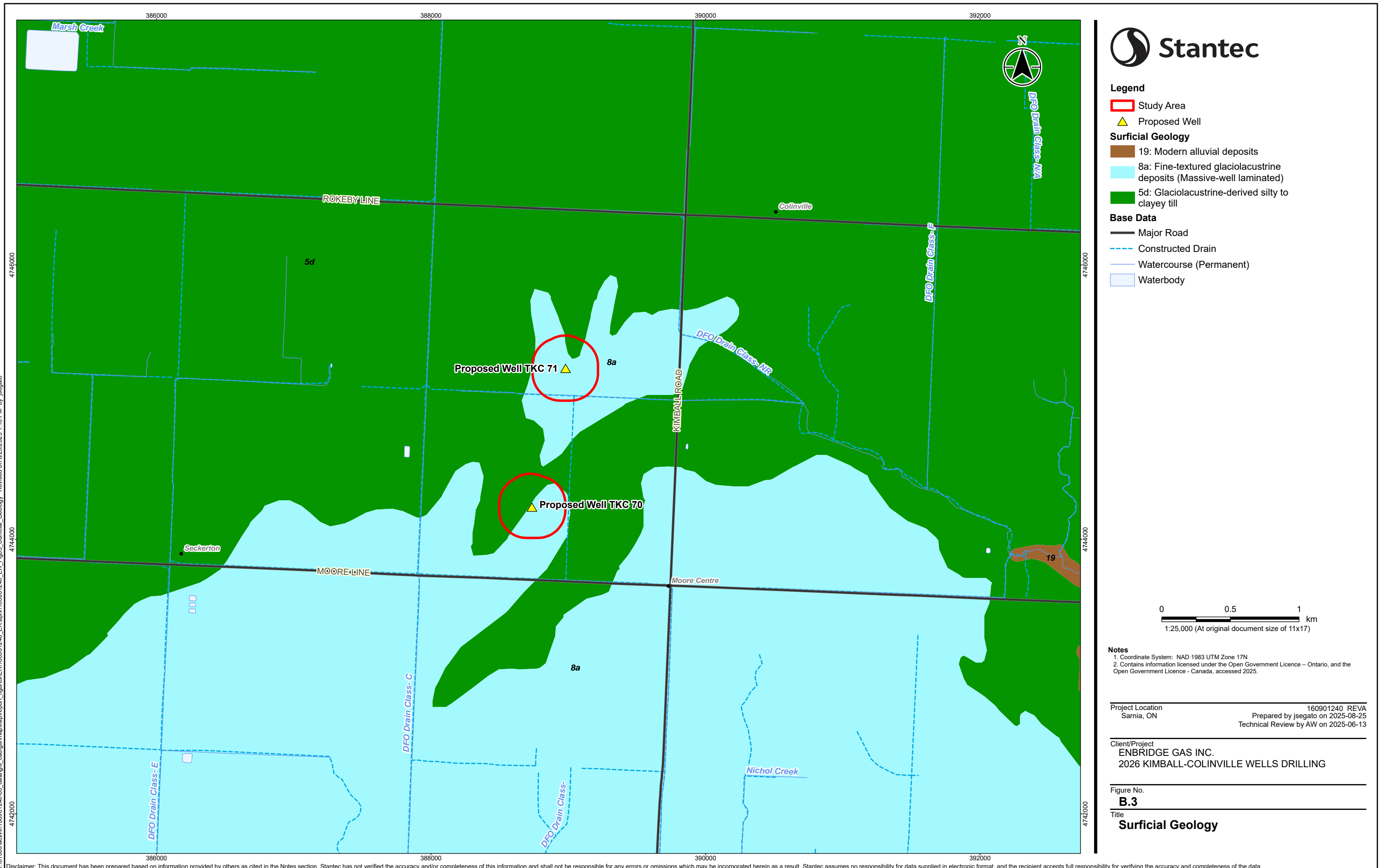
Appendix B Existing Conditions Figures



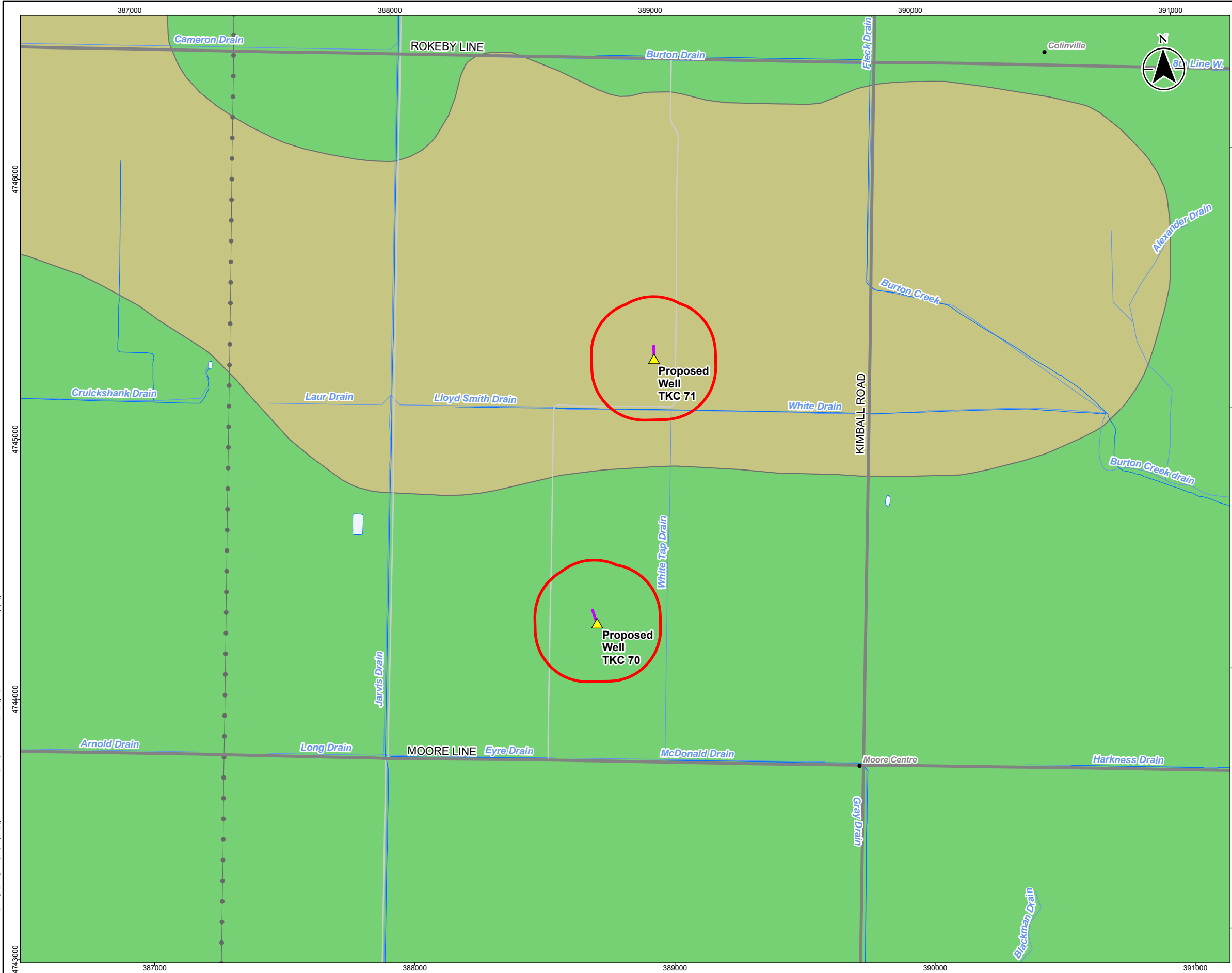


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Legend

- Study Area
- ▲ Proposed Well
- Proposed Pipe

Base Features

- Watercourse (Intermittent)
- Watercourse (Permanent)
- Constructed Drain
- Waterbody

Soil Type

- CTR, CAISTOR CLAY
- BKN, BROOKSTON CLAY

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1:3,000,000 (At original document size of 11x17)

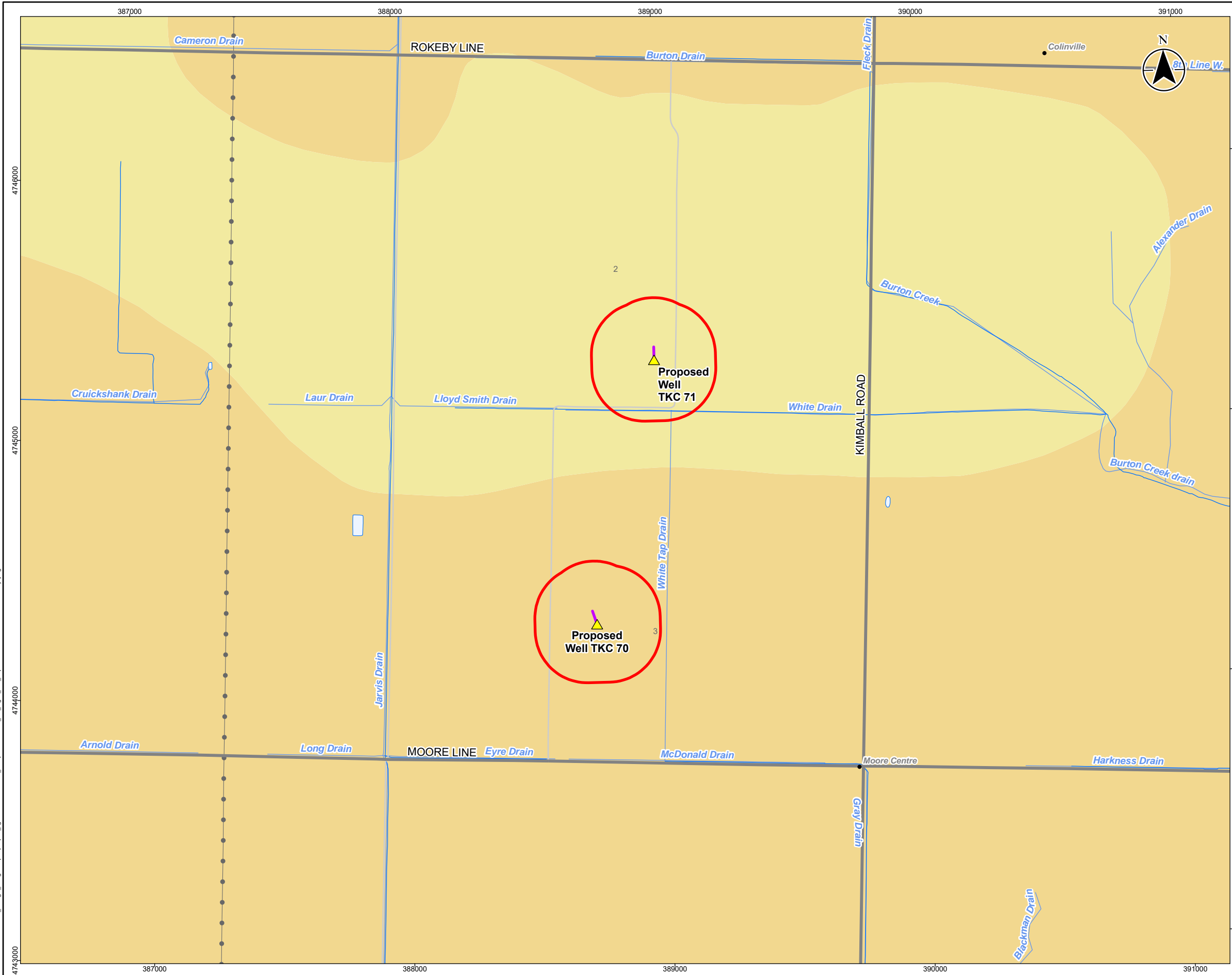
- Notes**
- Coordinate System: NAD 1983 Ontario MNR Lambert
 - Contains information licensed under the Open Government Licence – Ontario, and the Open Government Licence - Canada, accessed 2025.

Project Location 160901240
Sarnia, ON Prepared by JAS on 2025-08-25
Technical Review by AW on 2025-07-20

Client/Project
ENBRIDGE GAS INC.
2026 KIMBALL-COLINVILLE WELLS DRILLING

Figure No.
B.5

Title
Soil Types



Legend

- Study Area
- Proposed Well
- Proposed Pipe

Base Features

- Watercourse (Permanent)
- Constructed Drain
- Waterbody

Soil Capability Classification of Agriculture

- 2: Soils in this class have moderate limitations that restrict the range of crops or require moderate conservation practices
- 3: Soils in this class have moderately severe limitations that restrict the range of crops or require special conservation practices

0 0.5 1 km
1:3,000,000 (At original document size of 11x17)

Notes

- Coordinate System: NAD 1983 Ontario MNR Lambert
- Contains information licensed under the Open Government Licence – Ontario, and the Open Government Licence - Canada, accessed 2025.

Project Location 160901240
Sarnia, ON Prepared by JAS on 2025-08-25
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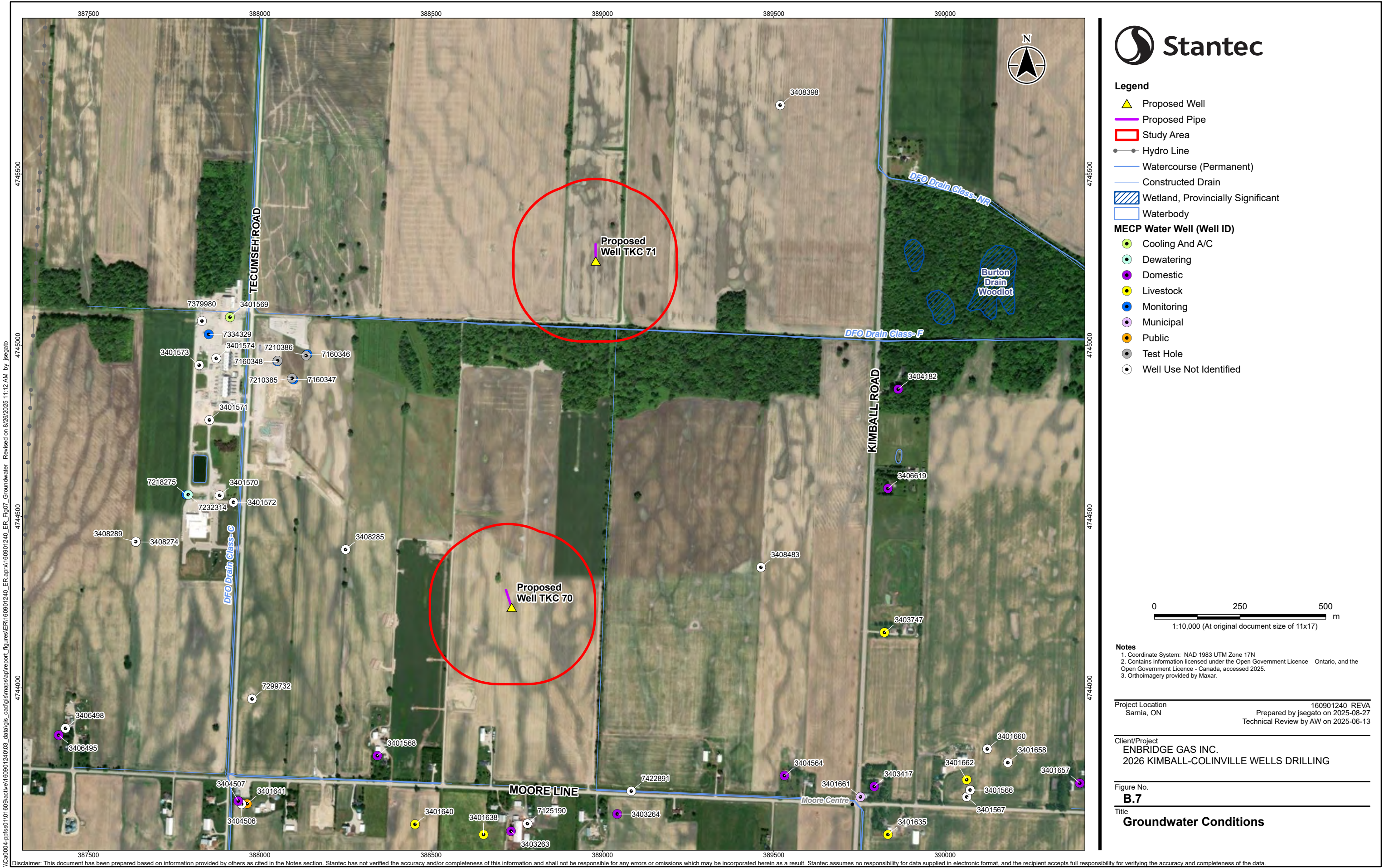
Client/Project
ENBRIDGE GAS INC.
2026 KIMBALL-COLINVILLE WELLS DRILLING

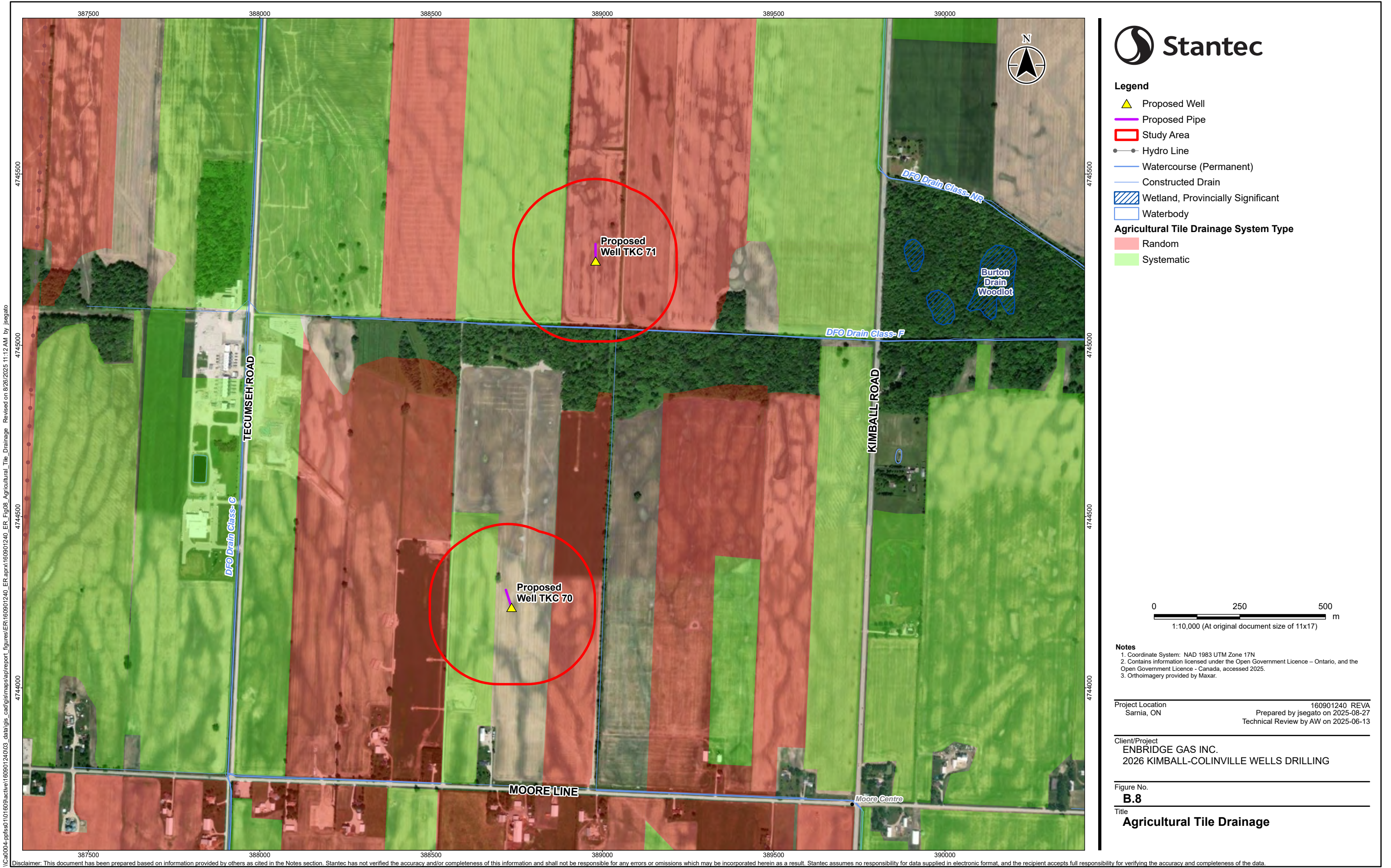
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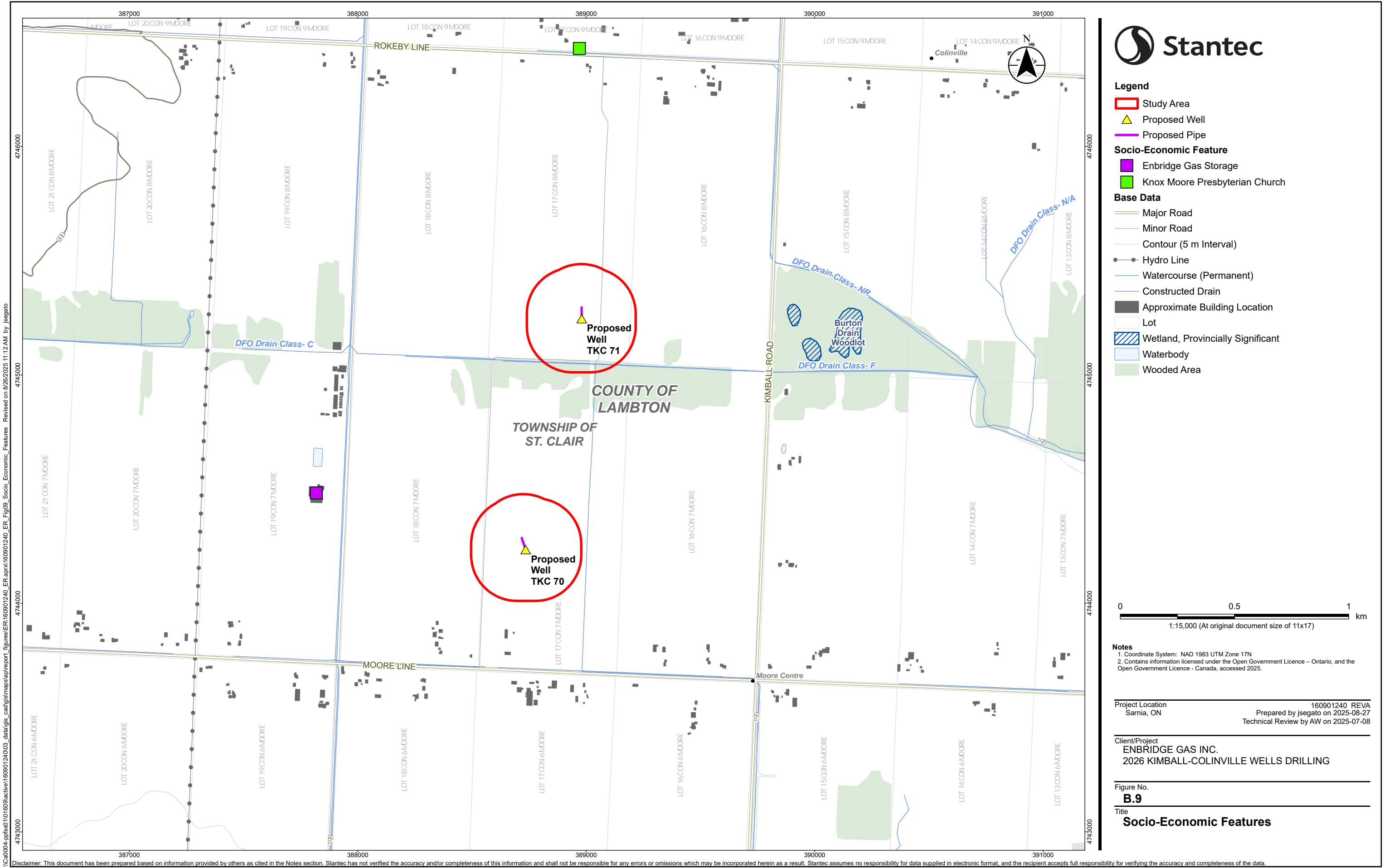
Title

Soil Capability





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2026 Kimball-Colinville Wells Drilling Project: Environmental Report
Appendix C Significant Wildlife Habitat Assessment
November 7, 2025

**Appendix C Significant Wildlife Habitat
Assessment**



Appendix C: Significant Wildlife Habitat Assessment for the 2025 Kimball-Colinville Wells Drilling Project Study Area (Ecoregion 7)

Habitats of Seasonal Concentration Areas

Candidate Wildlife Habitat	Criteria	Methods	Potential Habitat Present in the Study Area?
Waterfowl Stopover and Staging Area (Terrestrial)	<p>Fields with sheet water or utilized by tundra swans during spring (mid-March to May), or annual spring melt water flooding found in any of the following Community Types: Meadow (ME), Thicket (TH).</p> <p>Agricultural fields with waste grains are commonly used by waterfowl, and these are not considered SWH unless used by Tundra swans in the Long Point, Rondeau, Lake St. Clair, Grand Bend and Point Pelee Areas.</p>	Desktop ELC surveys were used to assess features within the Study Area that may support waterfowl stopover and staging areas (terrestrial).	Candidate. Low-lying areas to support SWH for waterfowl stopover and staging areas (terrestrial) may be present in agricultural fields in the Study Area.
Waterfowl Stopover and Staging Area (Aquatic)	<p>The following Community Types: Meadow Marsh (MAM), Shallow Marsh (MAS), Shallow Aquatic (SA), Deciduous Swamp (SWD).</p> <p>Ponds, marshes, lakes, bays, coastal inlets, beaches and watercourses used during migration.</p> <p>The combined area of the ELC ecosites and a 100 m radius area is the SWH.</p> <p>Sewage treatment ponds and storm water ponds do not qualify as a SWH; however, a reservoir managed as a large wetland or pond/lake does qualify.</p>	Desktop ELC surveys were used to assess features within the Study Area that may support waterfowl stopover and staging areas (aquatic).	Absent. No aquatic features to support SWH for waterfowl stopover and staging areas (aquatic) are present in the Study Area.
Shorebird Migratory Stopover Area	<p>Shorelines of lakes, rivers and wetlands, including beach areas, bars and seasonally flooded, muddy and un-vegetated shoreline habitats.</p> <p>Great Lakes coastal shorelines, including groynes and other forms of amour rock lakeshores, are extremely important for migratory shorebirds in May to mid-June and early July to October.</p> <p>Sewage treatment ponds and storm water ponds do not qualify as a significant wildlife habitat.</p> <p>The following community types: Meadow Marsh (MAM), shoreline (SH), or Sand Dune (SB).</p>	Desktop ELC surveys and wildlife habitat assessments were used to assess features within the Study Area that may support migratory shorebirds.	Absent. Suitable shoreline habitat to support large aggregations of shorebirds is absent from the Study Area.



Candidate Wildlife Habitat	Criteria	Methods	Potential Habitat Present in the Study Area?
Raptor Wintering Area	<p>At least one of the following Forest Community Types: Deciduous Forest (FOD), Mixed Forest (FOM) or Coniferous Forest (FOC), in combination with one of the following Upland Community Types: Meadow (ME), Thicket (TH), Savannah (SV), Woodland (WOD) (<60% cover) that are >20 ha and provide roosting, foraging and resting habitats for wintering raptors.</p> <p>Upland habitat (ME, TH, SV, WOD), must represent at least 15 ha of the 20 ha minimum size.</p>	Desktop ELC surveys and GIS analysis were used to assess features within the Study Area that may support wintering raptors.	Absent. Fields is the Study Area are entirely agriculture (AG). The hedgerow within the Study Area is less than 20 ha.
Bat Hibernacula	<p>Hibernacula may be found in caves, mine shafts, underground foundations and karsts.</p> <p>May be found in these Community Types: Crevice (CCR), Cave (CCA).</p>	Desktop ELC surveys were used to assess features within the Study Area that may support bat hibernacula.	Absent. No suitable cave or underground habitat are present in the Study Area to support SWH for bat hibernacula.
Bat Maternity Colonies	<p>Maternity colonies considered significant wildlife habitat are found in forested ecosites.</p> <p>Either of the following Community Types: Deciduous Forest (FOD), Mixed Forest (FOM), Coniferous Forest (FOC), Deciduous Swamp (SWD), Mixed Forest (SWM) and Coniferous Forest (SWC) that have wildlife trees >10 cm diameter at breast height (dbh).</p> <p>Maternity colonies can be found in tree cavities, vegetation and often in buildings (buildings are not considered to be SWH).</p> <p>Female Bats prefer wildlife tree (snags) in early stages of decay, class 1-3 or class 1 or 2.</p> <p>Northern Myotis prefer contiguous tracts of older forest cover for foraging and roosting in snags and trees.</p> <p>Silver-haired Bats prefer older mixed or deciduous forest and form maternity colonies in tree cavities and small hollows. Older forest areas with at least 21 snags/ha are preferred.</p>	Desktop ELC surveys were used to assess features within the Study Area that may support bat maternity colonies. A roost tree suitability assessment was performed on trees in the Project Footprint and up to 60m from the Project Footprint.	Candidate. The hedgerow in the Study Area may provide candidate SWH for bat maternity colonies.
Turtle Wintering Areas	<p>Snapping and Midland Painted turtles utilize ELC community classes: Swamp (SW), Marsh (MA) and Open Water (OA). Shallow water (SA), Open Fen (FEO) and Open Bog (BOO).</p> <p>Northern Map turtle- open water areas such as deeper rivers or streams and lakes can also be used as over-wintering habitat.</p> <p>Water has to be deep enough not to freeze and have soft mud substrate.</p> <p>Over-wintering sites are permanent water bodies, large wetlands, and bogs or fens with adequate dissolved oxygen.</p>	Desktop ELC surveys and wildlife habitat assessments were used to assess features within the Study Area that may support areas of permanent standing water but not deep enough to freeze.	Absent. No aquatic habitat to support SWH for turtle wintering areas is present in the Study Area.



Candidate Wildlife Habitat	Criteria	Methods	Potential Habitat Present in the Study Area?
Reptile Hibernacula	<p>Hibernation occurs in sites located below frost lines in burrows, rock crevices, broken and fissured rock and other natural features. Wetlands can also be important over-wintering habitat in conifer or shrub swamps and swales, poor fens, or depressions in bedrock terrain with sparse trees or shrubs with sphagnum moss or sedge hummock ground cover.</p> <p>Any ecosite in southern Ontario other than very wet ones may provide habitat. The following Community Types may be directly related to snake hibernacula: Talus (TA), Rock Barren (RB), Crevice (CCR), Cave (CCA), and Alvar (RBOA1, RBSA1, RBT A1).</p>	Desktop ELC surveys and wildlife habitat assessments were used to assess features within the Study Area that may support snake hibernacula.	Candidate. Rural agriculture fields and the hedgerow may have rock piles, fences and/or crumbling foundations that could provide reptile hibernacula within the Study Area.
Colonially-Nesting Bird Breeding Habitat (Bank and Cliff)	<p>Eroding banks, sandy hills, borrow pits, steep slopes, sand piles, cliff faces, bridge abutments, silos, or barns found in any of the following Community Types: Meadow (ME), Thicket (TH), Bluff (BL), Cliff (CL).</p> <p>Does not include man-made structures (bridges or buildings) or recently (2 years) disturbed soil areas, such as berms, embankments, soil or aggregate stockpiles.</p> <p>Does not include a licensed/permitted Mineral Aggregate Operation.</p>	Desktop ELC surveys and wildlife habitat assessments were used to assess features within the Study Area that may support colonial bird breeding habitat.	Absent. No eroding banks, steep slopes, soil piles, cliff faces, or cliff faces are present in the Study Area.
Colonially-Nesting Bird Breeding Habitat (Tree/Shrubs)	<p>Identification of stick nests in any of the following Community Types: Mixed Swamp (SWM), Deciduous Swamp (SWD), Treed Fen (FET).</p> <p>The edge of the colony and a minimum 300 m area of habitat or extent of the Forest Ecosite containing the colony or any island <15.0 ha with a colony is the SWH.</p> <p>Nests in live or dead standing trees in wetlands, lakes, islands, and peninsulas. Shrubs and occasionally emergent vegetation may also be used.</p>	Desktop ELC surveys and wildlife habitat assessments were used to assess features within the Study Area that may support colonial bird breeding habitat (Trees/Shrubs).	Absent. Suitable nesting habitat to support colonially nesting birds was absent from the Study Area.
Colonially-Nesting Bird Breeding Habitat (Ground)	<p>Any rocky island or peninsula within a lake or large river.</p> <p>For Brewer's Blackbird close proximity to watercourses in open fields or pastures with scattered trees or shrubs found in any of the following Community Types: Meadow Marsh (MAM1-6), Shallow Marsh (MAS1-3), Meadow (ME), Thicket (TH), Savannah (SV).</p>	Desktop ELC surveys and wildlife habitat assessments were used to assess features within the Study Area that may support colonial bird breeding habitat (Ground).	Absent. No rocky islands or peninsulas were present in the Study Area.
Migratory Butterfly Stopover Areas	<p>Located within 5 km of Lake Ontario.</p> <p>A combination of ELC communities, one from each land class is required: Field (ME, TH) and Forest (FOC, FOM, FOD).</p> <p>Minimum of 10 ha in size with a combination of field and forest habitat present.</p>	Desktop ELC surveys and GIS analysis were used to assess features within the Study Area that may support migratory butterfly stopover areas.	Absent. The Study Area is not located within 5km of Lake Ontario.
Landbird Migratory Stopover Areas	<p>The following community types: Forest (FOD, FOM, FOC) or Swamp (SWC, SWM, SWD).</p> <p>Woodlots must be >10 ha in size and within 5 km of Lake Ontario – woodlands within 2 km of Lake Ontario are more significant.</p>	Desktop ELC surveys and GIS analysis were used to assess features within the Study Area that may support landbird migratory stopover areas.	Absent. The Study Area is not located within 5km of Lake Ontario.



Candidate Wildlife Habitat	Criteria	Methods	Potential Habitat Present in the Study Area?
Deer Winter Congregation Areas	Woodlots typically >100 ha in size unless determined by the MNR as significant. (If large woodlots are rare in a planning area >50 ha). All forested ecosites within Community Series: FOC, FOM, FOD, SWC, SWM, SWD. Conifer plantations much smaller than 50 ha may also be used.	No studies required as the MNR delineates this habitat.	Absent. No deer winter congregation areas were identified on MNR mapping (MNR 2025).

Rare Vegetation Communities

Candidate Wildlife Habitat	Criteria	Methods	Potential Habitat Present in the Study Area?
Cliffs and Talus Slopes	A Cliff is vertical to near vertical bedrock >3 m in height. A Talus Slope is rock rubble at the base of a cliff made up of coarse rocky debris. Any ELC Ecosite within Community Series: TAO, TAS, TAT, CLO, CLS, CLT. Most cliff and talus slopes occur along the Niagara Escarpment.	Desktop ELC surveys were used to assess features within the Study Area that would be considered cliffs or talus slopes.	Absent. There are no cliff ELC Ecosites in the Study Area.
Sand Barren	Sand barrens typically are exposed sand, generally sparsely vegetated and cause by lack of moisture, periodic fires and erosion. Vegetation can vary from patchy and barren to tree covered but less than 60%. Any of the following Community Types: SBO1 (Open Sand Barren Ecosite), SBS1 (Shrub Sand Barren Ecosite), SBT1 (Treed Sand Barren Ecosite).	Desktop ELC surveys were used to assess features within the Study Area that would be considered to be sand barrens.	Absent. There are no sand barren ELC Ecosites in the Study Area.
Alvar	An alvar is typically a level, mostly unfractured calcareous bedrock feature with a mosaic of rock pavements and bedrock overlain by a thin veneer of soil. Vegetation cover varies from sparse lichen-moss associations to grasslands and shrublands and comprising a number of characteristic or indicator plant. Undisturbed alvars can be phyto- and zoogeographically diverse, supporting many uncommon or are relict plant and animal species. Vegetation cover varies from patchy to barren with a less than 60% tree cover. Any of the following Community Types: ALO1(Open Alvar Rock Barren Ecosite), ALS1 (Alvar Shrub Rock Barren Ecosite), ALT1 (Treed Alvar Rock Barren Ecosite), FOC1 (Dry-Fresh Pine Coniferous Forest), FOC2 (Dry-Fresh Cedar Coniferous Forest), CUM2 (Bedrock Cultural Meadow), CUS2 (Bedrock Cultural Savannah), CUT2-1 (Common Juniper Cultural Alvar Thicket), or CUW2 (Bedrock Cultural Woodland). An Alvar site >0.5 ha in size.	Desktop ELC surveys were used to assess features within the Study Area that would be considered to be alvar communities.	Absent. There are no alvar ELC Ecosites in the Study Area.
Old Growth Forest	Old-growth forests tend to be relatively undisturbed, structurally complex, and contain a wide variety of trees and shrubs in various age classes. These habitats usually support a high diversity of wildlife species.	Desktop ELC surveys were used to assess features within the Study Area	Absent. There are no old-growth ELC Ecosites in the Study Area.



Candidate Wildlife Habitat	Criteria	Methods	Potential Habitat Present in the Study Area?
	No minimum size criteria in any of the following Community Types: FOD (Deciduous Forest), FOM (Mixed Forest), FOC (Coniferous Forest). Forests greater than 120 years old and with no historical forestry management was the main criteria when surveying for old-growth forests.	that would be considered to be old-growth forest communities.	
Savannah	A Savannah is a tallgrass prairie habitat that has tree cover between 25 – 60%. In Ecoregion 6E, known Tallgrass Prairie and savannah remnants are scattered between Lake Huron and Lake Erie, near Lake St. Clair, north of and along the Lake Erie shoreline, in Brantford and in the Toronto area (north of Lake Ontario). Any of the following Community Types: TPS1 (Dry-Fresh Tallgrass Mixed Savannah Ecosite), TPS2 (Fresh-Moist Tallgrass Deciduous Savannah Ecosite), TPW1 (Dry-Fresh Black Oak Tallgrass Deciduous Woodland Ecosite), TPW2 (Fresh-Moist Tallgrass Deciduous Woodland Ecosite), CUS2 (Bedrock Cultural Savannah Ecosite).	Desktop ELC surveys were used to assess features within the Study Area that would be considered to be savannah communities.	Absent. There are no savannah ELC Ecosites in the Study Area.
Tallgrass Prairie	A Tallgrass Prairie has ground cover dominated by prairie grasses. An open Tallgrass Prairie habitat has <25% tree cover. In Ecoregion 6E, known Tallgrass Prairie and savannah remnants are scattered between Lake Huron and Lake Erie, near Lake St. Clair, north of and along the Lake Erie shoreline, in Brantford and in the Toronto area (north of Lake Ontario). Any of the following Community Types: TPO1 (Dry Tallgrass Prairie Ecosite), TPO2 (Fresh-Moist Tallgrass Prairie Ecosite).	Desktop ELC surveys were used to assess features within the Study Area that would be considered to be tall-grass communities.	Absent. There are no tall-grass prairie ELC Ecosites in the Study Area.
Other Rare Vegetation Communities	Provincially Rare S1, S2 and S3 vegetation communities are listed in Appendix M of the SWHTG.	Desktop ELC surveys were used to assess features within the Study Area that would be considered to be other rare vegetation communities.	Absent. There are no rare ELC vegetation communities in the Study Area.

Specialized Habitat for Wildlife

Candidate Wildlife Habitat	Criteria	Methods	Potential Habitat Present in the Study Area?
Waterfowl Nesting Area	All upland habitats located adjacent to these wetland ELC Ecosites are Candidate SWH: MAS1, MAS2, MAS3, SAS1, SAM1, SAF1, MAM1, MAM2, MAM3, MAM4, MAM5, MAM6, SWT1, SWT2, SWD1, SWD2, SWD3, SWD4. Note: includes adjacency to Provincially Significant Wetlands.	Desktop ELC surveys were used to assess features within the Study Area that may support nesting waterfowl. Habitats adjacent to wetlands without standing water were not considered candidate SWH.	Absent. There are no waterfowl nesting ELC Ecosites in the Study Area.



Candidate Wildlife Habitat	Criteria	Methods	Potential Habitat Present in the Study Area?
Bald Eagle and Osprey nesting, Foraging, and Perching Habitat	<p>Nests are associated with lakes, ponds, rivers or wetlands along forested shorelines, islands, or on structures over water.</p> <p>Nests located on man-made objects are not to be included as SWH (e.g., telephone poles and constructed nesting platforms).</p> <p>ELC Forest Community Series: FOD, FOM, FOC, SWD, SWM and SWC directly adjacent to riparian areas – rivers, lakes, ponds and wetlands.</p>	Desktop ELC surveys and wildlife habitat assessments were used to assess features within the Study Area that may support nesting, foraging and perching habitat for large raptors.	Absent. There are no aquatic features in the Study Area.
Woodland Raptor Nesting Habitat	<p>All natural or conifer plantation woodland/forest stands combined >30 ha and with >4 ha of interior habitat. Interior habitat determined with a 200 m buffer.</p> <p>Stick nests found in a variety of intermediate-aged to mature conifer, deciduous or mixed forests within tops or crotches of trees. Species such as Coopers hawk nest along forest edges sometimes on peninsulas or small off-shore islands.</p> <p>May be found in all forested ELC Ecosites.</p> <p>May also be found in SWC, SWM, SWD and CUP3.</p>	Desktop ELC surveys, wildlife habitat assessments and GIS analysis were used to assess features within the Study Area that may support nesting habitat for woodland raptors.	Absent. Large forests with interior habitat are absent from the Study Area.
Turtle Nesting Areas	<p>Exposed mineral soil (sand or gravel) areas adjacent (<100 m) or within the following ELC Ecosites: MAM1, MAM2, MAM3, MAM4, MAM5, MAM6, SAS1, SAM1, SAF1, BOO1, FEO1.</p> <p>Best nesting habitat for turtles is close to water, away from roads and sites less prone to loss of eggs by predation from skunks, raccoons or other animals.</p> <p>For an area to function as a turtle-nesting area, it must provide sand and gravel that turtles are able to dig in and are located in open, sunny areas. Nesting areas on the sides of municipal or provincial road embankments and shoulders are not SWH.</p> <p>Sand and gravel beaches adjacent to undisturbed shallow weedy areas of marshes, lakes, and rivers are most frequently used.</p>	Desktop ELC surveys, wildlife habitat assessments and GIS analysis were used to assess features within the Study Area that may support turtle nesting areas.	Absent. There are no aquatic features in the Study Area.
Seeps and Springs	<p>Seeps/Springs are areas where ground water comes to the surface. Often they are found within headwater areas within forested habitats. Any forested Ecosite within the headwater areas of a stream could have seeps/springs.</p> <p>Any forested area (with <25% meadow/field/pasture) within the headwaters of a stream or river system.</p>	Desktop ELC surveys were used to assess features within the Study Area that may support seeps/springs.	Absent. Headwater areas are absent from the Study Area.



Candidate Wildlife Habitat	Criteria	Methods	Potential Habitat Present in the Study Area?
Amphibian Breeding Habitat (Woodland)	All Ecosites associated with these ELC Community Series; FOC, FOM, FOD, SWC, SWM, SWD. Presence of a wetland, lake, or pond within or adjacent (within 120 m) to a woodland (no minimum size). Some small wetlands may not be mapped and may be important breeding pools for amphibians. Woodlands with permanent ponds or those containing water in most years until mid-July are more likely to be used as breeding habitat.	Desktop ELC surveys were used to assess features within the Study Area that may support woodland breeding amphibians.	Absent. Vegetation communities to support SWH for amphibian breeding habitat (woodland) are absent from the Study Area.
Amphibian Breeding Habitat (Wetlands)	ELC Community Classes SW, MA, FE, BO, OA and SA. Wetland areas >120 m from woodland habitats. Wetlands and pools (including vernal pools) >500 m ² (about 25 m diameter) supporting high species diversity are significant; some small or ephemeral habitats may not be identified on MNR mapping and could be important amphibian breeding habitats. Presence of shrubs and logs increase significance of pond for some amphibian species because of available structure for calling, foraging, escape and concealment from predators. Bullfrogs require permanent water bodies with abundant emergent vegetation.	Desktop ELC surveys were used to assess features within the Study Area that may support wetland breeding amphibians.	Absent. Vegetation communities to support SWH for amphibian breeding habitat (wetland) are absent from the Study Area.
Woodland Area-sensitive Bird Breeding Habitat	Large mature forest stands, woodlots >30 ha and >200 m from the forest edge.	Absent. Features as defined by the criteria were not observed during site investigations.	Absent. Features as defined by the criteria were not observed during site investigations.

Habitats of Species of Conservation Concern

Candidate Wildlife Habitat	Criteria	Methods	Potential Habitat Present in the Study Area?
Marsh Bird Breeding Habitat	All wetland habitats with shallow water and emergent aquatic vegetation. May include any of the following Community Types: Meadow Marsh (MAM), Shallow Aquatic (SA), Open Bog (BOO), Open Fen (FEO), or for Green Heron: Swamp (SW), Marsh (MA) and Meadow (ME) Community Types.	Desktop ELC surveys were used to identify marshes with shallow water and emergent vegetation that may support marsh breeding birds.	Absent. Vegetation communities to support SWH for marsh breeding birds is absent from the Study Area.
Open Country Bird Breeding Habitat	Grassland areas > 30 ha, not Class 1 or Class 2 agricultural lands, with no row-cropping or hay or livestock pasturing in the last 5 years, in the following Community Type: Meadow (ME).	Desktop ELC surveys and GIS analysis were used to identify grassland communities within the Study Area that may support area-sensitive breeding birds.	Absent. Agriculture fields within the Study Area are used for row crops and do not support SWH for open country bird breeding habitat.



Candidate Wildlife Habitat	Criteria	Methods	Potential Habitat Present in the Study Area?
Shrub/Early Successional Bird Breeding Habitat	Old field areas succeeding to shrub and thicket habitats >10 ha, not Class 1 or Class 2 agricultural lands, with no row-cropping or intensive hay or livestock pasturing in the last 5 years, in the following Community Types: Thickets (TH), Savannahs or Woodlands (WOD).	Desktop ELC surveys and GIS analysis were used to identify large communities that may support shrub/early successional breeding birds.	Absent. The hedgerow in the Study Area is not of sufficient size to support SWH for shrub/early successional bird breeding habitat.
Terrestrial Crayfish	Meadow marshes and edges of shallow marshes (no minimum size). Vegetation communities include MAM1, MAM2, MAM3, MAM4, MAM5, MAM6, MAS1, MAS2, MAS3. Construct burrows in marshes, mudflats, meadows. Can be found far from water.	Desktop ELC surveys and wildlife habitat assessments were used to identify shallow marsh and meadow marsh communities that may support Terrestrial Crayfish within the Study Area.	Absent. Marshes to support SWH for terrestrial crayfish are absent from the Study Area.
Special Concern and Rare Wildlife Species	All special concern and provincially rare (S1-S3, SH) plant and animal species (SOCC) within potential to occur in the Study Area.	Desktop ELC surveys were used to identify suitable habitat for each potential SOCC listed in Table 3.3.	Candidate. Potential habitat for the following SOCC was identified in the Study Area: Tortricid Moth, Betrothed Underwing Moth, Monarch, Obscure Underwing Moth, Orange-tipped Oakworm Moth, Eastern Wood-pewee, and Purple Martin.

Animal Movement Corridors

Candidate Wildlife Habitat	Criteria	Methods	Potential Habitat Present in the Study Area?
Amphibian Movement Corridor	Corridors may be found in all ecosites associated with water. Determined based on identifying significant amphibian breeding habitat (wetland).	Identified after Amphibian Breeding Habitat is confirmed. Movement corridors should be considered when amphibian breeding habitat is confirmed as SWH from Amphibian Breeding Habitat.	Absent. Candidate SWH for Amphibian Breeding Habitat (Woodland and Wetland) is absent within the Study Area.



2026 Kimball-Colinville Wells Drilling Project: Environmental Report
Appendix D Archaeological Assessment Acceptance Letters
November 7, 2025

**Appendix D Archaeological Assessment
Acceptance Letters**



**Ministry of Heritage, Sport, Tourism, and
Culture Industries**

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Oct 25, 2021

Parker S. Dickson (P256)
Stantec Consulting
171 Queens London ON N6A 5J7

RE: Entry into the Ontario Public Register of Archaeological Reports: Archaeological Assessment Report Entitled, "Stage 1-2 Archaeological Assessment: Coveny and Kimball-Colinville Well Drilling, Proposed Location of TKC 68, Part of Lot 17, Concession 7, Geographic Township of Moore, now Township of St. Clair, Lambton County, Ontario ", Dated Oct 22, 2021, Filed with MHSTCI Toronto Office on N/A, MHSTCI Project Information Form Number P256-0693-2021, MHSTCI File Number 0014394

Dear Mr. Dickson:

The above-mentioned report, which has been submitted to this ministry as a condition of licensing in accordance with Part VI of the *Ontario Heritage Act*, R.S.O. 1990, c 0.18, has been entered into the Ontario Public Register of Archaeological Reports without technical review.¹

Please note that the ministry makes no representation or warranty as to the completeness, accuracy or quality of reports in the register.

Should you require further information, please do not hesitate to send your inquiry to Archaeology@Ontario.ca

cc. Archaeology Licensing Officer
Evan Tomek, Enbridge Inc.
Zora Crnojacki, Ontario Energy Board

¹In no way will the ministry be liable for any harm, damages, costs, expenses, losses, claims or actions that may result: (a) if the Report(s) or its recommendations are discovered to be inaccurate, incomplete, misleading or fraudulent; or (b) from the issuance of this letter. Further measures may need to be taken in the event that additional artifacts or archaeological sites are identified or the Report(s) is otherwise found to be inaccurate, incomplete, misleading or fraudulent.



Stage 1-2 Archaeological Assessment:
Coveny and Kimball-Colinville Well
Drilling, Proposed Location of TKC 68

Part of Lot 17, Concession 7,
Geographic Township of Moore,
now Township of St. Clair,
Lambton County, Ontario

October 22, 2021

Prepared for:

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Licensee: Parker Dickson, MA
License Number: P256
Project Information Form Number:
P256-0693-2021
Project Number: 160961448

ORIGINAL REPORT



**STAGE 1-2 ARCHAEOLOGICAL ASSESSMENT: COVENY AND KIMBALL-COLINVILLE WELL
DRILLING, PROPOSED LOCATION OF TKC 68**

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**STAGE 1-2 ARCHAEOLOGICAL ASSESSMENT: COVENY AND KIMBALL-COLINVILLE WELL
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STAGE 1-2 ARCHAEOLOGICAL ASSESSMENT: COVENY AND KIMBALL-COLINVILLE WELL DRILLING, PROPOSED LOCATION OF TKC 68

Executive Summary

Stantec Consulting Ltd. (Stantec) was retained by Enbridge Gas Inc. (Enbridge) to complete a Stage 1-2 archaeological assessment for the Coveny and Kimball-Colinville Well Drilling Project, Proposed Location of TKC 68 (the Project). The archaeological assessment is being completed during the preliminary planning phase of the Project. The Stage 1-2 archaeological assessment was carried out in accordance with the provisions of the *Ontario Heritage Act* (Government of Ontario 1990a) and the Ontario Energy Board's (OEB) established guidelines for the expansion of natural gas service in its *Guidelines for Assessing and Reporting on Natural Gas System Expansion in Ontario* (OEB 2019). Overall, the study area for this Stage 1-2 archaeological assessment comprises approximately 34.5 hectares located on part of Lot 17, Concession 7, Geographic Township of Moore, now Township of St. Clair, Lambton County, Ontario.

Stage 1-2 archaeological assessment of the study area was conducted under Project Information Form number P256-0693-2021 issued to Parker Dickson, MA, by the Ministry of Heritage, Sport, Tourism and Culture Industries (MHSTCI). Stage 1 archaeological assessment determined that the study area retained potential for the identification and recovery of archaeological resources. As such, Stage 2 archaeological assessment was completed on September 3 and 7, 2021.

Four new archaeological locations were identified during the Stage 2 survey of the study area. The Stage 2 assessment of Location 1 resulted in the identification of a single isolated find, a chipped lithic knife made of Kettle Point chert. The Stage 2 assessment of Location 2 resulted in the identification of a single isolated find, a broken projectile point manufactured from an indeterminate chert. The Stage 2 assessment of Location 3 resulted in the identification of a single isolated find, a broken projectile point manufactured from Kettle Point chert. The Stage 2 assessment of Location 4 resulted in the identification of a single isolated find, a retouched flake of indeterminate chert.

No further archaeological assessment is recommended for Location 1, Location 2, Location 3, and Location 4. No other archaeological resources were identified during the Stage 2 survey of the study area. Thus, in accordance with Section 2.2 and Section 7.8.4 Standard 3 of the MHSTCI's 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011), no further archaeological assessment of the surveyed portions of the study area is required.

The MHSTCI is asked to review the results presented and to accept this report into the *Ontario Public Register of Archaeological Reports*.

The Executive Summary highlights key points from the report only; for complete information and findings, the reader should examine the complete report.



STAGE 1-2 ARCHAEOLOGICAL ASSESSMENT: COVENY AND KIMBALL-COLINVILLE WELL DRILLING, PROPOSED LOCATION OF TKC 68

Project Personnel

Project Manager:	Mark Knight, MA, MCIP, RPP
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Acknowledgements

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Ministry of Heritage, Sport, Tourism and Culture Industries:	Robert von Bitter – Archaeological Data Coordinator



STAGE 1-2 ARCHAEOLOGICAL ASSESSMENT: COVENY AND KIMBALL-COLINVILLE WELL DRILLING, PROPOSED LOCATION OF TKC 68

Project Context

1.0 PROJECT CONTEXT

1.1 DEVELOPMENT CONTEXT

Stantec Consulting Ltd. (Stantec) was retained by Enbridge Gas Inc. (Enbridge) to complete a Stage 1-2 archaeological assessment for the Coveny and Kimball-Colinville Well Drilling Project, Proposed Location of TKC 68 (the Project). The Project includes the construction of a temporary gravel drilling pad of approximately 8,100 square meters. Access to the pad will be via a new permanent access laneway. Upon completion of drilling activities, approximately 120 metres of Nominal Pipe Size (NPS) NPS 10-inch lateral pipeline will be constructed to connect the new natural gas storage well to the existing Kimball-Colinville gathering system, and portions of the temporary gravel drilling pad will be removed such that a permanent gravel pad of 60 square meters will remain. To accommodate potential future well drilling projects, the study area for this Stage 1-2 archaeological assessment was expanded to capture more than what is required for the Project. Overall, the study area for this Stage 1-2 archaeological assessment comprises approximately 34.5 hectares located on part of Lot 17, Concession 7, Geographic Township of Moore, now Township of St. Clair, Lambton County, Ontario (Figures 1 and 2).

The archaeological assessment is being completed during the preliminary planning phase of the Project. The Stage 1-2 archaeological assessment was carried out in accordance with the provisions of the *Ontario Heritage Act* (Government of Ontario 1990a) and the Ontario Energy Board's (OEB) established guidelines for the expansion of natural gas service in its *Guidelines for Assessing and Reporting on Natural Gas System Expansion in Ontario* (OEB 2019).

1.1.1 Objectives

In compliance with the provincial standards and guidelines set out in the Ministry of Heritage, Sport, Tourism and Culture Industries' (MHSTCI) 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011), the objectives of the Stage 1 archaeological assessment are as follows:

- To provide information about the study area's geography, history, previous archaeological fieldwork, and current land conditions.
- To evaluate the study area's archaeological potential which will support recommendations for Stage 2 survey for all or parts of the property.
- To recommend appropriate strategies for Stage 2 survey.

To meet these objectives, Stantec archaeologists employed the following research strategies:

- A review of relevant archaeological, historical, and environmental literature pertaining to the study area.
- A review of the land use history, including historical atlases.
- An examination of the *Ontario Archaeological Sites Database* to determine the presence of registered archaeological sites in and around the study area.



STAGE 1-2 ARCHAEOLOGICAL ASSESSMENT: COVENY AND KIMBALL-COLINVILLE WELL DRILLING, PROPOSED LOCATION OF TKC 68

Project Context

In compliance with the provincial standards and guidelines set out in the MHSTCI's 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011), the objectives of the Stage 2 archaeological assessment are as follows:

- To document archaeological resources within the study area.
- To determine whether the study area contains archaeological resources requiring further assessment.
- To recommend appropriate Stage 3 assessment strategies for archaeological resources identified.

Permission to enter the study area to conduct the archaeological assessment was provided by Enbridge in consultation with individual landowner consent, as required.

1.2 HISTORICAL CONTEXT

1.2.1 Post-contact Indigenous Resources

“Contact” is typically used as a chronological benchmark when discussing Indigenous archaeology in Canada and describes the contact between Indigenous and European cultures. The precise moment of contact is a constant matter of discussion. Contact in what is now the province of Ontario is broadly assigned to the 16th century (Loewen and Chapdelaine 2016).

At the turn of the 16th century, the region of the study area is documented to have been occupied by the Western Basin Tradition archaeological culture (see Section 1.3.2). Following the turn of the 17th century, the region of the study area is understood to have been within the territory of the Fire Nation, an Algonquian group occupying the western end of Lake Erie. It is argued, however, that the Attiwandaron (Neutral) expanded extensively westward, displacing the Fire Nation, and occupying the region of the current Municipality of Chatham-Kent (Lennox and Fitzgerald 1990:418-419). It is debated whether the Fire Nation was descendent from the archaeologically described Western Basin Tradition or if they migrated into the western part of Lake Erie, displacing a previous Indigenous culture (Murphy and Ferris 1990:193-194). Historians understand that the displaced Fire Nation moved across the St. Clair and Detroit Rivers into lower Michigan and their populations are synonymous with the later Kickapoo, Miami, Potawatomi, Fox, and Sauk (Heidenreich 1990: Figure 15.1). Bkejwanong (Walpole Island) First Nation tradition states that nations of the Three Fires (a political confederacy constituted of the Pottawatomi, the Ojibwa, and Ottawa) have occupied the delta of the St. Clair River and the surrounding region continually for thousands of years (Walpole Island First Nation [WIFN] n.d.). In 1649, the Seneca, with the Mohawk, led a campaign into southern Ontario and dispersed the resident Indigenous populations and the Seneca used the lower Great Lakes basin as a prolific hinterland for beaver hunting (Heidenreich 1978; Trigger 1978:345).

By 1690, Ojibwa-speaking people had begun to displace the Seneca from southern Ontario. The Indigenous economy, since the turn of the 18th century, focused on fishing and the fur trade, supplemented by agriculture and hunting (Konrad 1981; Rogers 1978). The study area falls within the traditional territory of the WIFN and the Aamjiwnaang (Sarnia) First Nation (AFN), the Wiikwedong and Aazhoodena (Kettle Point and Stony Point) First Nation (Lytwyn 2009), and the Deshkaan Ziibing Anishnaabeg (Chippewas of the Thames First Nation [COTTFN]). Some populations of Wyandot (a nation



STAGE 1-2 ARCHAEOLOGICAL ASSESSMENT: COVENY AND KIMBALL-COLINVILLE WELL DRILLING, PROPOSED LOCATION OF TKC 68

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of historically amalgamated Tionontate and Huron-Wendat populations) also had moved to the region of Lake St. Clair at the turn of the 18th century and resided with the Three Fires nations (Tooker 1978:398).

The expansion of the fur trade led to increased interaction between European and Indigenous people, and ultimately intermarriage between European men and Indigenous women. During the 18th century the progeny of these marriages began to no longer identify with either their paternal or maternal cultures, but instead as Métis. The ethnogenesis of the Métis progressed with the establishment of distinct Métis communities along the major waterways in the Great Lakes of Ontario. Métis communities were primarily focused around the upper Great Lakes and along Georgian Bay, however, Métis people have historically lived throughout Ontario (Métis Nation of Ontario 2021; Stone and Chaput 1978:607-608).

By 1730, it is reported that a community of approximately 300 people were living at the north end of Lake St. Clair (Rogers 1978:762). D'Anville's 1755 map (Konrad 1981: Plate 1) indicates the Mississauga (an Ojibwa nation) on the east bank of the St. Clair River. By 1760, the Chippewa community was established on the Thames River, southwest of present-day London, Ontario (COTTEN 2021). By approximately 1790, the region of the study area was occupied by populations of the Three Fires nations and Wyandot. By 1796, the Three Fires community of Chenail Ecarté was established (Feest and Feest 1978:777-779).

Under British administration in the 19th century, the various Indigenous groups were divided into separate bands. The Anishinaabe included the western Algonquian peoples, among them the Chippewa and the Odawa. Until the 18th century, the central Algonquian-speaking peoples, including the Potawatomi, were located in the Michigan Peninsula (Blackbird 1887). In the middle of the 18th century, the Chippewa were located on the south shores of Lake Huron, the east shores of Georgian Bay, and on the west end of Lake Ontario. Indigenous peoples and their communities continue to play a large role in the occupation of the study area and its environs.

Since contact with European explorers and immigrants, and later, with the establishment of provincial and federal governments (the Crown), the lands within Ontario have been included in various treaties, land claims, and land cessions. Following the American Revolutionary War, the Crown focused on the settlement of European immigrants into what became the province of Upper Canada in 1791. To enable widespread settlement, the Crown negotiated a series of treaties with Indigenous peoples. Figure 3 provides a map of southwestern Ontario illustrating early treaties and purchases (Government of Canada n.d.), including a vast tract of land southeast of Lake Huron with a treaty or agreement date of July 10, 1824. Later, the chiefs of the Chippewa and representatives of the Crown established this vast tract of land as Treaty Number 27 ½. Though not an exhaustive list, Morris (1943) provides a general outline of some of the treaties within the Province of Ontario from 1783 to 1923. Figure 4 provides an approximate outline of Treaty Number 27 ½, illustrated by the letter "T", based on a series of compilations by Morris (1943). The lands of Treaty Number 27 ½ are described by Morris (1943:26) as:

...being an agreement made at Amherstburg in the Western District of the Province of Upper Canada on the 26th of April, 1825, between James Givens, Esquire, Superintendent of Indian Affairs, on behalf of His Majesty King George the Fourth and the Chiefs and Principal Men of the part of the Chippewa Nation of Indians, inhabiting and claiming the tract of land



STAGE 1-2 ARCHAEOLOGICAL ASSESSMENT: COVENY AND KIMBALL-COLINVILLE WELL DRILLING, PROPOSED LOCATION OF TKC 68

Project Context

.... Wawanosh Township in the County of Huron was named after Way-way-nosh the principal Chief of the Band making this Treaty.

The nature of Indigenous settlement size, population distribution, and material culture shifted as European settlers encroached upon Indigenous territory. However, despite this shift, “written accounts of material life and livelihood, the correlation of historically recorded villages to their archaeological manifestations, and the similarities of those sites to more ancient sites have revealed an antiquity to documented cultural expressions that confirms a deep historical continuity to...systems of ideology and thought” (Ferris 2009:114). As a result, Indigenous peoples have left behind archaeological resources throughout the region which show continuity with past peoples, even if they have not been explicitly recorded in Euro-Canadian documentation.

1.2.2 Euro-Canadian Resources

In 1791, the Provinces of Upper Canada and Lower Canada were created from the former Province of Quebec by an act of British Parliament. At this time, Colonel John Graves Simcoe was appointed as the Lieutenant Governor of Upper Canada and was tasked with governing the new province, directing its European settlement and establishing a constitutional government modelled after that of Britain (Petryshyn 1985). In 1792, Simcoe divided Upper Canada into 19 counties consisting of previously settled lands, new lands opened for settlement, and lands not yet acquired by the Crown. These new counties stretched from Essex in the west to Glengarry in the east.

In discussing the late 19th century historical mapping, it must be remembered that historical county atlases were produced primarily to identify factories, offices, residences, and landholdings of subscribers and were funded by subscription fees. Landowners who did not subscribe were not always listed on the maps (Caston 1997:100). As such, structures were not necessarily depicted or placed accurately (Gentilcore and Head 1984). Review of historical mapping also has inherent accuracy difficulties due to potential error in geo-referencing. Geo-referencing is conducted by assigning spatial coordinates to fixed locations and using these points to spatially reference the remainder of the map. Due to changes in “fixed” locations over time (e.g., road intersections, road alignments, watercourses, etc.), errors and difficulties of scale, and the relative idealism of the historical cartography, historic maps may not translate accurately into real space points. This may provide obvious inconsistencies during historical map review.

Lambton County was originally part of the District of Hesse, which in 1792 was renamed the Western District. The Western District consisted of Kent (which included Lambton) and Essex Counties, and was named after John George Lambton, first Earl of Durham. Lambton was the author of the Durham Report, which investigated the issues that led to the Upper Canada Rebellion of 1837. The townships in Lambton were not completely surveyed until 1835. After the *Municipal Act* of 1849, which provided a means of government for towns and counties, several counties amalgamated and separated over the next few years with the former Kent County. Lambton County finally became an independent county in 1853 (Elford 1982).



STAGE 1-2 ARCHAEOLOGICAL ASSESSMENT: COVENY AND KIMBALL-COLINVILLE WELL DRILLING, PROPOSED LOCATION OF TKC 68

Project Context

Euro-Canadian settlement of Lambton County began as early as 1796 as French settlers began living along the banks of the St. Clair River. Large-scale European settlement, however, did not begin until the 1830s. The majority of the surveyed lots in the townships of Lambton County were assigned to children of United Empire Loyalists, who sold their rights to early settlers. Early European settlers were primarily tenant farmers from Britain as well as artisans and retired military men. The population of Lambton County swelled in the 1850s with the establishment of the Great Western Railway and the Great Trunk (later renamed Grand Trunk) Railway. This growth remained steady until 1891, when the population peaked at 58,810 European settlers (Elford 1982).

Moore Township, with its easy accessibility to the St. Clair River, was one of the first areas in Lambton County to be settled by European immigrants. Fifteen French-speaking and five English-speaking families were among the first Europeans to settle the area. Part of Moore Township was bought from the Aamjiwnaang First Nation in 1827 and a reserve was partitioned for the Indigenous community along the township's northern border. The township was named after Sir John Moore, the celebrated British General killed in the Battle of Corunna, in 1829. The survey of Moore township was completed in 1829 by Roswell Mount, who squeezed as many lots along the St. Clair River front as possible for veterans of the Napoleonic Wars. Figure 5 illustrates a portion of the 1829 plan of Moore Township (Mount 1829). No Indigenous notations are depicted in close proximity to the study area on the 1829 plan of Moore Township, however, the southwest corner of the township, including 2,575 acres, had been dedicated as an "Indian Reserve". A landowner for Lot 17, Concession 7 is depicted on the 1829 plan and though it is difficult to clearly read the name, the inscription may be "Mary Hughes".

A portion of the 1880 map of Moore Township from the *Illustrated Historical Atlas of the County of Lambton, Ontario* (Belden & Co. 1880) is illustrated in Figure 6. Many lots on the 1880 map do not show a landowner name or evidence of structures; however, this is because only the names of subscribers to the *Dominion Atlas of Canada* were shown. In fact, the lots of Moore Township would have been claimed by various private landowners, holdings companies, the Crown, and the Clergy by the time of the 1880 map. The population of Moore Township had reached 5,146 by 1881, in large part to the advent of the Canada Southern Railway (Mika and Mika 1983). Though the interior of the township had been settled, the population of the township and economic centres continued to be focused along the St. Clair River, particularly in the communities of Corunna, Mooretown, and Courtright. A landowner is not illustrated for Lot 17, Concession 7 on the 1880 map of Moore Township, and no structures are depicted. The majority of the region surrounding the study area has been subject to European-style agricultural practices for over 100 years, having been settled by Euro-Canadian farmers by the late 19th century. Much of the region today continues to be used for agricultural purposes.

1.3 ARCHAEOLOGICAL CONTEXT

1.3.1 The Natural Environment

The study area is situated within the St. Clair Clay Plain physiographic region. This region is described as:



STAGE 1-2 ARCHAEOLOGICAL ASSESSMENT: COVENY AND KIMBALL-COLINVILLE WELL DRILLING, PROPOSED LOCATION OF TKC 68

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Adjoining Lake St. Clair in Essex and Kent County Counties and the St. Clair River in Lambton County are extensive clay plains covering 2,270 square miles. The region is one of little relief, lying between 575 and 700 feet a.s.l. [above sea level], except for the moraine at Ridgetown and Blenheim which rises 50 to 500 feet higher....Glacial Lake Whittlesey, which deeply covered all of these lands, and Lake Warren which subsequently covered nearly the whole area, failed to leave deep stratified beds of sediment on the underlying clay till except around Chatham, between Blenheim and the Rondeau marshes, and in a few other smaller areas. Most of Lambton and Essex Counties, therefore, are essentially till plains smoothed by shallow deposits of lacustrine clay which settled in the depressions while the knolls were being lowered by wave action.

(Chapman and Putnam 1986:147)

The *Soil Survey of Lambton County* (Matthews *et al.* 1957) indicates that soils within the study area comprise Caistor clay and Brookston clay. Caistor clay is a medium lime content clay till with imperfect drainage, and Brookston clay is a high lime context clay with poor drainage (Matthews *et al.* 1957). Agricultural fields in this area commonly have tile drainage to increase the agricultural productivity. Although not ideal, Caistor clay and Brookston clay would also have been suitable for Indigenous agricultural practices.

Potable water is the single most important resource for any extended human occupation or settlement and since water sources in southwestern Ontario have remained relatively stable over time, current proximity to drinkable water is regarded as a useful index for the evaluation of archaeological site potential. In fact, distance to water is one of the most commonly used variables for predictive modeling of archaeological site location in Ontario. The closest extant source of potable water to the study area is Burton Creek, located approximately 1.8 kilometres to the east. Generally, the flow of natural water courses throughout the township has been altered through realignments from the construction of multiple municipal drains. In fact, modern municipal drains are located adjacent to the north and east of the study area.

1.3.2 Pre-contact Indigenous Resources

This portion of southwestern Ontario has been occupied by Indigenous peoples since the retreat of the Wisconsin glacier approximately 11,000 years ago. Much of what is understood about the lifeways of Indigenous peoples is derived from archaeological evidence and ethnographic analogy. In Ontario, Indigenous culture prior to the period of contact with European peoples has been distinguished into cultural periods based on observed changes in material culture. These cultural periods are largely based in observed changes in formal lithic tools, and separated into the Early Paleo-Indian, Late Paleo-Indian, Early Archaic, Middle Archaic, and Late Archaic periods. Following the advent of ceramic technology in the Aboriginal archaeological record, cultural periods are separated into the Early Woodland, Middle Woodland, and Late Woodland periods, based primarily on observed changes in formal ceramic decoration. It should be noted that these cultural periods do not necessarily represent specific cultural identities but are a useful paradigm for understanding changes in Indigenous culture through time. The current understanding of Indigenous archaeological culture is summarized in Table 1 below, based on



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Ellis and Ferris (1990). The provided time periods are based on the “Common Era” calendar notation system: Before Common Era (BCE) and Common Era (CE).

Table 1: Generalized Cultural Chronology of the Study Area

Period	Characteristics	Time	Comments
Early Paleo-Indian	Fluted Projectiles	9000 – 8400 BCE	Spruce parkland/caribou hunters
Late Paleo-Indian	Hi-Lo Projectiles	8400 – 8000 BCE	Smaller but more numerous sites
Early Archaic	Kirk and Bifurcate Base Points	8000 – 6000 BCE	Slow population growth
Middle Archaic	Brewerton-like Points	6000 – 2500 BCE.	Environment similar to present
Late Archaic	Narrow Point	2500 – 1800 BCE	Increasing site size
	Broad Point	1800 – 1500 BCE	Large chipped lithic tools
	Small Point	1500 – 1100 BCE	Introduction of bow hunting
Terminal Archaic	Hind Points	1100 – 950 BCE	Emergence of true cemeteries
Early Woodland	Meadowood Points	950 – 400 BCE	Introduction of pottery
Middle Woodland	Couture Corded Pottery	400 BCE – 500 CE	Increased sedentism
	Riviere au Vase Phase	500 – 800 CE	Seasonal hunting and gathering
Late Woodland	Younge Phase	800 – 1200 CE	Incipient agriculture
	Springwells Phase	1200 – 1400 CE	Agricultural villages
	Wolf Phase	1400 – 1550 CE	Earth worked villages, warfare
Contact Indigenous	Various Algonkian and Iroquoian Groups	1600 – 1875 CE	Early written records and treaties
Historical	French/Euro-Canadian	1749 CE – present	European settlement

Local environmental conditions were significantly different from what they are today. Ontario’s first peoples would have crossed the landscape in small groups in search of food, particularly migratory game species. In this area, caribou may have been a Paleo-Indian diet staple, supplemented by wild plants, small game, birds, and fish. Given the low density of populations on the landscape at this time and their mobile nature, Paleo-Indian sites are small and ephemeral. Such sites are sometimes identified by the presence of fluted points and are frequently located adjacent to the shorelines of large glacial lakes (Ellis and Deller 1990).

Archaeological records indicate subsistence changes around 8000 BCE at the start of the Archaic Period in southwestern Ontario. Since the large mammal species that formed the basis of the Paleo-Indian diet became extinct or moved north with the warming of the climate, Archaic populations had a more varied diet, exploiting a range of plants and bird, mammal, and fish species. Reliance on specific food resources such as fish, deer, and several nut species became more noticeable through the Archaic Period and the presence of warmer, more hospitable environs led to expansion of group and family sizes. In the archaeological record, this is evident in the presence of larger sites. The coniferous forests of earlier times were replaced by stands of mixed coniferous and deciduous trees by about 4000 BCE. The transition to more productive environmental circumstances led to a rise in population density. As a result,



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Archaic sites become more abundant over time. Artifacts typical of these occupations include a variety of stemmed and notched projectile points; chipped stone scrapers; ground stone tools (e.g., celts, adzes, etc.) and ornaments (e.g., bannerstones, gorgets, etc.); bifaces or tool blanks; animal bone; and chert waste flakes, a byproduct of the tool making process (Ellis *et al.* 1990).

Significant changes in cultural and environmental patterns occurred in the Early and Middle Woodland periods (*circa* 950 BCE to 800 CE). Occupations became increasingly more permanent in this period, culminating in major semi-permanent villages by roughly 1,000 years ago. Archaeologically, the most significant changes by Woodland peoples were the appearance of artifacts manufactured from modeled clay and the emergence of more sedentary villages. The earliest pottery was crudely made by the coiling method and early house structures were simple oval enclosures. The Early and Middle Woodland periods are also characterized by extensive trade in raw materials, objects and finished tools, with sites in Ontario containing trade items with origins in the Mississippi and Ohio River valleys (Spence *et al.* 1990).

By the Late Woodland period there was a distinctive cultural occupation in southwestern Ontario, including Essex, Kent, and Lambton counties. The primary Late Woodland occupants of this area were populations described by archaeologists as Western Basin Tradition. Murphy and Ferris (1990:189) indicate that these people had ties with populations in southeastern Michigan and northwestern Ohio and represent an *in situ* cultural development from the earlier Middle Woodland groups. The Western Basin Tradition seems to have been centred in the territory comprising the eastern side of the drainage basin of Lake Erie, Lake St. Clair, and the southern end of Lake Huron. The Western Basin Tradition is divided up into four phases based on differences in settlement and subsistence strategies and pottery attributes. By the time of increased European interaction in the last half of the 16th century and early 17th century, there were no Western Basin Tradition sites in the Essex County area, their inhabitants having moved west into Michigan (Ferris 2009:32-33).

1.3.3 Registered Archaeological Sites and Surveys

In Canada, archaeological sites are registered within the Borden system, a national grid system designed by Charles Borden in 1952 (Borden 1952). The grid covers the entire surface area of Canada and is divided into major units containing an area that is two degrees in latitude by four degrees in longitude. Major units are designated by upper case letters. Each major unit is subdivided into 288 basic unit areas, each containing an area of 10 minutes in latitude by 10 minutes in longitude. The width of basic units reduces as one moves north due to the curvature of the earth. In southern Ontario, each basic unit measures approximately 13.5 kilometres east-west by 18.5 kilometres north-south. In northern Ontario, adjacent to Hudson Bay, each basic unit measures approximately 10.2 kilometres east-west by 18.5 kilometres north-south. Basic units are designated by lower case letters. Individual sites are assigned a unique, sequential number as they are registered. These sequential numbers are issued by the MHSTCI who maintain the *Ontario Archaeological Sites Database*. The study area under review is located within Borden Block AeHo.

Information concerning specific site locations is protected by provincial policy and is not fully subject to the *Freedom of Information and Protection of Privacy Act* (Government of Ontario 1990b). The release of such information in the past has led to looting or various forms of illegally conducted site destruction.



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Confidentiality extends to media capable of conveying location, including maps, drawings, or textual descriptions of a site location. The MHSTCI will provide information concerning site location to the party or an agent of the party holding title to a property, or to a licensed archaeologist with relevant cultural resource management interests.

An examination of the *Ontario Archaeological Sites Database* has shown that there are no registered archaeological sites within one kilometre of the study area (Government of Ontario 2021a). A query of the *Ontario Public Record of Archaeological Reports* was completed to identify previous archaeological surveys which may document work within 50 metres of the study area. Based on the query, no previous archaeological surveys have been completed within 50 metres of the study area (Government of Ontario 2021b).

1.3.4 Archaeological Potential

Archaeological potential is established by determining the likelihood that archaeological resources may be present within a study area. Stantec applied archaeological potential criteria commonly used by MHSTCI (Government of Ontario 2011) to determine areas of archaeological potential within the region under study. These variables include proximity to previously identified archaeological sites, distance to various types of water sources, soil texture and drainage, glacial geomorphology, elevated topography, and the general topographic variability of the area. Extensive land disturbance can eradicate archaeological potential (Government of Ontario 2011).

Distance to modern or ancient water sources is generally accepted as the most important determinant of past human settlement patterns and considered alone, may result in a determination of archaeological potential. However, any combination of two or more other criteria, such as well-drained soils or topographic variability, may also indicate archaeological potential.

As discussed above, distance to water is an essential factor in archaeological potential modeling. When evaluating distance to water it is important to distinguish between water and shoreline, as well as natural and artificial water sources, as these features affect site locations and types to varying degrees. The MHSTCI categorizes water sources in the following manner:

- Primary water sources: lakes, rivers, streams, creeks.
- Secondary water sources: intermittent streams and creeks, springs, marshes, and swamps.
- Past water sources: glacial lake shorelines, relic river or stream channels, cobble beaches, shorelines of drained lakes or marshes.
- Accessible or inaccessible shorelines: high bluffs, swamp or marshy lake edges, sandbars stretching into marsh.

The closest source of extant potable water is Burton Creek, located approximately 1.8 kilometres to the east of the study area. Additional ancient and/or relic tributaries of other primary and secondary water sources may have existed but are not identifiable today. Additionally, natural drainage in the area has been significantly altered through the establishment of municipal drainage channels. Soil texture can be an important determinant of past settlement, usually in combination with other factors such as



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topography. As indicated previously, soil within the study area comprises Caistor clay and Brookston clay that, while not ideal, would be suitable for Indigenous agriculture.

Archaeological potential can be extended to areas of early Euro-Canadian settlement, including places of military or pioneer settlements; early transportation routes; and properties listed on the municipal register or designated under the *Ontario Heritage Act* (Government of Ontario 1990a) or property that local histories or informants have identified with possible historical events. The 1829 plan of Moore Township notes a landowner for Lot 17, Concession 7. The *Illustrated Historical Atlas of the Lambton County, Ontario* (Belden & Co. 1880) demonstrates that the region of the study area had been occupied by Euro-Canadian settlers by the late 19th century. Though no landowners or structures are illustrated on the 1880 map of Moore Township, much of the established road system and agricultural settlement from the 19th century is still visible today.

When the above listed criteria are applied, the study area retains potential for the identification of Indigenous and Euro-Canadian archaeological resources. Thus, in accordance with Section 1.3.1 of the MHSTCI's 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011), a Stage 2 archaeological assessment was required.

1.4 EXISTING CONDITIONS

The Stage 1-2 archaeological assessment was conducted under Project Information Form (PIF) number P256-0693-2021 issued to Parker Dickson, MA, by the MHSTCI. The study area comprises approximately 34.5 hectares located on part of Lot 17, Concession 7, Geographic Township of Moore, now Township of St. Clair, Lambton County, Ontario. The study area is largely agricultural field with some previous modern disturbance from existing Enbridge and municipal infrastructure.



STAGE 1-2 ARCHAEOLOGICAL ASSESSMENT: COVENY AND KIMBALL-COLINVILLE WELL DRILLING, PROPOSED LOCATION OF TKC 68

Field Methods

2.0 FIELD METHODS

Stage 1-2 archaeological assessment of the study area was conducted under PIF number P256-0693-2021 issued to Parker Dickson, MA of Stantec by the MHSTCI. Overall, the study area comprises approximately 34.5 hectares. Prior to the start of the Stage 2 archaeological assessment, Enbridge provided preliminary mapping of the Project's proposed impacts which defined the assessment area (i.e., the study area). This mapping was then geo-referenced by Stantec's Geographical Information Services (GIS) team and a digital file (i.e., a shape file) was created of the study area. The digital file was uploaded to handheld Global Positioning Service (GPS) devices for use in the field.

The Stage 2 survey of the study area was completed on September 3, 2021 and September 7, 2021. On both days of survey, the weather was mainly sunny and warm. Darren Kipping (P422) was the Field Director on September 3, 2021, and Ruth Dickau (R1171) was the Field Director on September 7, 2021. Overall, assessment conditions were adequate and at no time was the archaeological assessment conducted when the field, weather, or lighting conditions were detrimental to the identification and recovery of archaeological resources. As part of the Stage 2 survey, Stantec archaeologists were joined by representatives from Aamjiwnaang First Nation, Chippewas of the Thames First Nation, and Walpole Island First Nation. Additional information regarding Indigenous engagement for the archaeological component of the Project can be found in the *Record of Indigenous Engagement* document associated with this report. The Record of Indigenous Engagement is a separate document submitted to the MHSTCI which may include who was engaged, engagement procedures, dates of engagement, strategies to incorporate community input, and processes for providing results to the community. Similar to sensitive information documented in the Supplementary Documentation (e.g., exact site location, UTM coordinates, etc.), the Record of Indigenous Engagement is provided as a separate document and does not form a part of the *Ontario Public Register of Archaeological Reports*.

Photographic documentation in Section 8.1 of this report confirms that field conditions met the requirements for a Stage 1-2 archaeological assessment, as per the MHSTCI's 2011 *Standards and Guidelines for Consultant Archaeologists* (Section 7.8.6 Standard 1.a; Government of Ontario 2011). An overview of the Stage 2 assessment methodology, as well as photograph locations and directions, is depicted on Figure 7 in Section 9.0 of this report.

Approximately 98.8% of the study area consists of active and ploughed agricultural field and was subject to pedestrian survey in accordance with Section 2.1.1 of the MHSTCI's 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011). Ground surface visibility during the pedestrian survey was greater than 80% and provided for adequate conditions for the identification of archaeological resources. Photographs illustrating the pedestrian survey of the study area are provided in Section 8.1.

During the pedestrian survey, when archaeological resources were identified, the survey transect was decreased to a one metre interval and spanned a minimum 20 metre radius around the identified artifact. This approach was used to determine if the artifact was an isolated find or part of a larger surface scatter, as per Section 2.1.1 Standard 7 of the MHSTCI's 2011 *Standards and Guidelines for Consultant*



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Archaeologists (Government of Ontario 2011). The artifact was collected, and a Universal Transverse Mercator (UTM) coordinate was taken as per Section 2.1 Standard 4.a of the MHSTCI's 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011). The Stage 2 surface collection was conducted according to Stage 3 controlled surface pickup (CSP) standards, as allowed by the *Fieldwork: Stage 2 – Frequently Asked Questions* document issued by the MHSTCI (Government of Ontario 2016). If the identified archaeological resource comprised a single isolated find (see Section 3.0 for record of finds for each archaeological location), no further UTM coordinates were required or recorded. The UTM coordinates were taken using ArcGIS Collector powered by ESRI, customized for archaeological survey and assessment, on a handheld mobile device paired with an R1 Receiver to an accuracy of less than one metre. The UTM coordinates are located in zone 17T and are based upon the North American Datum 1983 (NAD83). A map illustrating the exact site locations and a listing of UTM coordinates recorded during the assessment are provided in the Supplementary Documentation to this report.

The remaining portion of the study area, approximately 1.2%, was identified as previously disturbed and included existing Enbridge infrastructure (i.e., gas wells and an access laneway) and the municipal road right-of-way (ROW) with extensive drainage ditching and buried utilities. This portion of the study area was not surveyed. While this portion of the study area was not surveyed, it was photographically documented in Section 8.1 to confirm that physical features affected the ability to survey portions of the study area in accordance with Section 7.8.6 Standard 1.b of the MHSTCI's 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011).



**STAGE 1-2 ARCHAEOLOGICAL ASSESSMENT: COVENY AND KIMBALL-COLINVILLE WELL
DRILLING, PROPOSED LOCATION OF TKC 68**

Record of Finds

3.0 RECORD OF FINDS

The Stage 1-2 archaeological assessment was conducted employing the methods described in Section 2.0. An inventory of the documentary record generated by fieldwork is provided in Table 2. Four new archaeological locations were identified during the Stage 2 survey of the study area. In accordance with Section 7.12 of the MHSTCI's 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011), no Borden numbers were required for the identified archaeological locations. Maps illustrating exact site locations do not form part of this public report; they may be found in the Supplementary Documentation.

Table 2: Inventory of Documentary Record

Document Type	Current Location of Document Type	Additional Comments
2 pages of field notes	Stantec office, London, Ontario	In original field book and photocopied in project file
1 map provided by Enbridge	Stantec office, London, Ontario	Hard and digital copies in project file
23 digital photographs	Stantec office, London, Ontario	Stored digitally in project file

The material culture collected during the Stage 2 archaeological survey of the study area is contained in one Bankers box, labeled by location number and artifact type. The box will be temporarily housed at the Stantec London office until formal arrangements can be made for a transfer to a MHSTCI collections facility.

3.1 LOCATION 1

Location 1 was identified during the pedestrian survey of a ploughed agricultural field and comprises a single, isolated find of a chipped lithic knife manufactured from Kettle Point chert. The recovered artifact is illustrated on Plate 1 in Section 8.2.

Chert type identification was accomplished visually using reference materials located in the Stantec London office. Chert is a naturally occurring mineral found in sedimentary rocks that is a granular crystalline form of quartz, composed of cryptocrystalline and microcrystalline crystals (Eley and von Bitter 1989). Raw material acquisition and procurement strategies have long been theorized in academic literature. Some researchers suggest that raw material choices are purely utilitarian (e.g., Deller 1979; Ellis 1989; Parker 1986), while others suggest non-utilitarian reasons (e.g., Hall 1993; Simmons *et al.* 1984). Regardless of the reason, chert type identification and their respective quantities within a particular assemblage provide an opportunity to evaluate numerous archaeological variables, including group mobility and sedentism, lithic reduction strategy and technique, transportation, trade, and symbolism.

Kettle Point formation chert is from the Late Devonian age and is situated between the Kettle Point (Late Devonian shales) and the Ipperwash formations (Middle Devonian Limestone). It occurs as submerged outcrops that extend approximately 1,350 metres into Lake Huron (Janusas 1984). Secondary deposits have been reported in Essex County (Janusas 1984) and the Ausable Basin (Kenyon 1980; Eley and Von Bitter 1989). Kettle Point chert can be identified by the presence of a waxy lustre and occurs in a range of



STAGE 1-2 ARCHAEOLOGICAL ASSESSMENT: COVENY AND KIMBALL-COLINVILLE WELL DRILLING, PROPOSED LOCATION OF TKC 68

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colours including brown, grey and greenish colours as well as reddish purple and dark blue varieties (Eley and von Bitter 1989).

The chipped lithic knife recovered from Location 1 is bifacially worked and exhibits a higher angle flaking edge along one lateral margin than the obverse margin. The higher angle edge suggests use as a cutting edge. Overall, the knife measures 73.8 millimetres (mm) in length, 30.3 mm in width, and 11.5 mm in thickness.

3.1.1 Location 1 Artifact Catalogue

Table 3 provides the complete catalogue (Cat.) of the Stage 2 artifact assemblage recovered from Location 1.

Table 3: Location 1 Artifact Catalogue

Cat. #	Context	Artifact	Quantity	Chert	Comment
1	CSP 1	Knife	1	Kettle Point	Bifacially worked, with higher angle flaking on one lateral edge, hafting area broken and reworked; Length (L) = 73.8* mm, Width (W) = 30.3 mm, Thickness (TH) = 11.5 mm.

* Measurement taken on an incomplete margin.

3.2 LOCATION 2

Location 2 was identified during the pedestrian survey of a ploughed agricultural field and comprises a single, isolated find of a chipped lithic projectile point manufactured from an indeterminate chert. The recovered artifact is illustrated on Plate 2 in Section 8.2.

The recovered projectile point is broken at the shoulder and base. The tip is rounded and may represent repair following an impact fracture. Due to the extensive damage, the projectile point cannot be typed or assigned to a general time period of use. Overall, the projectile point measures 47.8 mm in length, 30.2 mm in width, and 6.9 mm in thickness. The base is 26.3 mm in width, with a neck width of 20.0 mm and a haft height of 14.6 mm.

3.2.1 Location 2 Artifact Catalogue

Table 4 provides the complete catalogue (Cat.) of the Stage 2 artifact assemblage recovered from Location 2.

Table 4: Location 2 Artifact Catalogue

Cat. #	Context	Artifact	Quantity	Chert	Comment
1	CSP 1	Projectile point	1	Indeterminate	Broken shoulder and asymmetrically flaked base, unevenly side-notched, concave or notched base, triangular blade, chert is rough, light coloured; L = 47.8 mm, W = 30.2* mm, Th = 6.9 mm, base W = 26.3 mm, neck W = 20.0 mm, haft height = 14.6 mm.

* Measurement taken on an incomplete margin.



**STAGE 1-2 ARCHAEOLOGICAL ASSESSMENT: COVENY AND KIMBALL-COLINVILLE WELL
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3.3 LOCATION 3

Location 3 was identified during the pedestrian survey of a ploughed agricultural field and comprises a single, isolated find of a chipped lithic projectile point manufactured from Kettle Point chert. The recovered artifact is illustrated on Plate 3 in Section 8.2.

The recovered projectile point is broken at the tip and base, and high angle retouch is evident on one lateral margin suggesting the projectile point was re-worked as a scraping or cutting edge. Due to the extensive damage, the projectile point cannot be typed or assigned to a general time period of use. Overall, the projectile point measures 67.2 mm in length, 30.5 mm in width, and 7.4 mm in thickness. The base is 20.6 mm in width, with a neck width of 21.8 mm and a haft height of 10.6 mm.

3.3.1 Location 3 Artifact Catalogue

Table 5 provides the complete catalogue (Cat.) of the Stage 2 artifact assemblage recovered from Location 3.

Table 5: Location 3 Artifact Catalogue

Cat. #	Context	Artifact	Quantity	Chert	Comment
1	CSP 1	Projectile point	1	Kettle Point	Broken tip and base; reworked lateral margin; L = 67.2* mm, W = 30.5 mm, TH = 7.4 mm, base W = 20.6* mm, neck W = 21.8 mm, haft height = 10.6 mm.

* Measurement taken on an incomplete margin.

3.4 LOCATION 4

Location 4 was identified during the pedestrian survey of a ploughed agricultural field and comprises a single, isolated find of a retouched flake of an indeterminate chert. The recovered artifact is illustrated on Plate 4 in Section 8.2.

Retouched flakes are fragments of chipping detritus that display intentional chipping or sharpening marks along their edges. Expedient tools, such as retouched flakes, cannot be used to determine the cultural affiliation or time period of the occupation of a site.

3.4.1 Location 4 Artifact Catalogue

Table 6 provides the complete catalogue (Cat.) of the Stage 2 artifact assemblage recovered from Location 4.

Table 6: Location 4 Artifact Catalogue

Cat. #	Context	Artifact	Quantity	Chert	Comment
1	CSP 1	Retouched flake	1	Kettle Point	Retouch along curved edge; other edges broken.



STAGE 1-2 ARCHAEOLOGICAL ASSESSMENT: COVENY AND KIMBALL-COLINVILLE WELL DRILLING, PROPOSED LOCATION OF TKC 68

Analysis and Conclusions

4.0 ANALYSIS AND CONCLUSIONS

Four new archaeological locations were identified during the Stage 2 survey of the study area for the Project.

4.1 LOCATION 1

The Stage 2 assessment of Location 1 resulted in the identification of a single isolated find, a chipped lithic knife made of Kettle Point chert. Chert knives are a most common Indigenous lithic tool and could be further refined into a variety of other tools with different functions. Due to the long span of use of knives, and other bifacial tools, they cannot be used to determine the cultural affiliation or time period of the occupation of a site. Given the temporally non-diagnostic nature and paucity of finds, the cultural heritage value or interest of Location 1 is judged to be sufficiently documented in accordance with Section 2.2 of the MHSTCI's 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011).

4.2 LOCATION 2

The Stage 2 assessment of Location 2 resulted in the identification of a single isolated find, a broken projectile point manufactured from an indeterminate chert. Due to the extensive damage of the recovered projectile point, it cannot be definitively typed or assigned to a time period of use. Given the temporally non-diagnostic nature and paucity of finds, the cultural heritage value or interest of Location 2 is judged to be sufficiently documented in accordance with Section 2.2 of the MHSTCI's 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011).

4.3 LOCATION 3

The Stage 2 assessment of Location 3 resulted in the identification of a single isolated find, a broken projectile point manufactured from Kettle Point chert. Due to the extensive damage of the recovered projectile point, it cannot be definitively typed or assigned to a time period of use. Given the temporally non-diagnostic nature and paucity of finds, the cultural heritage value or interest of Location 3 is judged to be sufficiently documented in accordance with Section 2.2 of the MHSTCI's 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011).

4.4 LOCATION 4

The Stage 2 assessment of Location 4 resulted in the identification of a single isolated find, a retouched flake of indeterminate chert. Expedient tools, such as retouched flakes, cannot be used to determine the cultural affiliation or time period of the occupation of a site. Given the temporally non-diagnostic nature and paucity of finds, the cultural heritage value or interest of Location 4 is judged to be sufficiently documented in accordance with Section 2.2 of the MHSTCI's 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011).



STAGE 1-2 ARCHAEOLOGICAL ASSESSMENT: COVENY AND KIMBALL-COLINVILLE WELL DRILLING, PROPOSED LOCATION OF TKC 68

Recommendations

5.0 RECOMMENDATIONS

The Stage 1 archaeological assessment determined that the study area retained potential for the identification and recovery of archaeological resources. As such, Stage 2 archaeological assessment was required. Stage 2 archaeological assessment was completed on September 3, 2021 and September 7, 2021. Four new archaeological locations were identified during the Stage 2 survey.

5.1 LOCATION 1

Given the temporally non-diagnostic nature and paucity of finds, the cultural heritage value or interest of Location 1 is judged to be sufficiently documented in accordance with Section 2.2 of the MHSTCI's 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011). Thus, **no further archaeological assessment is recommended for Location 1.**

5.2 LOCATION 2

Given the temporally non-diagnostic nature and paucity of finds, the cultural heritage value or interest of Location 2 is judged to be sufficiently documented in accordance with Section 2.2 of the MHSTCI's 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011). Thus, **no further archaeological assessment is recommended for Location 2.**

5.3 LOCATION 3

Given the temporally non-diagnostic nature and paucity of finds, the cultural heritage value or interest of Location 3 is judged to be sufficiently documented in accordance with Section 2.2 of the MHSTCI's 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011). Thus, **no further archaeological assessment is recommended for Location 3.**

5.4 LOCATION 4

Given the temporally non-diagnostic nature and paucity of finds, the cultural heritage value or interest of Location 4 is judged to be sufficiently documented in accordance with Section 2.2 of the MHSTCI's 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011). Thus, **no further archaeological assessment is recommended for Location 4.**

5.5 SUMMARY

Four new archaeological locations were identified during the Stage 2 survey of the study area. No further archaeological assessment is recommended for Location 1, Location 2, Location 3, and Location 4. No other archaeological resources were identified during the Stage 2 survey of the study area. Thus, in accordance with Section 2.2 and Section 7.8.4 Standard 3 of the MHSTCI's 2011 *Standards and*



**STAGE 1-2 ARCHAEOLOGICAL ASSESSMENT: COVENY AND KIMBALL-COLINVILLE WELL
DRILLING, PROPOSED LOCATION OF TKC 68**

Recommendations

Guidelines for Consultant Archaeologists (Government of Ontario 2011), no further archaeological assessment of the surveyed portions of the study area is required.

The MHSTCI is asked to review the results presented and to accept this report into the *Ontario Public Register of Archaeological Reports*.



STAGE 1-2 ARCHAEOLOGICAL ASSESSMENT: COVENY AND KIMBALL-COLINVILLE WELL DRILLING, PROPOSED LOCATION OF TKC 68

Advice on Compliance with Legislation

6.0 ADVICE ON COMPLIANCE WITH LEGISLATION

In accordance with Section 7.5.9 of the MHSTCI's 2011 Standards and Guidelines for Consultant Archaeologists (Government of Ontario 2011), the following standard statements are a required component of archaeological reporting and are provided verbatim from the MHSTCI's 2011 Standards and Guidelines for Consultant Archaeologists (Government of Ontario 2011).

This report is submitted to the Minister of Heritage, Sport, Tourism and Culture Industries as a condition of licensing in accordance with Part VI of the *Ontario Heritage Act*, R.S.O. 1990, c. O.18 (Government of Ontario 1990a). The report is reviewed to ensure that it complies with the standards and guidelines that are issued by the Minister, and that the archaeological fieldwork and report recommendations ensure the conservation, protection and preservation of the cultural heritage of Ontario. When all matters relating to archaeological sites within the project area of a development proposal have been addressed to the satisfaction of the Ministry of Heritage, Sport, Tourism and Culture Industries, a letter will be issued by the ministry stating that there are no further concerns with regard to alterations to archaeological sites by the proposed development.

It is an offence under Sections 48 and 69 of the *Ontario Heritage Act* (Government of Ontario 1990a) for any party other than a licensed archaeologist to make any alteration to a known archaeological site or to remove any artifact or other physical evidence of past human use or activity from the site, until such time as a licensed archaeologist has completed fieldwork on the site, submitted a report to the Minister stating that the site has no further cultural heritage value or interest, and the report has been filed in the *Ontario Public Register of Archaeological Reports* referred to in Section 65.1 of the *Ontario Heritage Act* (Government of Ontario 1990a).

Should previously undocumented archaeological resources be discovered, they may be a new archaeological site and therefore subject to Section 48(1) of the *Ontario Heritage Act* (Government of Ontario 1990a). The proponent or person discovering the archaeological resources must cease alteration of the site immediately and engage a licensed consultant archaeologist to carry out archaeological fieldwork, in compliance with Section 48(1) of the *Ontario Heritage Act* (Government of Ontario 1990a).

The *Funeral, Burial and Cremation Services Act*, 2002, S.O. 2002, c. 33 (Government of Ontario 2002), requires that any person discovering or having knowledge of a burial site shall immediately notify the police or coroner. It is recommended that the Registrar of Cemeteries at the Ministry of Government and Consumer Services is also immediately notified.



STAGE 1-2 ARCHAEOLOGICAL ASSESSMENT: COVENY AND KIMBALL-COLINVILLE WELL DRILLING, PROPOSED LOCATION OF TKC 68

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STAGE 1-2 ARCHAEOLOGICAL ASSESSMENT: COVENY AND KIMBALL-COLINVILLE WELL DRILLING, PROPOSED LOCATION OF TKC 68

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STAGE 1-2 ARCHAEOLOGICAL ASSESSMENT: COVENY AND KIMBALL-COLINVILLE WELL DRILLING, PROPOSED LOCATION OF TKC 68

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STAGE 1-2 ARCHAEOLOGICAL ASSESSMENT: COVENY AND KIMBALL-COLINVILLE WELL DRILLING, PROPOSED LOCATION OF TKC 68

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**STAGE 1-2 ARCHAEOLOGICAL ASSESSMENT: COVENY AND KIMBALL-COLINVILLE WELL
DRILLING, PROPOSED LOCATION OF TKC 68**

Images

8.0 IMAGES

8.1 PHOTOGRAPHS

Photo 1: View of study area, facing south



Photo 2: View of pedestrian survey, facing north



Photo 3: View of pedestrian survey, facing southeast



Photo 4: View of pedestrian survey, facing southeast



STAGE 1-2 ARCHAEOLOGICAL ASSESSMENT: COVENY AND KIMBALL-COLINVILLE WELL DRILLING, PROPOSED LOCATION OF TKC 68

Images

Photo 5: View of pedestrian survey, facing northwest



Photo 6: View of pedestrian survey, facing west



Photo 7: View of typical existing gas well within study area, facing northeast



Photo 8: View of existing municipal road ROW with extensive drainage ditching, facing southwest



**STAGE 1-2 ARCHAEOLOGICAL ASSESSMENT: COVENY AND KIMBALL-COLINVILLE WELL
DRILLING, PROPOSED LOCATION OF TKC 68**

Images

8.2 PLATES

Plate 1: Artifact from Location 1



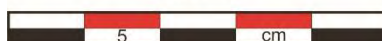
Knife,
Cat. #1



Plate 2: Artifact from Location 2



Projectile Point,
Cat. #1



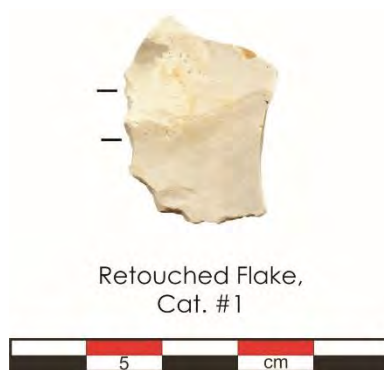
**STAGE 1-2 ARCHAEOLOGICAL ASSESSMENT: COVENY AND KIMBALL-COLINVILLE WELL
DRILLING, PROPOSED LOCATION OF TKC 68**

Images

Plate 3: Artifact from Location 3



Plate 4: Artifact from Location 4



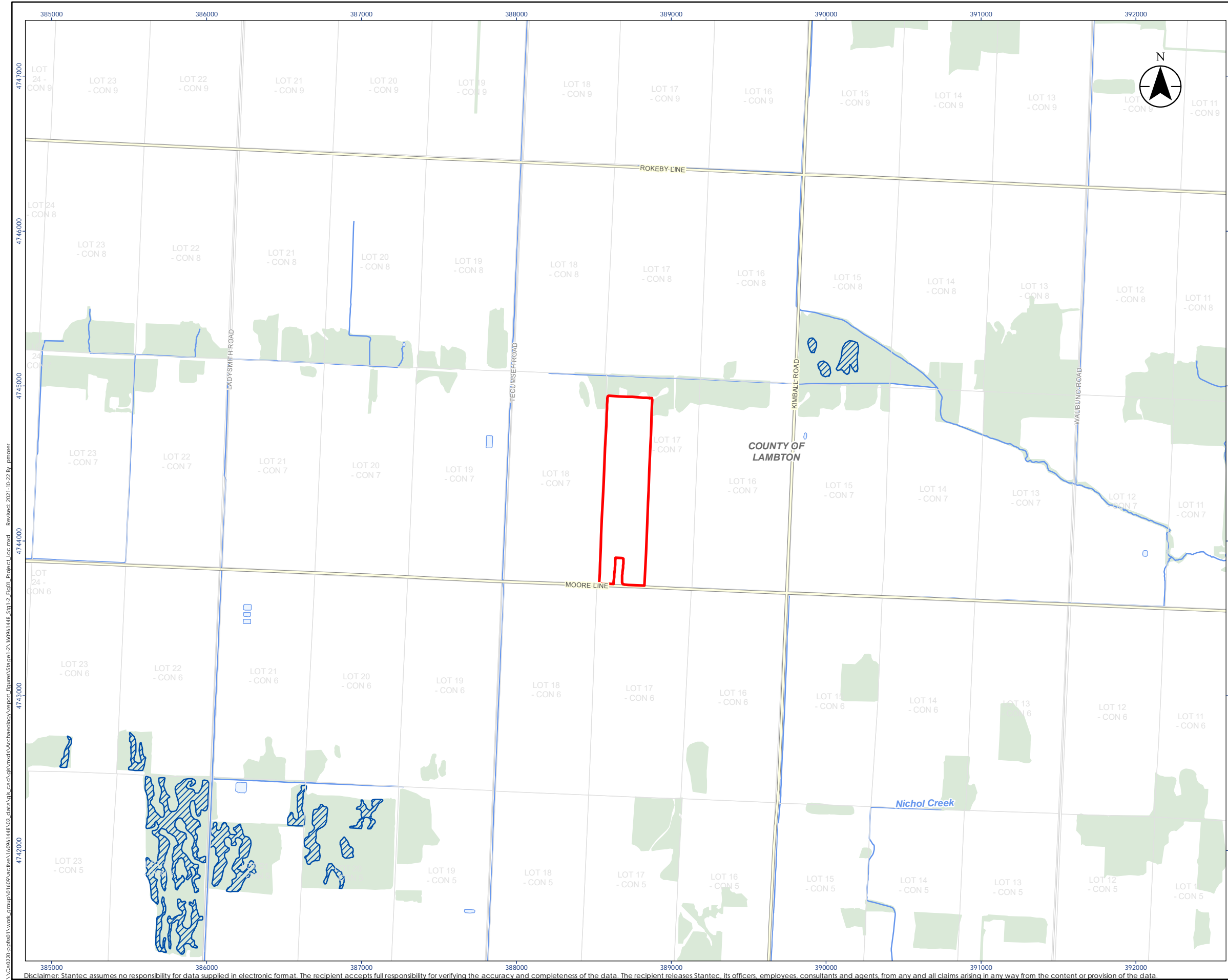
**STAGE 1-2 ARCHAEOLOGICAL ASSESSMENT: COVENY AND KIMBALL-COLINVILLE WELL
DRILLING, PROPOSED LOCATION OF TKC 68**

Maps

9.0 MAPS

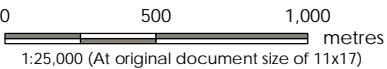
General maps of the study area will follow on succeeding pages.



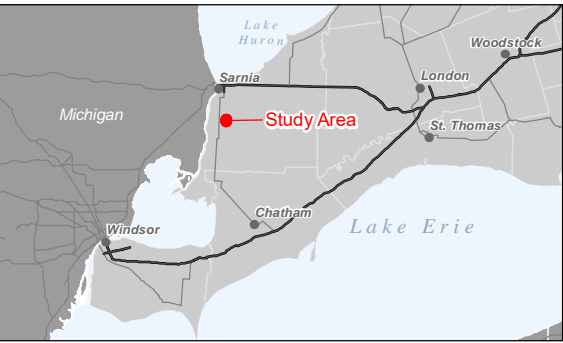


Legend

- Study Area (Approximate)
- Major Road
- Minor Road
- Watercourse
- Waterbody
- Wetland - Evaluated (Provincial)
- Wooded Area
- Lot/Concession Boundary
- Municipal Boundary - Upper Tier



- Notes
1. Coordinate System: NAD 1983 UTM Zone 17N
 2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2021.
 3. Orthoimagery ©



Project Location: Township of St. Clair
160961448 REVA
Prepared by PRM on 2021-10-22
Technical Review by PD on 2021-10-20

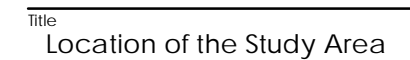
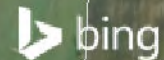
Client/Project:
ENBRIDGE GAS INC.
KIMBALL-COLINVILLE WELL DRILLING PROJECT,
PROPOSED LOCATION OF TKC 68
STAGE 1-2 ARCHAEOLOGICAL ASSESSMENT

Figure No.

1

Title

Location of the Project

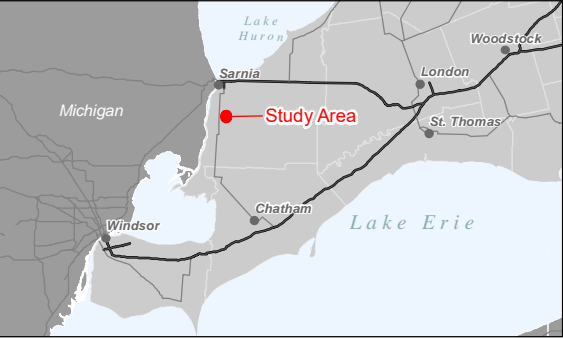




Legend

★ Project Location

- Notes
1. Not to Scale
 2. Government of Canada, n.d.a. Map of Treaty Areas in Upper Canada. Ottawa: Department of Indian Affairs, Survey Branch.



Project Location
Township of St. Clair

160961448
Prepared by PRM on 2021-10-20
Technical Review by PD on 2021-10-20

Client/Project
ENBRIDGE GAS INC.
KIMBALL-COLINVILLE WELL DRILLING PROJECT,
PROPOSED LOCATION OF TKC 68
STAGE 1-2 ARCHAEOLOGICAL ASSESSMENT

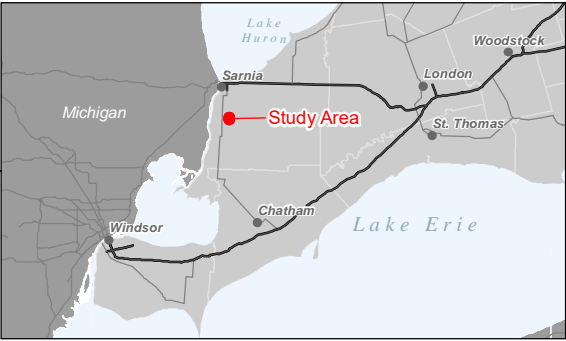
Figure No.
3

Title
Map of Treaty Areas in Upper Canada



Legend
 Study Area (Approximate)

Notes
1. Map is not to scale.
2. Historic map source: Mount, Roswell. 1829. Plan of Moore Township. Ministry of Natural Resources and Forestry, Crown Land Survey Records.



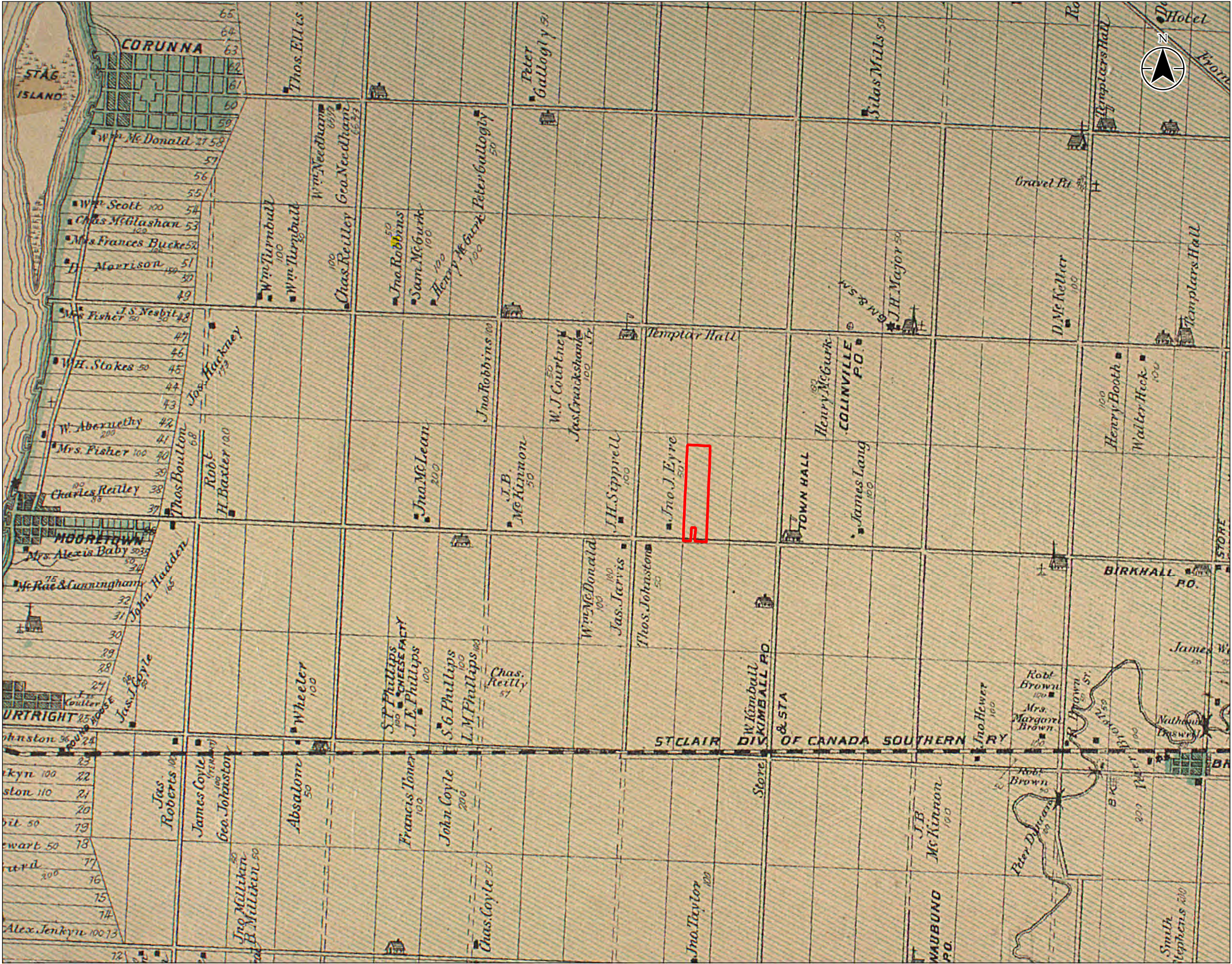
Project Location
Township of St. Clair
160961448
Prepared by PRM on 2021-10-22
Technical Review by PD on 2021-10-21

Client/Project
ENBRIDGE GAS INC.
KIMBALL-COLINVILLE WELL DRILLING PROJECT,
PROPOSED LOCATION OF TKC 68
STAGE 1-2 ARCHAEOLOGICAL ASSESSMENT

Figure No.
5

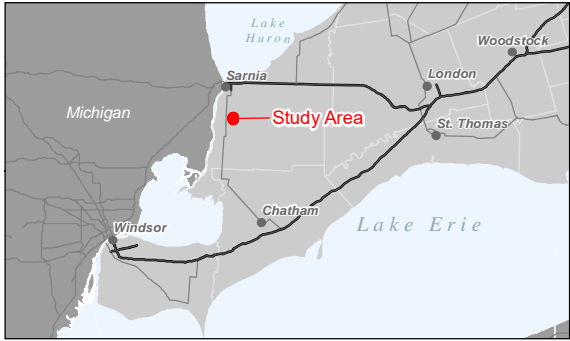
Title
Portion of the 1829 Plan of Moore Township

\\Ca0220-splha\work_group\0160961448\03_data\gis_cad\gis\mxd\Archaeology\Report_Figures\Stage1-2\160961448_Stage1-2_Fig06_1880.mxd Reviewed: 2021-10-22 By: pmoiser



Legend
Study Area (Approximate)

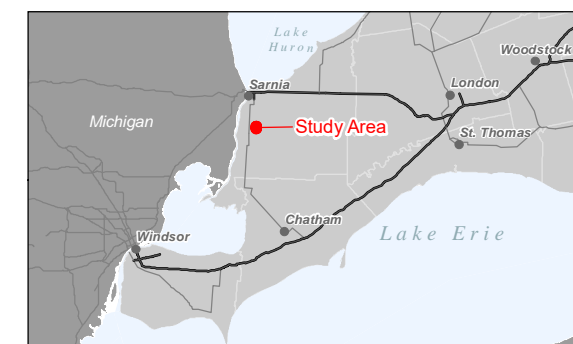
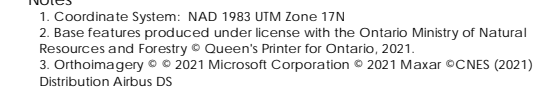
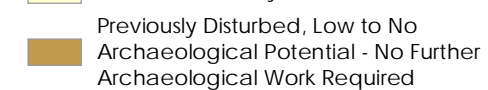
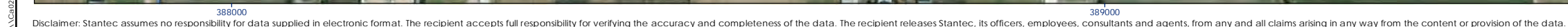
Notes
1. Map is not to scale.
2. Historic map source: Belden, H. 1880. Belden's Historical Atlas of the County of Lambton. H. Belden and Co.



Project Location
Township of St. Clair
160961448
Prepared by PRM on 2021-10-22
Technical Review by PD on 2021-10-21

Client/Project
ENBRIDGE GAS INC.
KIMBALL-COLINVILLE WELL DRILLING PROJECT,
PROPOSED LOCATION OF TKC 68
STAGE 1-2 ARCHAEOLOGICAL ASSESSMENT

Figure No.
6
Title
Portion of the 1880 Map of Moore Township



Project Location	160961448 REVA
Township of St. Clair	Prepared by PRM on 2021-10-22
	Technical Review by PD on 2021-10-22

Client/Project
ENBRIDGE GAS INC.
KIMBALL-COLINVILLE WELL DRILLING PROJECT,
PROPOSED LOCATION OF TKC 68
STAGE 1-2 ARCHAEOLOGICAL ASSESSMENT

Figure No.

7

Title

Stage 1-2 Assessment Results

STAGE 1-2 ARCHAEOLOGICAL ASSESSMENT: COVENY AND KIMBALL-COLINVILLE WELL DRILLING, PROPOSED LOCATION OF TKC 68

Closure

10.0 CLOSURE

This report documents work that was performed in accordance with generally accepted professional standards at the time and location in which the services were provided. No other representations, warranties or guarantees are made concerning the accuracy or completeness of the data or conclusions contained within this report, including no assurance that this work has uncovered all potential archaeological resources associated with the identified property.

All information received from the client or third parties in the preparation of this report has been assumed by Stantec to be correct. Stantec assumes no responsibility for any deficiency or inaccuracy in information received from others.

Conclusions made within this report consist of Stantec's professional opinion as of the time of the writing of this report and are based solely on the scope of work described in the report, the limited data available and the results of the work. The conclusions are based on the conditions encountered by Stantec at the time the work was performed. Due to the nature of archaeological assessment, which consists of systematic sampling, Stantec does not warrant against undiscovered environmental liabilities nor that the sampling results are indicative of the condition of the entire property.

This report has been prepared for the exclusive use of the client identified herein and any use by any third party is prohibited. Stantec assumes no responsibility for losses, damages, liabilities or claims, howsoever arising, from third party use of this report. We trust this report meets your current requirements. Please do not hesitate to contact us should you require further information or have additional questions about any facet of this report.

Quality Review



Colin Varley
2021.10.22
14:20:25 -04'00'

(signature)

Colin Varley – Senior Archaeologist, Senior Associate

Independent Review



Tracie Carmichael
2021.10.22
14:21:31 -04'00'

(signature)

Tracie Carmichael – Managing Principal, Environmental Services



Ministry of Citizenship and Multiculturalism (MCM)

Archaeology Program Unit
Heritage Branch
Citizenship, Inclusion and Heritage Division
5th Floor, 400 University Ave.
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Apr 23, 2025

Parker S. Dickson (P256)
Stantec Consulting
1305 Riverbend London ON N6K 0J5

RE: Review and Entry into the Ontario Public Register of Archaeological Reports: Archaeological Assessment Report Entitled, "Stage 1-2 Archaeological Assessment: Kimball-Colinville Wells, Maximum Operating Pressure Increase, Part of Lot 17, Concession 7, Part of Lot 17, Concession 8, and Part of Lot 19, Concession 6, Geographic Township of Moore, now Township of St. Clair, Lambton County, Ontario", Dated Mar 19, 2025, Filed with MCM on Mar 26, 2025, MCM Project Information Form Number P256-0840-2024, MCM File Number 0011973

Dear Parker S. Dickson (P256):

This office has reviewed the above-mentioned report, which has been submitted to this ministry as a condition of licensing in accordance with Part VI of the *Ontario Heritage Act*, R.S.O. 1990, c 0.18.¹ This review has been carried out in order to determine whether the licensed professional consultant archaeologist has met the terms and conditions of their licence, that the licensee assessed the property and documented archaeological resources using a process that accords with the 2011 *Standards and Guidelines for Consultant Archaeologists* set by the ministry, and that the archaeological fieldwork and report recommendations are consistent with the conservation, protection and preservation of the cultural heritage of Ontario.

The report documents the assessment of the study area as depicted in Figure 7 of the above titled report and recommends the following:

The Stage 2 archaeological assessment was conducted between December 10, 2024, and December 13, 2024, and one new archaeological location, Location 1, was identified.

Location 1 is sufficiently documented in accordance with Section 2.2 of the Ministry's 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011). Thus, no further archaeological assessment is recommended for Location 1.

Based on the information contained in the report, the ministry is satisfied that the fieldwork and reporting for the archaeological assessment are consistent with the ministry's 2011 *Standards and Guidelines for Consultant Archaeologists* and the terms and conditions for archaeological licences. This report has been entered into the Ontario Public Register of Archaeological Reports. Please note that the ministry makes no representation or warranty as to the completeness, accuracy or quality of reports in the register.

Should you require any further information regarding this matter, please feel free to contact me.

Sincerely,

Heather Tulloch
Archaeology Review Officer

cc. Archaeology Licensing Officer
Ryan Park, Enbridge Gas Inc.
Christine Sebesta, Enbridge Gas Inc.

¹ *In no way will the ministry be liable for any harm, damages, costs, expenses, losses, claims or actions that may result: (a) if the Report(s) or its recommendations are discovered to be inaccurate, incomplete, misleading or fraudulent; or (b) from the issuance of this letter. Further measures may need to be taken in the event that additional artifacts or archaeological sites are identified or the Report(s) is otherwise found to be inaccurate, incomplete, misleading or fraudulent.*

Stage 1-2 Archaeological Assessment: Kimball-Colinville Wells, Maximum Operating Pressure Increase

Part of Lot 17, Concession 7, Part of Lot 17, Concession 8, and Part of Lot 19, Concession 6, Geographic Township of Moore, now Township of St. Clair, Lambton County, Ontario

March 19, 2025

Prepared for:
Enbridge Gas Inc.
50 Keil Drive North
Chatham, Ontario N7M 5M1

Prepared by:
Stantec Consulting Ltd.
400-1305 Riverbend Road
London, Ontario N6K 0J5

Licensee: Parker Dickson, MA
License Number: P256
Project Information Form Number:
P256-0840-2024

Project/File:
160901173

REVISED REPORT



**Stage 1-2 Archaeological Assessment: Kimball-Colinville Wells, Maximum Operating Pressure Increase
Limitations and Sign-off**
March 19, 2025

Limitations and Sign-off

The conclusions in the Report titled Stage 1-2 Archaeological Assessment: Kimball-Colinville Wells, Maximum Operating Pressure Increase are Stantec's professional opinion, as of the time of the Report, and concerning the scope described in the Report. The opinions in the document are based on conditions and information existing at the time the scope of work was conducted and do not take into account any subsequent changes. The Report relates solely to the specific project for which Stantec was retained and the stated purpose for which the Report was prepared. The Report is not to be used or relied on for any variation or extension of the project, or for any other project or purpose, and any unauthorized use or reliance is at the recipient's own risk.

Stantec has assumed all information received from Enbridge Gas Inc. (the "Client") and third parties in the preparation of the Report to be correct. While Stantec has exercised a customary level of judgment or due diligence in the use of such information, Stantec assumes no responsibility for the consequences of any error or omission contained therein.

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Stage 1-2 Archaeological Assessment: Kimball-Colinville Wells, Maximum Operating Pressure Increase
Executive Summary
 March 19, 2025

Executive Summary

Stantec Consulting Ltd. (Stantec) was retained by Enbridge Gas Inc. (Enbridge) to complete Stage 1-2 archaeological assessment for proposed temporary workspaces (the study area) required to support the Kimball-Colinville Wells, Maximum Operating Pressure (MOP) Increase Project (the Project). The MOP increase is an operations and maintenance requirement project, within one of Enbridge's existing natural gas storage pools. The study area for the Project is located on part of Lot 17, Concession 7, part of Lot 17, Concession 8, and part of Lot 19, Concession 6, Geographic Township of Moore, now Township of St. Clair, Lambton County, Ontario. The study area is represented by three individual workspaces, comprising approximately 26.72 hectares. The Stage 1-2 archaeological assessment was triggered by Enbridge's Archaeology Protocol and due diligence for construction projects, including operations and maintenance, which is informed by the *Ontario Heritage Act* (Government of Ontario 1990a) and the Ontario Energy Board's (OEB) guidelines for the expansion of natural gas service in its *Guidelines for Assessing and Reporting on Natural Gas System Expansion in Ontario* (OEB 2025).

Stage 1-2 archaeological assessment of the study area was conducted under Project Information Form number P256-0840-2024 issued to Parker Dickson, MA of Stantec by the Ministry of Citizenship and Multiculturalism (the Ministry). The Stage 1 assessment determined that the study area retained archaeological potential and Stage 2 assessment was required. The Stage 2 archaeological assessment was conducted between December 10, 2024, and December 13, 2024, and one new archaeological location, Location 1, was identified.

Location 1 is sufficiently documented in accordance with Section 2.2 of the Ministry's 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011). Thus, **no further archaeological assessment is recommended for Location 1.**

The Ministry is asked to review the results presented and accept this report into the *Ontario Public Register of Archaeological Reports*.

The Executive Summary highlights key points from the report only; for complete information and findings, the reader should examine the complete report.



Stage 1-2 Archaeological Assessment: Kimball-Colinville Wells, Maximum Operating Pressure Increase
Project Personnel
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Project Personnel

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Acknowledgements

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1 Project Context

1.1 Development Context

Stantec Consulting Ltd. (Stantec) was retained by Enbridge Gas Inc. (Enbridge) to complete Stage 1-2 archaeological assessment for proposed temporary workspaces (the study area) required to support the Kimball-Colinville Wells, Maximum Operating Pressure (MOP) Increase Project (the Project). The MOP increase is an operations and maintenance requirement project, within one of Enbridge's existing natural gas storage pools. The study area for the Project is located on part of Lot 17, Concession 7, part of Lot 17, Concession 8, and part of Lot 19, Concession 6, Geographic Township of Moore, now Township of St. Clair, Lambton County, Ontario (Figure 1). The study area is represented by three individual workspaces, comprising approximately 26.72 hectares (Figure 2). Table 1 summarizes the study area parcels.

Table 1: Study Area Parcels

Study Area	Size (approximately)	Lot	Concession	Geographic Township	Current Municipality
Parcel 1	470 metres (m) by 565 m (26.53 hectares [ha])	17	8	Moore	Township of St. Clair, Lambton County
Parcel 2	37 m by 38 m (0.14 ha)	17	7	Moore	Township of St. Clair, Lambton County
Parcel 3 ^a	9 m x 63 m (0.05 ha)	19	6	Moore	Township of St. Clair, Lambton County

Notes:

^a On the Development Map, this area was initially identified as "Parcel 4".

The Stage 1-2 archaeological assessment was triggered by Enbridge's Archaeology Protocol and due diligence for construction projects, including operations and maintenance, which is informed by the *Ontario Heritage Act* (Government of Ontario 1990a) and the Ontario Energy Board's (OEB) guidelines for the expansion of natural gas service in its *Guidelines for Assessing and Reporting on Natural Gas System Expansion in Ontario* (OEB 2025).

1.1.1 Objectives

In compliance with the provincial standards and guidelines set out in the 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011), regulated by the Ministry of Citizenship and Multiculturalism (the Ministry), the objectives of the Stage 1 archaeological assessment are to:

- Provide information about the study area's geography, history, previous archaeological fieldwork, and current land conditions.



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- Evaluate the study area's archaeological potential which will support recommendations for Stage 2 survey for all or parts of the property.
- Recommend appropriate strategies for Stage 2 survey.

To meet these objectives, Stantec archaeologists:

- Reviewed relevant archaeological, historical, and environmental literature pertaining to the study area.
- Reviewed the land use history of the study area, including historical atlases.
- Examined the Ministry's *Ontario Archaeological Sites Database* to determine the presence of registered archaeological sites in and around the study area.
- Queried the Ministry's *Ontario Public Register of Archaeological Reports* to identify previous archaeological assessments completed within 50 metres of the study area.

In compliance with the provincial standards and guidelines set out in the Ministry's 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011), the objectives of the Stage 2 archaeological assessment are to:

- Document archaeological resources within the study area.
- Determine whether the study area contains archaeological resources requiring further assessment.
- Recommend appropriate Stage 3 assessment strategies for archaeological sites identified.

Permission to enter the study area to conduct the archaeological assessment was provided by Enbridge in consultation with individual landowner consent, as required.

1.2 Historical Context

"Contact" is typically used as a chronological benchmark when discussing Indigenous archaeology in Canada and describes the contact between Indigenous and European cultures. There is no definitive moment of contact, and the understanding of when Indigenous and European communities first began to influence one another is evolving with new studies of archaeological and historical evidence and from Indigenous oral tradition. Contact in what is now the province of Ontario is broadly assigned to the 16th century (Loewen and Chapdelaine 2016).

1.2.1 Pre-contact Indigenous Resources

This portion of southwestern Ontario has been occupied by Indigenous peoples since the retreat of the Wisconsin glacier approximately 11,000 years ago. Much of what is understood about the lifeways of these Indigenous peoples is derived from archaeological evidence and ethnographic analogy. In Ontario, Indigenous culture prior to the period of contact with European peoples has been distinguished into archaeological periods based on observed changes in material culture. These archaeological periods are largely based in observed changes in formal lithic tools and separated into the Early Paleo, Late Paleo,



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Early Archaic, Middle Archaic, and Late Archaic periods. Following the advent of ceramic technology in the Indigenous archaeological record, archaeological periods are separated into the Early Woodland, Middle Woodland, and Late Woodland periods, based primarily on observed changes in formal ceramic decoration. It should be noted that these archaeological periods do not necessarily represent specific cultural identities but are a useful paradigm for understanding changes in Indigenous culture through time. Table 2 provides a general outline of the cultural chronology of the study area, summarized from Ellis and Ferris (1990). The provided time periods are based on the “Common Era” calendar notation system: Before Common Era (BCE) and Common Era (CE).

Table 2: Generalized Archaeological Period Chronology of the Study Area

Archaeological Period	Characteristics	Time (approximate)	Comments
Early Paleo	Fluted Projectiles	9000 – 8400 BCE	Spruce parkland/caribou hunters
Late Paleo	Hi-Lo Projectiles	8400 – 8000 BCE	Smaller but more numerous sites
Early Archaic	Kirk, Nettling, and Bifurcate Base Projectiles	8000 – 6000 BCE	Slow population growth
Middle Archaic	Brewerton-like Points	6000 – 2500 BCE	Environment similar to present
Late Archaic	Narrow Points	2500 – 1800 BCE	Increasing site size
	Broad Points	1800 – 1500 BCE	Large chipped lithic tools
	Small Points	1500 – 1100 BCE	Introduction of bow hunting
Terminal Archaic	Hind Points	1100 – 950 BCE	Emergence of true cemeteries
Early Woodland	Meadowood Points	950 – 400 BCE	Introduction of pottery
Middle Woodland	Couture Corded Pottery	400 BCE – 500 CE	Increased sedentism
	Riviere au Vase Pottery	500 – 800 CE	Seasonal hunting and gathering
Late Woodland	Younge Phase Pottery	800 – 1200 CE	Incipient agriculture
	Springwells Phase Pottery	1200 – 1400 CE	Agricultural villages
	Wolf Phase Pottery	1400 – 1550 CE	Earth worked villages, warfare
Contact Indigenous	Various Indigenous Groups	1600 – 1875 CE	Early written records and treaties
Historical	French/Euro-Canadian Settlers	1749 CE – present	European settlement

Local environmental conditions during the Paleo period significantly differed from what they are today. Ontario’s first peoples would have crossed the landscape in small groups searching for food, particularly migratory game species. Caribou may have been a Paleo diet staple in this area, supplemented by wild plants, small game, birds, and fish. Given the low density of populations on the landscape at this time and their mobile nature, Paleo sites are small and ephemeral and are sometimes identified by the presence of fluted projectile points. Sites are frequently located adjacent to the shorelines of large glacial lakes. Between 9000 and 8000 BCE, Indigenous populations were sustained by hunting, fishing, and foraging and lived a relatively mobile existence across an extensive geographic territory. Despite these wide territories, social ties were maintained between groups. One method to maintain social ties between



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distant groups was through gift exchange, which was evident through exotic lithic material documented on many sites (Ellis 2013:35-40).

Archaeological records indicate subsistence changes around 8000 BCE at the start of the Archaic Period in southwestern Ontario. Since the large mammal species that formed the basis of the Paleo diet became extinct or moved north with the warming of the climate, Archaic populations had a more varied diet, exploiting a range of plants and bird, mammal, and fish species. Reliance on specific food resources like fish, deer, and several nut species became more noticeable through the Archaic Period, and the presence of warmer, more hospitable environs led to the expansion of group and family sizes. In the archaeological record, this is evident in the presence of larger sites.

By approximately 8000 BCE, evidence existed and became more common for the production of ground-stone tools such as axes, chisels, and adzes. These tools are believed to be indicative specifically of woodworking. This evidence can be extended to indicate an increase in craft production and, arguably, craft specialization. This latter statement is also supported by evidence, dating to approximately 7000 BCE of ornately carved stone objects which would be laborious to produce and have explicit aesthetic qualities (Ellis 2013:41). This is indirectly indicative of changes in social organization which permitted individuals to devote time and effort to craft specialization. Since 8000 BCE, the Great Lakes basin experienced a low-water phase, with shorelines significantly below modern lake levels (Stewart 2013: Figure 1.1.C). It is presumed that most human settlements would have been focused along these former shorelines. At approximately 6500 BCE, the climate had warmed considerably since the recession of the glaciers, and the environment had grown more like the present day. By approximately 4500 BCE, evidence exists from southern Ontario for the utilization of native copper, i.e., naturally occurring pure copper metal (Ellis 2013:42). The recorded origin of this material along the north shore of Lake Superior indicates the existence of extensive exchange networks across the Great Lakes basin.

The coniferous forests of earlier times were replaced by stands of mixed coniferous and deciduous trees by about 4000 BCE. The transition to more productive environmental circumstances led to a rise in population density. As a result, Archaic sites become more abundant over time. Artifacts typical of these occupations include a variety of stemmed and notched projectile points; chipped stone scrapers; ground stone tools (i.e., celts and adzes) and ornaments (i.e., bannerstones and gorgets); bifaces or tool blanks; animal bone; and chert waste flakes, a by-product of the tool making process (Ellis *et al.* 1990).

At approximately 3500 BCE, the isostatic rebound of the North American plate following the melt of the Laurentide glacier reached a point that significantly affected the watershed of the Great Lakes basin. Prior to this, the Upper Great Lakes had drained down the Ottawa Valley via the French River and Mattawa River valleys. Following this shift in the watershed, the drainage course of the Great Lakes basin changed to its present course. This also prompted a significant increase in water-level to approximately modern levels (with a brief high-water period); this change in water levels is believed to have occurred catastrophically (Stewart 2013:28-30). This change in geography coincides with the earliest evidence for cemeteries (Ellis 2013:46). By 2500 BCE, the earliest evidence exists for the construction of fishing weirs (Ellis *et al.* 1990: Figure 4.1). However, the construction of fishing weirs could have occurred as early as 6650 BCE (Stevens 2004). Regardless, constructing these weirs would have required a large amount of communal labour and indicates the continued development of social organization and communal identity.



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The large-scale food procurement at a single location also has significant implications for the permanence of settlement within the landscape. This period is also marked by further population increase, and by 1500 BCE, evidence exists for substantial permanent structures (Ellis 2013:45-46).

By approximately 950 BCE, the earliest evidence exists for populations using ceramics. Populations are understood to have continued to exploit natural resources seasonally. This advent of ceramic technology correlated, however, with the intensive exploitation of seed foods, such as goosefoot and knotweed, as well as mast, such as nuts (Williamson 2013:48). The use of ceramics implies changes in the social organization of food storage as well as in the cooking of food and changes in diet. Fish also continued to be an important facet of the economy at this time. Evidence continues to exist for the expansion of social organization (including hierarchy), group identity, ceremonialism (particularly in burial), interregional exchange throughout the Great Lakes basin and beyond, and craft production (Williamson 2013:48-54).

A distinctive cultural occupation in southwestern Ontario, including Essex, Kent, and Lambton counties, as well as portions of Middlesex County, had developed during the Late Woodland period. The primary Late Woodland occupants of this area were populations described by archaeologists as Western Basin Tradition. Murphy and Ferris (1990:189) indicate that these people had ties with populations in southeastern Michigan and northwestern Ohio and represent an *in situ* cultural development from the earlier Middle Woodland groups. The Western Basin Tradition seems to have been centred in the territory comprising the eastern drainage basin of Lake Erie, Lake St. Clair, and the southern end of Lake Huron. The Western Basin Tradition is divided into four phases based on differences in settlement and subsistence strategies and pottery attributes.

By approximately 550 CE, evidence emerges for the introduction of maize into southern Ontario. This crop would have initially only supplemented Indigenous peoples' diet and economy (Birch and Williamson 2013:13-14). Maize-based agriculture gradually became more important to societies, and by approximately 900 CE, permanent communities emerged that were primarily focused on agriculture and the storage of crops, with satellite locations oriented toward procuring other resources via hunting, fishing, and foraging. By approximately 1250 CE, evidence exists for the common cultivation of Indigenous cultigens, including maize, beans, squash, sunflower, and tobacco. The extant archaeological record demonstrates many cultural traits similar to those noted for historical Indigenous nations (Williamson 2013:55).

1.2.2 Post-contact Indigenous Resources

As noted above, at the turn of the 16th century, the region of the study area is documented to have been occupied by people associated with the Western Basin Tradition. Following the turn of the 17th century, this region of the study area is understood to have been within the territory of the Fire Nation, an Algonkian group occupying the western end of Lake Erie. It is argued, however, that the Atawandaron (Neutral) expanded extensively westward, displacing the Fire Nation (Lennox and Fitzgerald 1990:418-419). It is debated whether the Fire Nation was descendent from the archaeologically described Western Basin Tradition, or if they migrated into the western part of Lake Erie, displacing a previous Indigenous culture (Murphy and Ferris 1990:193-194).



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In 1649, the Seneca and the Mohawk led a campaign into southern Ontario and dispersed the Huron-Wendat, Tionontati (Petun), and Atawandaron (Neutral), and the Seneca established dominance over the region and used it as a hinterland for beaver hunting (Heidenreich 1978; Trigger 1978:345). By 1690 however, Ojibwa-speaking people had begun to displace the Seneca from southern Ontario. Historians understand that the displaced Fire Nation moved across the St. Clair and Detroit Rivers into what is modern-day lower Michigan, and their populations are synonymous with the later Kickapoo, Miami, Potawatomi, Fox, and Sauk (Heidenreich 1990: Figure 15.1). Bkejwanong (Walpole Island) First Nation (WIFN) oral tradition states that nations of the Three Fires (a political confederacy constituted of the Potawatomi, Ojibwa, and Ottawa) have occupied the delta of the St. Clair River and the surrounding region continually for thousands of years (WIFN n.d.).

The Indigenous economy from the turn of the 18th century focused on fishing and the fur trade, supplemented by agriculture and hunting (Konrad 1981; Rogers 1978). The study area falls within the traditional territory of the WIFN, the Aamjiwnaang (Sarnia) First Nation (Aamjiwnaang First Nation), the Wiiwkwedong and Aazhoodena (Kettle Point and Stony Point) First Nation (Lytwyn 2009), and the Deshkaan Ziibing Anishinaabeg (Chippewas of the Thames First Nation [COTTFN]). Some populations of Wyandot (an Indigenous population of historically amalgamated Petun and Huron-Wendat individuals) also had moved to the region of Lake St. Clair at the turn of the 18th century and resided with the Three Fires nations (Tooker 1978:398).

By 1730, it is reported that a community of approximately 300 Indigenous people were living at the north end of Lake St. Clair (Rogers 1978:762). D’Anville’s 1755 map (Konrad 1981: Plate 1) indicates the Mississauga (an Ojibwa nation) on the east bank of the St. Clair River. By 1760, the Chippewa community was established on the Thames River, southwest of present-day London, Ontario (COTTFN 2025). By 1796, the Three Fires community of Chenail Ecarté was established (Feest and Feest 1978:777-779).

The expansion of the fur trade led to increased interaction between European and Indigenous people, and ultimately intermarriage between European men and Indigenous women. During the 18th century the progeny of these marriages began to identify as Métis, and no longer identified directly with either their paternal or maternal cultures. The ethnogenesis of the Métis progressed with the establishment of distinct Métis communities along the major waterways in the Great Lakes of Ontario. Métis communities were primarily focused around the upper Great Lakes and along Georgian Bay; however, Métis people have historically lived throughout Ontario (Métis Nation of Ontario 2025; Stone and Chaput 1978:607-608).

Despite the dispersal and movement of Indigenous groups throughout southern Ontario during the 17th and 18th centuries, archaeologically they can be characterized by continuity with their pre-contact Indigenous counterparts. These peoples still maintained a Terminal Woodland archaeological culture, albeit with some features of European material culture. While there was cultural and social change occurring due to contact with European colonial powers, there was equally a definite persistence of Indigenous socio-cultural practices since these groups were not so profoundly affected by European contact that they left their former lifeways behind (Ferris 2009).



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Under British administration in the 19th century, the various Indigenous groups were divided into separate bands. The Anishinaabe included the western Algonquian peoples, among them the Chippewa and the Odawa. Until the 18th century, the central Algonquian-speaking peoples, among them Potawatomi, were located in the Michigan Peninsula (Blackbird 1887). In the middle of 18th century, the Chippewa were located on the south shores of Lake Huron, the east shores of Georgian Bay, and on the west end of Lake Ontario. Indigenous peoples and their communities continue to play a large role in the occupation of the study area and its environs.

Since contact with European explorers and immigrants, and later, with the establishment of provincial and federal governments (the Crown), the lands within Ontario have been included in various treaties, land claims, and land cessions. Following the American Revolutionary War, the Crown focused on the settlement of European immigrants into what became province of Upper Canada in 1791. To enable widespread settlement, the Crown entered into several treaties with Indigenous peoples. Figure 3 provides a map of southwestern Ontario illustrating early treaties and purchases (Government of Canada n.d.), including a vast tract of land southeast of Lake Huron with a treaty or agreement date of July 10, 1824. Later, the chiefs of the Chippewa and representatives of the Crown established this vast tract of land as Treaty Number 27 ½. Though not an exhaustive list, Morris (1943) provides a general outline of some treaties within the Province of Ontario from 1783 to 1923. Figure 4 provides an approximate outline of Treaty Number 27 ½, illustrated by the letter “T”, based on a series of compilations by Morris (1943). The lands of Treaty Number 27 ½ are described by Morris (1943:26) as:

...being an agreement made at Amherstburg in the Western District of the Province of Upper Canada on the 26th of April, 1825, between James Givens, Esquire, Superintendent of Indian Affairs, on behalf of His Majesty King George the Fourth and the Chiefs and Principal Men of the part of the Chippewa Nation of Indians, inhabiting and claiming the tract of land Wawanosh Township in the County of Huron was named after Way-way-nosh the principal Chief of the Band making this Treaty.

Despite the differentiation among these groups in Euro-Canadian sources, there was a considerably different view by Indigenous groups concerning their self-identification during the first few centuries of European contact. These peoples relied upon kinship ties that cut across European notions of nation identity (Bohaker 2006:277-283). Many of the British-imposed nation names such as Chippewa, Ottawa, Potawatomi, or Mississauga artificially separated how self-identified Indigenous peoples' classified themselves; these groups were culturally and socially more alike than contemporary European documentation might indicate (Bohaker 2006:1-8).

The nature of Indigenous settlement size, population distribution, and material culture shifted as European settlers encroached upon Indigenous territory. However, despite this shift, “written accounts of material life and livelihood, the correlation of historically recorded villages to their archaeological manifestations, and the similarities of those sites to more ancient sites have revealed an antiquity to documented cultural expressions that confirms a deep historical continuity to...systems of ideology and thought” (Ferris 2009:114). As a result, Indigenous peoples have left behind archaeological resources throughout the region which show continuity with past peoples, even if they have not been explicitly recorded in Euro-Canadian documentation.



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1.2.3 Euro-Canadian Resources

In 1791, the Provinces of Upper Canada and Lower Canada were created from the former Province of Quebec by an act of British Parliament. At this time, Colonel John Graves Simcoe was appointed as the Lieutenant Governor of Upper Canada and was tasked with governing the new province, directing its settlement, and establishing a constitutional government modelled after that of Britain. In 1792, Simcoe divided Upper Canada into 19 counties consisting of previously settled lands, new lands opened for settlement, and lands not yet acquired by Crown. These new counties stretched from Essex in the west to Glengarry in the east.

Lambton County was part of the District of Hesse, which in 1792 was renamed the Western District. The Western District consisted of Kent (which included Lambton County) and Essex Counties. Lambton County was named after John George Lambton, first Earl of Durham. Lambton was the author of the Durham Report, which investigated the issues that led to the rebellion of 1837. The townships in Lambton County were not completely surveyed until 1835. After the *Municipal Act* of 1849, which provided a means of government for towns and counties, several counties amalgamated and separated over the next few years with the former Kent County, with Lambton County finally becoming independent in 1853. Lambton County was known as the 'Last Frontier', as Lambton was one of the last areas of southern Ontario to be settled by European immigrants (Elford 1982).

Euro-Canadian settlement in the area of Lambton County began as early as 1796 as French settlers began living along the banks of the St. Clair River. Large scale settlement, however, did not begin until the 1830s. The majority of the surveyed lots in the townships of Lambton County were assigned to children of the United Empire Loyalists, who sold their rights to early Euro-Canadian occupants. Early Euro-Canadian inhabitants were primarily tenant farmers from Britain as well as artisans and retired military men. The population of Lambton County swelled in the 1850s with the establishment of the Great Western Railway and the Great Trunk (later Grand Trunk) Railway. This growth remained steady until 1891, when the population peaked at 58,810 people (Elford 1982).

Moore Township, with its easy accessibility to the St. Clair River, was one of the first areas in Lambton County to be settled by European immigrants. Fifteen French-speaking and five English-speaking families were among the first Euro-Canadians to settle the area. Part of Moore Township was bought from the Aamjiwnaang First Nation in 1827, and a reserve was partitioned for the Indigenous community along the township's northern border. The township was named after Sir John Moore, the celebrated British General killed in the Battle of Corunna, in 1829. The survey of Moore township was completed in 1829 by Roswell Mount, who squeezed as many lots along the St. Clair River front as possible for veterans of the Napoleonic Wars. Figure 5 illustrates a portion of the 1829 plan of Moore Township (Mount 1829). No Indigenous notations are depicted near the study area on the 1829 plan of Moore Township, however, the southwest corner of the township, including 2,575 acres, had been dedicated as an "Indian Reserve". As it relates to the study area, no notations or landowner names are illustrated on the 1829 plan of Moore Township for Parcel 1 and Parcel 3; Mary Hughes is illustrated as the landowner for Parcel 2.



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A portion of the 1880 map of Moore Township from the *Illustrated Historical Atlas of the County of Lambton, Ontario* (Belden & Co. 1880) is illustrated in Figure 6. Many lots on the 1880 map do not show a landowner name or evidence of structures; however, this is because only the names of subscribers to the *Dominion Atlas of Canada* were shown. In fact, the lots of Moore Township would have been claimed by various private landowners, holdings companies, the Crown, and the Clergy by the time of the 1880 map. The population of Moore Township had reached 5,146 by 1881, thanks in large part to the advent of the Canada Southern Railway (Mika and Mika 1983). Though the interior of the township had been settled, the population of the township and economic centres continue to be focused along the St. Clair River, particularly in the communities of Corunna, Mooretown, Courtright, and Brigden. Table 3 summarizes the historical notations depicted on the 1880 map of Moore Township.

Table 3: Applicable Landowner Summary from the 1880 Map of Moore Township

Study Area	Lot	Concession	Landowner	Comment
Parcel 1	17	8	None depicted	No structures or notations illustrated
Parcel 2	17	7	None depicted	No structures or notations illustrated
Parcel 3	19	6	W ^m McDonald (west half); Jas. Jarvis (east half)	One structure illustrated in the northeast corner of lot, near the intersection of early roads (now Tecumseh Road and Moore Line)

The majority of the region surrounding the study area has been subject to European-style agricultural practices for over 150 years, having been settled by Euro-Canadian farmers by the late 19th century. Much of the region today continues to be used for agricultural purposes.

1.3 Archaeological Context

1.3.1 The Natural Environment

The study area is situated in the St. Clair Clay Plain physiographic region. Chapman and Putnam (1984:147) describe the St. Clair Clay Plain as:

Adjoining Lake St. Clair in Essex and Kent County Counties and the St. Clair River in Lambton County are extensive clay plains covering 2,270 square miles. The region is one of little relief, lying between 575 and 700 feet a.s.l. [above sea level], except for the moraine at Ridgetown and Blenheim which rises 50 to 500 feet higher....Glacial Lake Whittlesey, which deeply covered all of these lands, and Lake Warren which subsequently covered nearly the whole area, failed to leave deep stratified beds of sediment on the underlying clay till except around Chatham, between Blenheim and the Rondeau marshes, and in a few other smaller areas. Most of Lambton and Essex Counties, therefore, are essentially till plains smoothed by shallow deposits of lacustrine clay which settled in the depressions while the knolls were being lowered by wave action.

Soils within the study area are classified as Caister clay and Brookston clay. Caistor clay is slightly stoney and has imperfect drainage, and Brookston clay is essentially stone-free with poor drainage (Matthews *et*



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1 Project Context
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al. 1957). Agricultural yields and variability improve with artificial drainage and, with drainage improvements, would have created soil conditions suitable for early agricultural practices.

Potable water is the single most important resource for any extended human occupation or settlement, and since water sources in southwestern Ontario have remained relatively stable over time, proximity to drinkable water is regarded as a useful index for evaluating archaeological site potential. In fact, distance to water is one of the most used variables for predictive modelling of archaeological site location in Ontario. While impacted by municipal drainage improvement projects, the nearest sources of extant potable water are tributaries of Nichol Creek, approximately 1.7 kilometres to the east of Parcel 1 and Parcel 2, and approximately 5.1 kilometres to the east of Parcel 3.

1.3.2 Registered Archaeological Sites and Surveys

In Canada, archaeological sites are registered within the Borden system, a national grid system designed by Charles Borden in 1952 (Borden 1952). The grid covers the entire surface area of Canada and is divided into major units containing an area that is two degrees in latitude by four degrees in longitude. Major units are designated by uppercase letters. Each major unit is subdivided into 288 basic unit areas, each containing an area of 10 minutes in latitude by 10 minutes in longitude. The width of basic units reduces as one moves north due to the curvature of the earth. In southern Ontario, each basic unit measures approximately 13.5 kilometres east-west by 18.5 kilometres north-south. In northern Ontario, adjacent to Hudson Bay, each basic unit measures approximately 10.2 kilometres east-west by 18.5 kilometres north-south. Basic units are designated by lowercase letters. Individual sites are assigned a unique, sequential number as they are registered. These sequential numbers are issued by the Ministry who maintain the *Ontario Archaeological Sites Database*. The study area under review is located within Borden Block AfHo.

Information concerning specific site locations is protected by provincial policy and is not fully subject to the *Freedom of Information and Protection of Privacy Act* (Government of Ontario 1990b). The release of such information in the past has led to looting or various forms of illegally conducted site destruction. Confidentiality extends to media capable of conveying location, including maps, drawings, or textual descriptions of a site location. The Ministry will provide information concerning site location to the party or an agent of the party holding title to a property, or to a licensed archaeologist with relevant cultural resource management interests.

An examination of the Ministry's *Ontario Archaeological Sites Database* has shown that there are three archaeological sites registered within a one-kilometre radius of the study area (Government of Ontario 2025a). Table 4 provides a list of the registered archaeological sites near the study area; none are within 50 metres of the study area.

Table 4: Registered Archaeological Sites near the Study Area

Borden Number	Site Name	Site Type	Cultural Affiliation
AfHo-55	Location 1	Scatter	Indigenous
AfHo-56	Dawn-Corunna Location 1	Homestead	Euro-Canadian



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Borden Number	Site Name	Site Type	Cultural Affiliation
AfHo-57	Dawn-Corunna Location 12	Findspot	Indigenous

Based on a query of the Ministry's *Ontario Public Register of Archaeological Reports* (Government of Ontario 2025b), no previous archaeological assessments have been completed within 50 metres of the study area.

1.4 Existing Conditions

The study area is represented by three individual workspaces, comprising approximately 26.72 ha (see Figure 2), and includes ploughed agricultural lands, sparse woodlot and scrubland, and existing Enbridge infrastructure (namely, access roads and well heads associated with the existing natural gas storage pool).

1.5 Archaeological Potential

Archaeological potential is established by determining the likelihood that archaeological resources may be present on a subject property. Stantec applied archaeological potential criteria commonly used by the Ministry (Government of Ontario 2011) to determine areas of archaeological potential within the region under study. These variables include proximity to previously identified archaeological sites, distance to various types of water sources, soil texture and drainage, glacial geomorphology, elevated topography, and the general topographic variability of the area.

Distance to modern or ancient water sources is generally accepted as the most important determinant of past human settlement patterns and considered alone, may result in a determination of archaeological potential. However, any combination of two or more other criteria, such as well-drained soils or topographic variability, may also indicate archaeological potential. Finally, extensive land disturbance can eradicate archaeological potential.

As discussed above, distance to water is an essential factor in archaeological potential modeling. When evaluating distance to water it is important to distinguish between water and shoreline, as well as natural and artificial water sources, as these features affect site locations and types to varying degrees. The Ministry categorizes water sources in the following manner:

- Primary water sources: lakes, rivers, streams, and creeks.
- Secondary water sources: intermittent streams and creeks, springs, marshes, and swamps.
- Past water sources: glacial lake shorelines, relic river or stream channels, cobble beaches, and shorelines of drained lakes or marshes.
- Accessible or inaccessible shorelines: high bluffs, swamp or marshy lake edges, and sandbars stretching into marsh.



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The closest primary sources of extant potable water are tributaries of Nichol Creek. Additional ancient and/or relic tributaries of other primary and secondary water sources may have existed but are not identifiable today and were not illustrated on historical mapping.

Soil texture can be an important determinant of past settlement, usually in combination with other factors such as topography. The Caister clay and Brookston clay soil of the study area, while imperfectly and poorly drained, is adequate for early agriculture.

An examination of the Ministry's *Ontario Archaeological Sites Database* identified three archaeological sites registered within a one-kilometre radius of the study area (Government of Ontario 2025a). None of the registered archaeological sites are within 50 metres of the study area.

Archaeological potential can be extended to areas of early Euro-Canadian settlement, including places of military or pioneer settlements; early transportation routes; and properties listed on the municipal register or designated under the *Ontario Heritage Act* (Government of Ontario 1990a) or property that local histories or informants have identified with possible historical events. While no listed or designated properties are within 300 metres of the study area (St. Clair Township 2025), the 1880 map of Moore Township (Belden & Co. 1880) illustrates the township as largely being settled (at least by those who had subscribed to the atlas and had their names associated with the map), particularly along the banks of the St. Clair River and around the early communities of Corunna, Mooretown, Courtright, and Brigden. The 1829 plan of Moore Township indicates Mary Hughes owned the lot associated with Parcel 2. No landowners or historical notations are illustrated on the 1880 map regarding Parcel 1 and Parcel 2, and two landowner and one structure is depicted on the 1880 map for Parcel 3. Much of the established road system and agricultural settlement from the 19th century remains visible today.

When the above listed criteria are applied, the study area retains archaeological potential and, in accordance with Section 1.3.1 of the Ministry's 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011), Stage 2 archaeological assessment is required.



Stage 1-2 Archaeological Assessment: Kimball-Colinville Wells, Maximum Operating Pressure Increase
2 Field Methods
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2 Field Methods

Stage 1-2 archaeological assessment of the study area was conducted under Project Information Form (PIF) number P256-0840-2024 issued to Parker Dickson, MA of Stantec by the Ministry. Overall, the study area comprises approximately 26.72 ha of ploughed and weathered agricultural field, sparse woodlot and scrubland, and existing Enbridge infrastructure (namely, access roads and well heads associated with the existing natural gas storage pool). Prior to the start of the Stage 1-2 archaeological assessment, Enbridge provided preliminary mapping of the Project's proposed impacts which defined the assessment area (i.e., the study area). This mapping was geo-referenced by Stantec's Geographical Information Services (GIS) team and a digital file (i.e., a shape file) was created of the study area. The digital file was uploaded to handheld Global Positioning Service (GPS) devices for use in the field. Enbridge's preliminary mapping is provided to the Ministry as the Development Map for this report package.

The fieldwork for the Stage 1-2 archaeological assessment of the study area was conducted between December 10, 2024, and December 13, 2024 (Table 5). A slight snowfall occurred overnight on December 12, 2024; however, the snowfall did not negatively impact archaeological survey on December 13, 2024, as soils remained friable and unfrozen during the test pit survey. Overall, assessment conditions were adequate and at no time was the archaeological assessment conducted when the field, weather, or lighting conditions were detrimental to the identification and recovery of archaeological resources. Photographic documentation in Section 8.1 of this report confirms that field conditions met the requirements for Stage 1-2 archaeological assessment, as per the Ministry's 2011 *Standards and Guidelines for Consultant Archaeologists* (Section 7.8.6 Standard 1.a; Government of Ontario 2011). An overview of the Stage 1-2 assessment methodology, as well as photograph locations and directions, is depicted on Figure 7 in Section 9.0 of this report.

Table 5: Weather and Field Conditions during the Stage 1-2 Archaeological Assessment

Date	Field Director	Activity	Weather	Comments
December 10, 2024	Nathan Ng (R1223)	Pedestrian survey (Parcel 1)	Mainly cloudy and cool	Ground surface visibility > 80%
December 11, 2024	Nathan Ng (R1223)	Pedestrian survey (Parcel 1)	Overcast and cool	Ground surface visibility > 80%
December 12, 2024	Krista Lane (R382)	Property inspection (Parcel 2 and 3)	Mainly cloudy and cool	Ground surface visibility > 80%
December 13, 2024	Nathan Ng (R1223)	Test pit survey (Parcel 2 and 3)	Mainly cloudy and cool	Soils were unfrozen and friable; soil screened well

Approximately 92.76% of the study area was active and ploughed agricultural field and was subject to pedestrian survey, at a five-metre interval, in accordance with Section 2.1.1 of the Ministry's 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011). Ground surface



Stage 1-2 Archaeological Assessment: Kimball-Colinville Wells, Maximum Operating Pressure Increase**2 Field Methods**

March 19, 2025

visibility during the pedestrian survey was greater than 80% and provided for adequate conditions for the identification of archaeological resources. Photographs illustrating the pedestrian survey of the study area are provided in Section 8.1.

When archaeological resources were identified during the pedestrian survey, the survey transect was decreased to a one-metre interval and spanned a minimum 20-metre radius around the identified artifact. This approach was used to determine if the artifact was an isolated find or part of a larger surface scatter, as per Section 2.1.1 Standard 7 of the Ministry's 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011). The artifact was collected, and a Universal Transverse Mercator (UTM) coordinate was taken as per Section 2.1 Standard 4.a. of the Ministry's 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011). The Stage 2 surface collection was conducted according to Stage 3 controlled surface pickup (CSP) standards, as allowed by the *Fieldwork: Stage 2 – Frequently Asked Questions* document issued by the Ministry (Government of Ontario 2016). As the identified archaeological resource comprised a single isolated find (see Section 3.0 for record of finds for each archaeological location), no further UTM coordinates were required or recorded. The UTM coordinates were taken using ArcGIS Collector powered by ESRI, customized for archaeological survey and assessment, on a handheld mobile device paired with an R1 Receiver to an accuracy of less than one metre. The UTM coordinates are located in zone 17T and are based upon the North American Datum 1983 (NAD83). A map illustrating the exact site location and a listing of UTM coordinates recorded during the assessment are provided in the *Supplementary Documentation* to this report.

Approximately 0.63% of the study area comprised sparse woodlot, scrubland, and agricultural land that was inaccessible for ploughing. This portion of the study area was surveyed using the test pit survey method. The test pit survey was conducted at a five-metre interval, in accordance with Section 2.1.2, and specifically Section 2.1.2 Standard 1.f for Parcel 3, of the Ministry's 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011). Excavated test pits were at least 30 centimetres in diameter and excavated five centimetres into sterile subsoil. The soils were examined for stratigraphy, cultural features, or evidence of fill. The soil was screened through six-millimetre (mm) mesh hardware cloth to facilitate the recovery of artifacts and then used to backfill the pit. No artifacts were recovered during the test pit survey of the study area and so no further test pit methodology was required. Photographs illustrating the test pit survey of the study area are provided in Section 8.1.

The remainder of the study area, approximately 6.61%, was identified as previously disturbed and was not surveyed. Such areas include access roads, ditching, and well heads. While this portion of the study area was not surveyed, it was photographically documented in Section 8.1 to confirm that physical features affected the ability to survey portions of the study area in accordance with Section 7.8.6 Standard 1.b of the Ministry's 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011).



Stage 1-2 Archaeological Assessment: Kimball-Colinville Wells, Maximum Operating Pressure Increase
3 Record of Finds
 March 19, 2025

3 Record of Finds

The Stage 1-2 archaeological assessment was conducted employing the methods described in Section 2.0. An inventory of the documentary record generated by fieldwork is provided in Table 6. One new archaeological location was identified during the Stage 2 survey of the study area. In accordance with Section 7.12 of the Ministry's 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011), a Borden number for the identified archaeological location is not required. Maps illustrating exact archaeological site locations do not form part of this public report; they may be found in the *Supplementary Documentation*.

Table 6: Inventory of Documentary Record

Document Type	Current Location of Document Type	Additional Comments
Four pages of field notes	Stantec office in London, Ontario	In original field book and scanned in project file
One set of digital data files	Stantec GIS server in Markham, Ontario	Stored digitally on central GIS server
33 digital photographs	Stantec office in London, Ontario	Stored digitally in project file and on central GIS server

The material culture collected during the Stage 2 archaeological survey of the study area is contained in one Bankers box, labeled by location number. The box will be temporarily housed at the Stantec London office until formal arrangements can be made for a transfer to a Ministry collections facility.

3.1 Location 1

Location 1 was identified during the pedestrian survey of a ploughed agricultural field and comprises a single, isolated find of one retouched flake. The recovered artifact is illustrated on Plate 1 in Section 8.2.

Chert type identification was accomplished visually using reference materials located in the Stantec London office. Chert is a naturally occurring mineral found in sedimentary rocks that is a granular, crystalline form of quartz composed of cryptocrystalline and microcrystalline crystals (Eley and von Bitter 1989). Raw material acquisition and procurement strategies have long been theorized in academic literature. Some researchers suggest that raw material choices are purely utilitarian (e.g., Deller 1979; Ellis 1989; Parker 1986), while others suggest non-utilitarian reasons (e.g., Hall 1993; Simons *et al.* 1984). Regardless of the reason, chert type identification and their respective quantities within a particular assemblage provide an opportunity to evaluate numerous archaeological variables, including group mobility and sedentism, lithic reduction strategy and technique, transportation, trade, and symbolism.

The recovered retouched flake is manufactured from Kettle Point chert. Kettle Point formation chert is from the Late Devonian age and is situated between the Kettle Point (Late Devonian shales) and the Ipperwash formations (Middle Devonian Limestone). It occurs as submerged outcrops that extend approximately 1,350 metres into Lake Huron (Janusas 1984). Secondary deposits have been reported in



Stage 1-2 Archaeological Assessment: Kimball-Colinville Wells, Maximum Operating Pressure Increase
3 Record of Finds
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Essex County (Janusas 1984) and the Ausable Basin (Kenyon 1980; Eley and Von Bitter 1989). Kettle Point chert can be identified by the presence of a waxy lustre and occurs in a range of colours, including brown, grey, and greenish colours, as well as reddish-purple and dark blue varieties (Eley and von Bitter 1989). A rusty staining on the surface of artifacts is frequently noted (Fisher 1997).

Retouched flakes are fragments of chipping detritus that display intentional chipping or sharpening marks along their edges. Expedient tools, such as retouched flakes, cannot be used to determine the cultural affiliation or time period of the occupation of a site.

3.1.1 Location 1 Artifact Catalogue

Table 7 provides the complete catalogue (Cat.) of the Stage 2 artifact assemblage recovered from Location 1.

Table 7: Location 1 Artifact Catalogue

Cat. #	Context	Artifact	Quantity	Chert	Additional Comments
1	CSP 1	Retouched flake	1	Kettle Point	Retouch on incurved lateral edge, ventral side; usewear on other lateral edge, dorsal side, and around lateral-distal point



Stage 1-2 Archaeological Assessment: Kimball-Colinville Wells, Maximum Operating Pressure Increase
4 Analysis and Conclusions
 March 19, 2025

4 Analysis and Conclusions

Enbridge retained Stantec to conduct Stage 1-2 archaeological assessment for the study area associated with the Project. The Stage 1 assessment determined that the study area retained archaeological potential and Stage 2 assessment was required. The Stage 2 archaeological assessment was conducted between December 10, 2024, and December 13, 2024. During the Stage 2 survey, one new archaeological location was identified – Location 1. Maps identifying exact archaeological site locations do not form part of this public report; they may be found in the *Supplementary Documentation*.

4.1 Location 1

The Stage 2 assessment of Location 1 resulted in the identification of a single, isolated find of one retouched flake. Expedient tools, such as retouched flakes, cannot be used to determine the cultural affiliation or time period of the occupation of a site. Given the temporally non-diagnostic and isolated nature of the recovered artifact, the cultural heritage value or interest of Location 1 is sufficiently documented in accordance with Section 2.2 of the Ministry's 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011).



Stage 1-2 Archaeological Assessment: Kimball-Colinville Wells, Maximum Operating Pressure Increase
5 Recommendations
 March 19, 2025

5 Recommendations

Enbridge retained Stantec to conduct Stage 1-2 archaeological assessment for the study area associated with the Project. The Stage 1 assessment determined that the study area retained archaeological potential and Stage 2 assessment was required. The Stage 2 archaeological assessment was conducted between December 10, 2024, and December 13, 2024, and one new archaeological location, Location 1, was identified. Maps identifying exact site locations do not form part of this public report; they may be found in the *Supplementary Documentation*.

5.1 Location 1

Location 1 is sufficiently documented in accordance with Section 2.2 of the Ministry's 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011). Thus, **no further archaeological assessment is recommended for Location 1.**

The Ministry is asked to review the results presented and to enter this report into the *Ontario Public Register of Archaeological Reports*.



Stage 1-2 Archaeological Assessment: Kimball-Colinville Wells, Maximum Operating Pressure Increase
6 Advice on Compliance with Legislation
 March 19, 2025

6 Advice on Compliance with Legislation

In accordance with Section 7.5.9 of the Ministry's 2011 Standards and Guidelines for Consultant Archaeologists (Government of Ontario 2011), the following standard statements are a required component of archaeological reporting and are provided from the Ministry's 2011 Standards and Guidelines for Consultant Archaeologists (Government of Ontario 2011).

This report is submitted to the Minister of Citizenship and Multiculturalism as a condition of licensing in accordance with Part VI of the *Ontario Heritage Act*, R.S.O. 1990, c O.18 (Government of Ontario 1990a). The report is reviewed to ensure that it complies with the standards and guidelines that are issued by the Minister, and that the archaeological fieldwork and report recommendations ensure the conservation, protection and preservation of the cultural heritage of Ontario. When all matters relating to archaeological sites within the study area of a development proposal have been addressed to the satisfaction of the Ministry of Citizenship and Multiculturalism, a letter will be issued by the ministry stating that there are no further concerns with regard to alterations to archaeological sites by the proposed development.

It is an offence under Sections 48 and 69 of the *Ontario Heritage Act* (Government of Ontario 1990a) for any party other than a licensed archaeologist to make any alteration to a known archaeological site or to remove any artifact or other physical evidence of past human use or activity from the site, until such time as a licensed archaeologist has completed fieldwork on the site, submitted a report to the Minister stating that the site has no further cultural heritage value or interest, and the report has been filed in the *Ontario Public Register of Archaeological Reports* referred to in Section 65.1 of the *Ontario Heritage Act* (Government of Ontario 1990a)

Should previously undocumented archaeological resources be discovered, they may be a new archaeological site and therefore subject to Section 48(1) of the *Ontario Heritage Act* (Government of Ontario 1990a) The proponent or person discovering the archaeological resources must cease alteration of the site immediately and engage a licensed consultant archaeologist to carry out archaeological fieldwork, in compliance with Section 48(1) of the *Ontario Heritage Act* (Government of Ontario 1990a)

The *Funeral, Burial and Cremation Services Act*, 2002, S.O. 2002, c.33 (Government of Ontario 2002), requires that any person discovering or having knowledge of a burial site shall immediately notify the police or coroner and the Registrar of Funeral, Burial and Cremation Services Act and Manager of Burials Unit at the Ministry of Public and Business Service Delivery and Procurement also be immediately notified.



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Stage 1-2 Archaeological Assessment: Kimball-Colinville Wells, Maximum Operating Pressure Increase

8 Images

March 19, 2025

8 Images

8.1 Photographs

Photo 1: Pedestrian survey of the study area, facing northeast



Photo 2: Pedestrian survey of the study area, facing west



Photo 3: Ground conditions during the pedestrian survey of the study area, facing east



Photo 4: Ground conditions during the pedestrian survey of the study area, facing east



Stage 1-2 Archaeological Assessment: Kimball-Colinville Wells, Maximum Operating Pressure Increase

8 Images

March 19, 2025

**Photo 5: View of typical existing disturbance
(well head) within the study
area, facing east**



**Photo 6: View of typical existing disturbance
(access road) within the study
area, facing east**



**Photo 7: View of typical existing disturbance
(access road) within the study
area, facing south**



**Photo 8: View of typical existing disturbance
(access road) within the study
area, facing south**



Stage 1-2 Archaeological Assessment: Kimball-Colinville Wells, Maximum Operating Pressure Increase

8 Images

March 19, 2025

Photo 9: View of typical existing disturbance (access road) within the study area, facing north-northwest



Photo 10: View of typical existing disturbance (ditching) within the study area, facing north



Photo 11: View of typical existing disturbance (ditching) within the study area, facing east-southeast



Photo 12: General view of the study area, facing southeast



Stage 1-2 Archaeological Assessment: Kimball-Colinville Wells, Maximum Operating Pressure Increase

8 Images

March 19, 2025

**Photo 13: General view of the study area,
facing northeast**



**Photo 14: Test pit survey of the study area,
facing west-northwest**



**Photo 15: Test pit survey of the study area,
facing east**



**Photo 16: Test pit survey of the study area,
facing northeast**



Stage 1-2 Archaeological Assessment: Kimball-Colinville Wells, Maximum Operating Pressure Increase

8 Images

March 19, 2025

**Photo 17: General view of the study area,
facing southwest**



**Photo 18: Test pit survey of the study area,
facing northeast**



Stage 1-2 Archaeological Assessment: Kimball-Colinville Wells, Maximum Operating Pressure Increase

8 Images

March 19, 2025

8.2 Artifact Plates

Plate 1 Artifact from Location 1



Stage 1-2 Archaeological Assessment: Kimball-Colinville Wells, Maximum Operating Pressure Increase

9 Maps

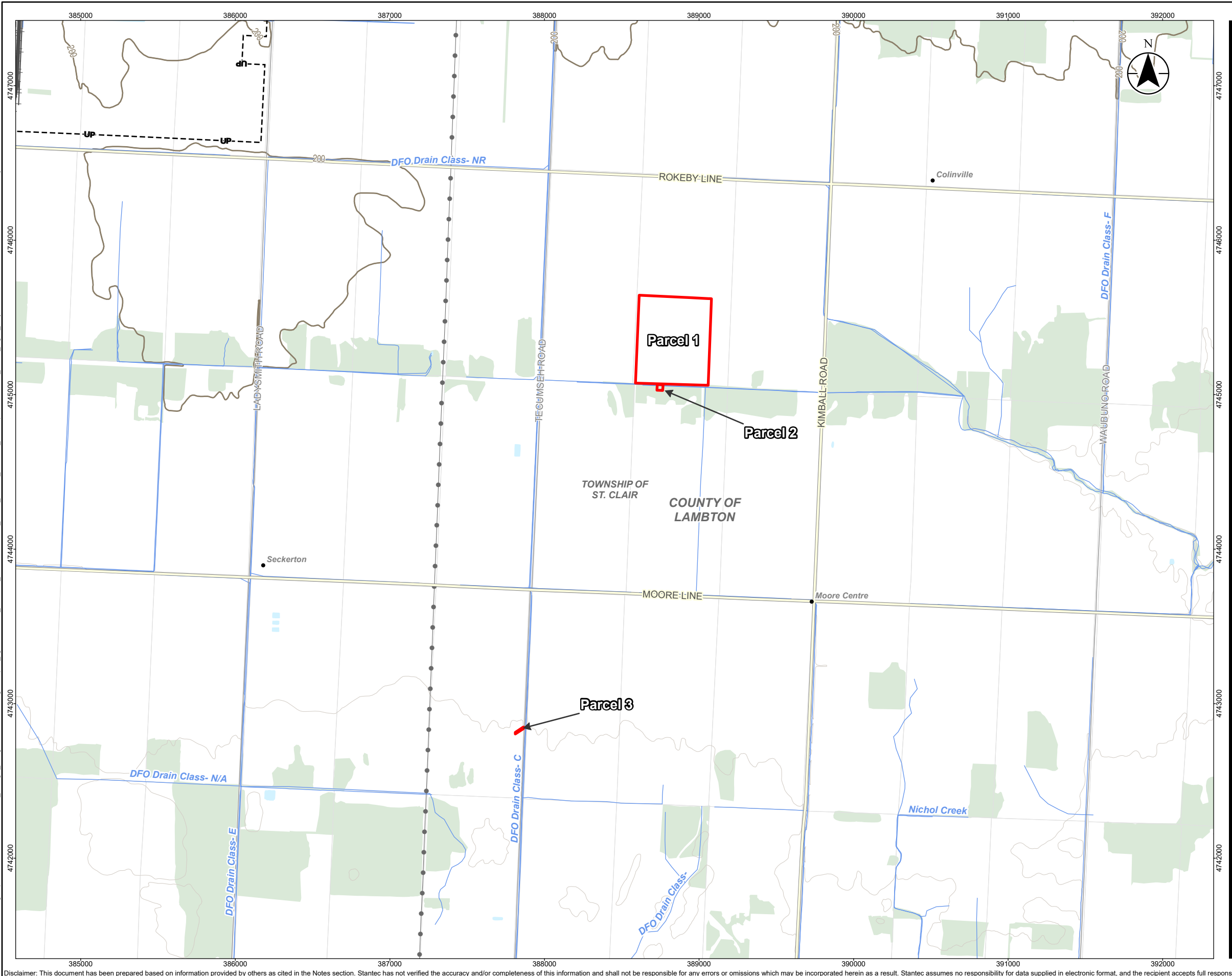
March 19, 2025

9 Maps

General maps of the Project and archaeological assessment will follow on succeeding pages. Maps illustrating exact site locations do not form part of this public report; they may be found in the Supplementary Documentation.



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- Legend
- Study Area (Approximate Location)
 - Constructed Drain
 - Hydro Line
 - Unknown Pipeline
 - Major Road
 - Minor Road
 - Railway
 - Watercourse (Permanent)
 - Lot
 - Waterbody
 - Wooded Area

0 500 1,000 m
1:25,000 (At original document size of 11x17)

- Notes
- Coordinate System: NAD 1983 UTM Zone 17N
 - Contains information licensed under the Open Government Licence – Ontario, and the Open Government Licence - Canada, accessed 2025.

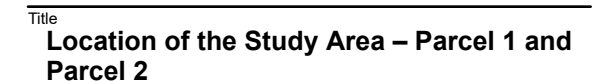
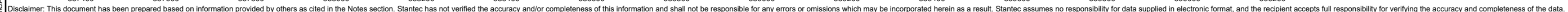


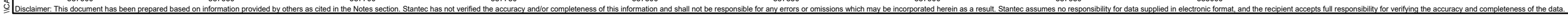
Project Location: Kimball - Colinville, Ontario
160901173 REVA
Prepared by HLONG on 2025-01-29
Technical Review by AW on 2024-01-28

Client/Project: ENBRIDGE GAS INC.
KIMBALL-COLINVILLE WELLS, MOP INCREASE - STAGE 1-2 ARCHAEOLOGICAL ASSESSMENT

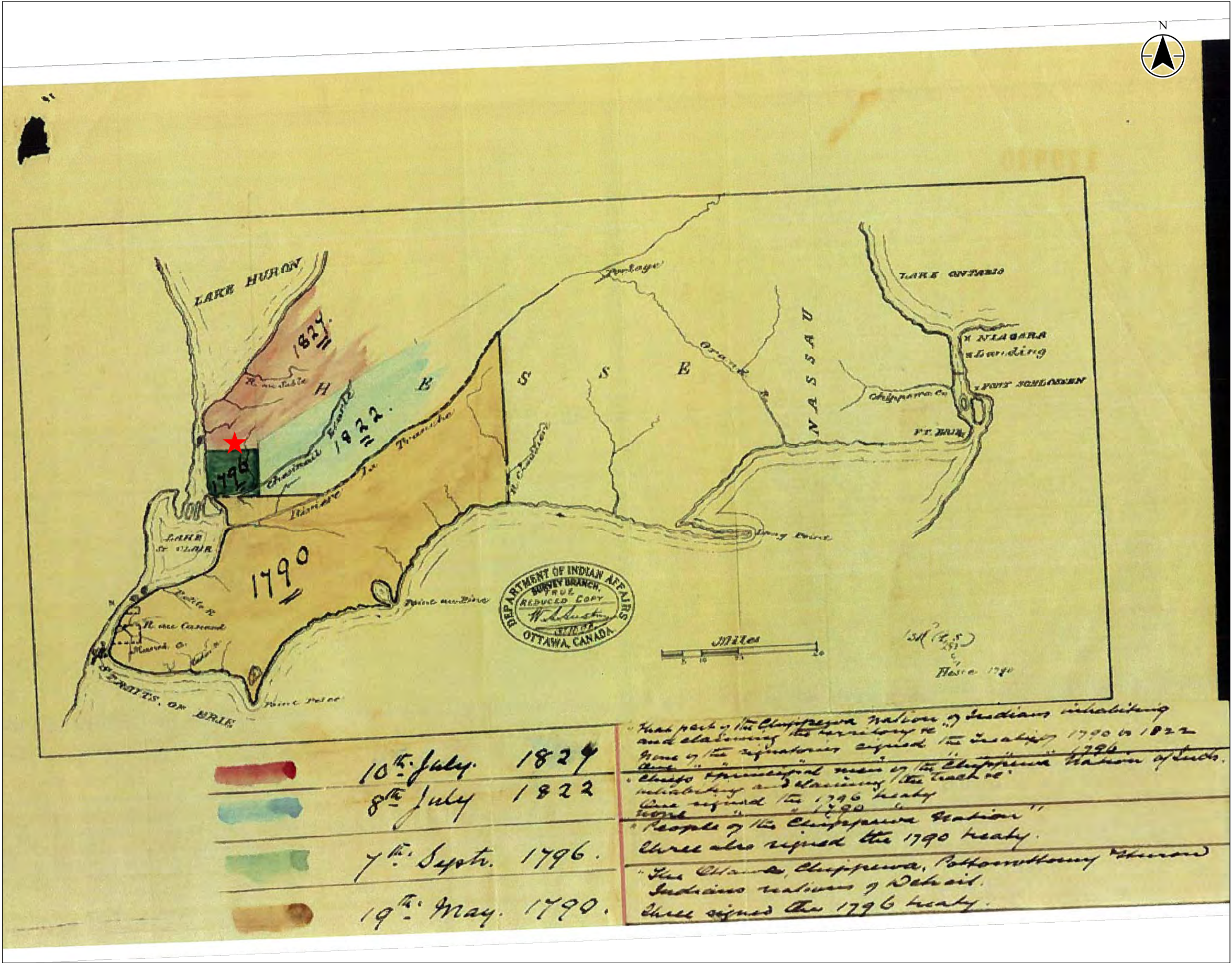
Figure No. 1


Title: Location of the Project





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Stantec

Legend

- ★ Project Location (Approximate)

Notes

- Map not to scale.
- Government of Canada, n.d.a. Map of Treaty Areas in Upper Canada. Ottawa: Department of Indian Affairs, Survey Branch.



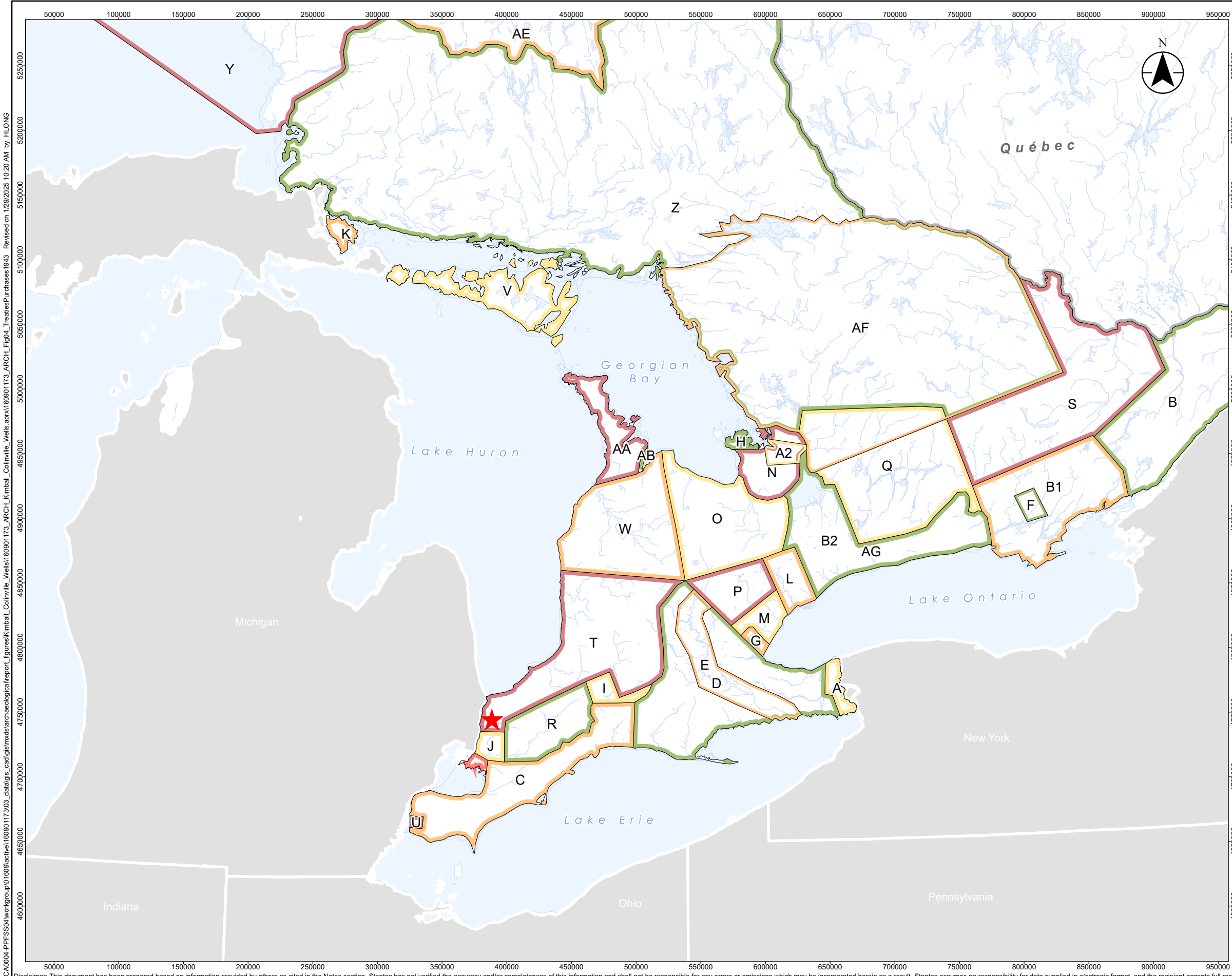
Project Location
Kimball -
Colinville, Ontario

160901173 REVA
Prepared by HLONG on 2025-01-29
Technical Review by AW on 2024-01-28

Client/Project
ENBRIDGE GAS INC.
KIMBALL-COLINVILLE WELLS, MOP INCREASE -
STAGE 1-2 ARCHAEOLOGICAL ASSESSMENT

Figure No.
3

Title
Map of Treaty Areas of Upper Canada



Legend

★ Project Location (Approximate)

- A** Treaty No. 381, May 9th, 1781 (Mississauga and Chippewa)
- AA** Treaty No. 72, October 30th, 1854 (Chippewa)
- AB** Treaty No. 82, February 9th, 1857 (Chippewa)
- AE** Treaty No. 9, James Bay 1905, 1906 (Ojibway and Cree)
- AF** Williams Treaty, October 31st and November 15th, 1923 (Chippewa and Mississauga)
- AG** Williams Treaty, October 31st, 1923 (Chippewa)
- A2** John Collins' Purchase, 1785 (Chippewa)
- B** Crawford's Purchase, October 9th, 1783 (Algonquin and Iroquois)
- B1** Crawford's Purchase, October 9th, 1783 (Mississauga)
- B2** Crawford's Purchase, 1783, 1787, 1788 (Mississauga)
- C** Treaty No. 2, May 19th, 1790 (Odawa, Chippewa, Pottawatomi, and Huron)
- D** Treaty No. 3, December 2nd, 1792 (Mississauga)
- E** Haldimand Tract: from the Crown to the Mohawk, 1793
- F** Tyendinaga: from the Crown to the Mohawk, 1793
- G** Treaty No. 3 3/4: from the Crown to Joseph Brant, October 24th, 1795
- H** Treaty No. 5, May 22nd, 1798 (Chippewa)
- I** Treaty No. 6, September 7th, 1796 (Chippewa)
- J** Treaty No. 7, September 7th, 1796 (Chippewa)
- K** Treaty No. 11, June 30th, 1798 (Chippewa)
- L** Treaty No. 13, August 1st, 1805 (Mississauga)
- M** Treaty No. 13A, August 2nd, 1805 (Mississauga)
- N** Treaty No. 16, November 18th, 1815 (Chippewa)
- O** Treaty No. 18, October 17th, 1818 (Chippewa)
- P** Treaty No. 19, October 28th 1818 (Chippewa)
- Q** Treaty No. 20, November 5th, 1818 (Chippewa)
- R** Treaty No. 21, March 9th, 1819 (Chippewa)
- S** Treaty No. 27, May 31st, 1819 (Mississauga)
- T** Treaty No. 27½, April 25th, 1825 (Ojibwa and Chippewa)
- U** Treaty No. 35, August 13th, 1833 (Wyandot or Huron)
- V** Treaty No. 45, August 9th, 1836 (Chippewa and Odawa, "For All Indians To Reside Thereon")
- W** Treaty No. 45½, August 9th, 1836 (Saugeen)
- X** Treaty No. 57, June 1st, 1847 (Iroquois of St. Regis)
- Y** Treaty No. 60, Robinson, Superior, September 7th, 1850 (Ojibwa)
- Z** Treaty No. 61, Robinson, Huron, September 9th, 1850 (Ojibwa)

Notes

1. Coordinate System: NAD 1983 UTM Zone 17N
2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2018.
3. Treaty boundaries adapted from Morris 1943 (1964 reprint). For cartographic representation only.



Project Location
Kimball -
Colinville, Ontario

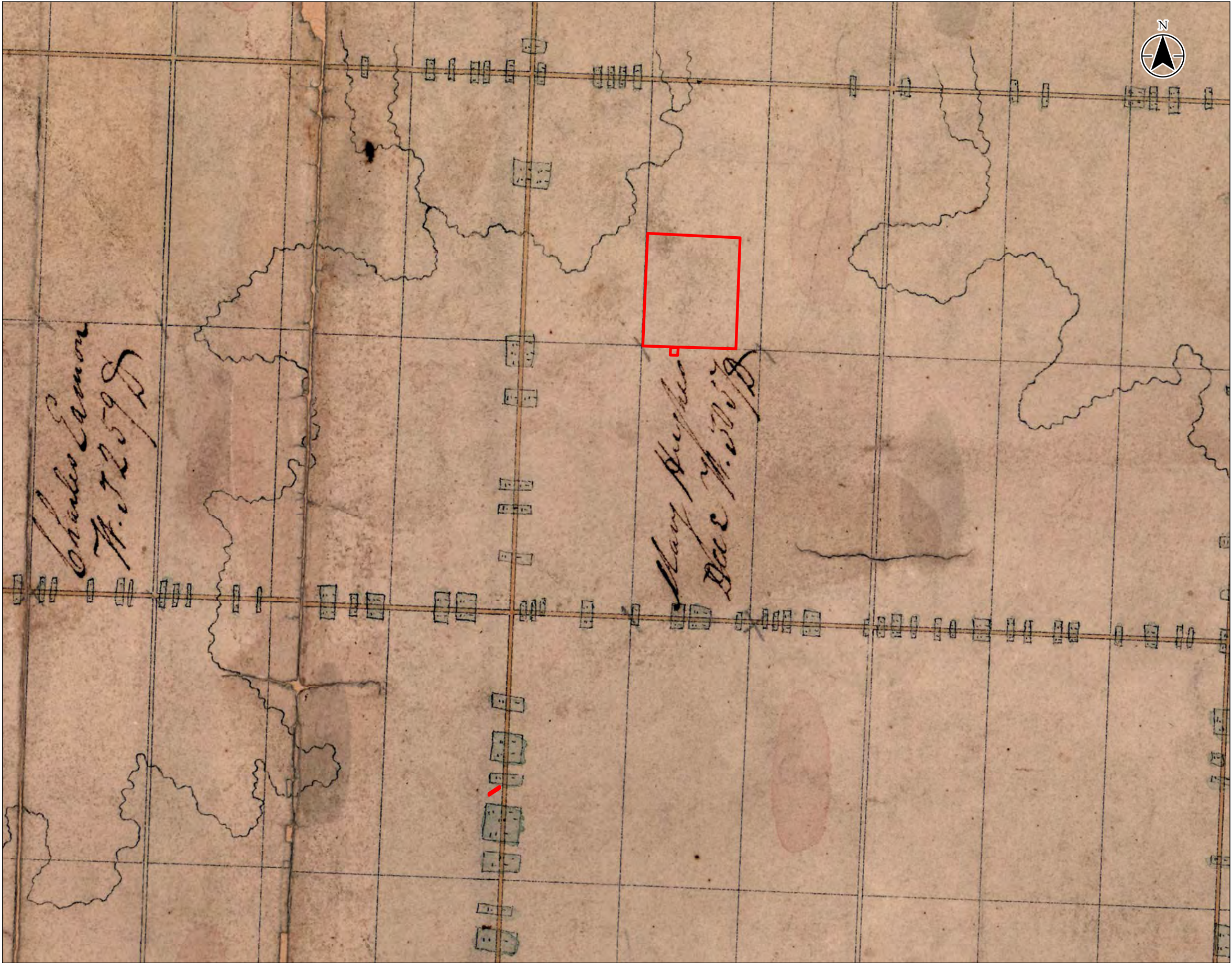
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Prepared by HLONG on 2025-01-29
Technical Review by AW on 2024-01-28

Client/Project
ENBRIDGE GAS INC.
KIMBALL-COLINVILLE WELLS, MOP INCREASE -
STAGE 1-2 ARCHAEOLOGICAL ASSESSMENT

Figure No.
4

Title
**Treaties and Purchases (Adapted from
Morris 1943)**

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Legend
 Study Area (Approximate Location)

Notes
1. Map not to scale
2. Historic map source: Mount, Roswell. 1829. Plan of Moore Township. Ministry of Natural Resources and Forestry, Crown Land Survey Records.



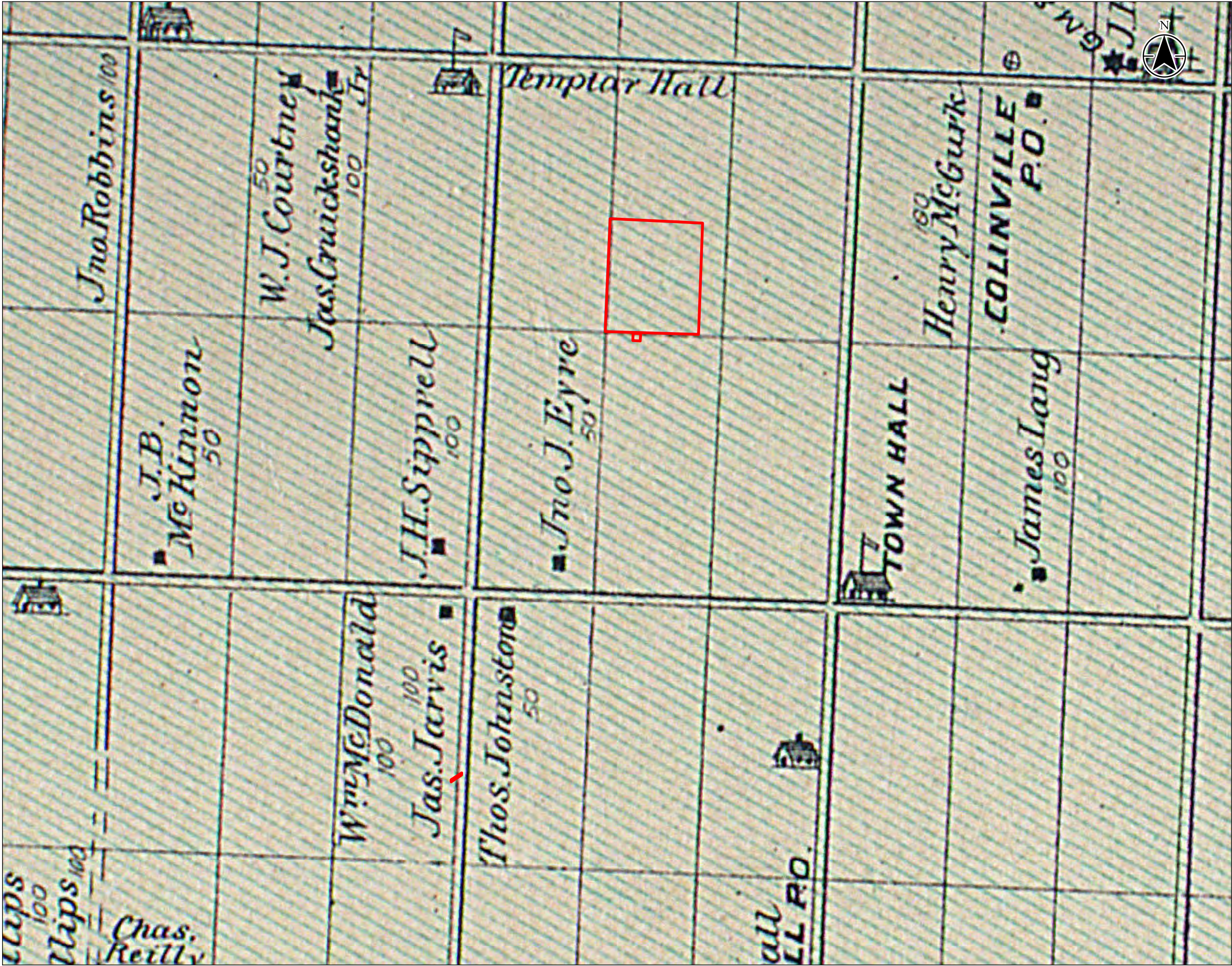
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Kimball -
Colinville, Ontario
160901173 REVA
Prepared by HLONG on 2025-01-29
Technical Review by AW on 2024-01-28

Client/Project
ENBRIDGE GAS INC.
KIMBALL-COLINVILLE WELLS, MOP INCREASE -
STAGE 1-2 ARCHAEOLOGICAL ASSESSMENT

Figure No.
5

Title
Portion of the 1829 Plan of Moore Township

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Legend

Study Area (Approximate Location)

Notes

- 1. Map not to scale
- 2. Historic map source: Belden, H. 1880. Belden's Historical Atlas of the County of Lambton. H. Belden and Co.

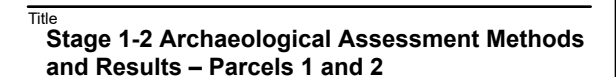
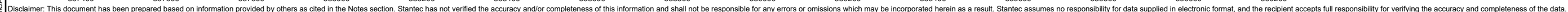


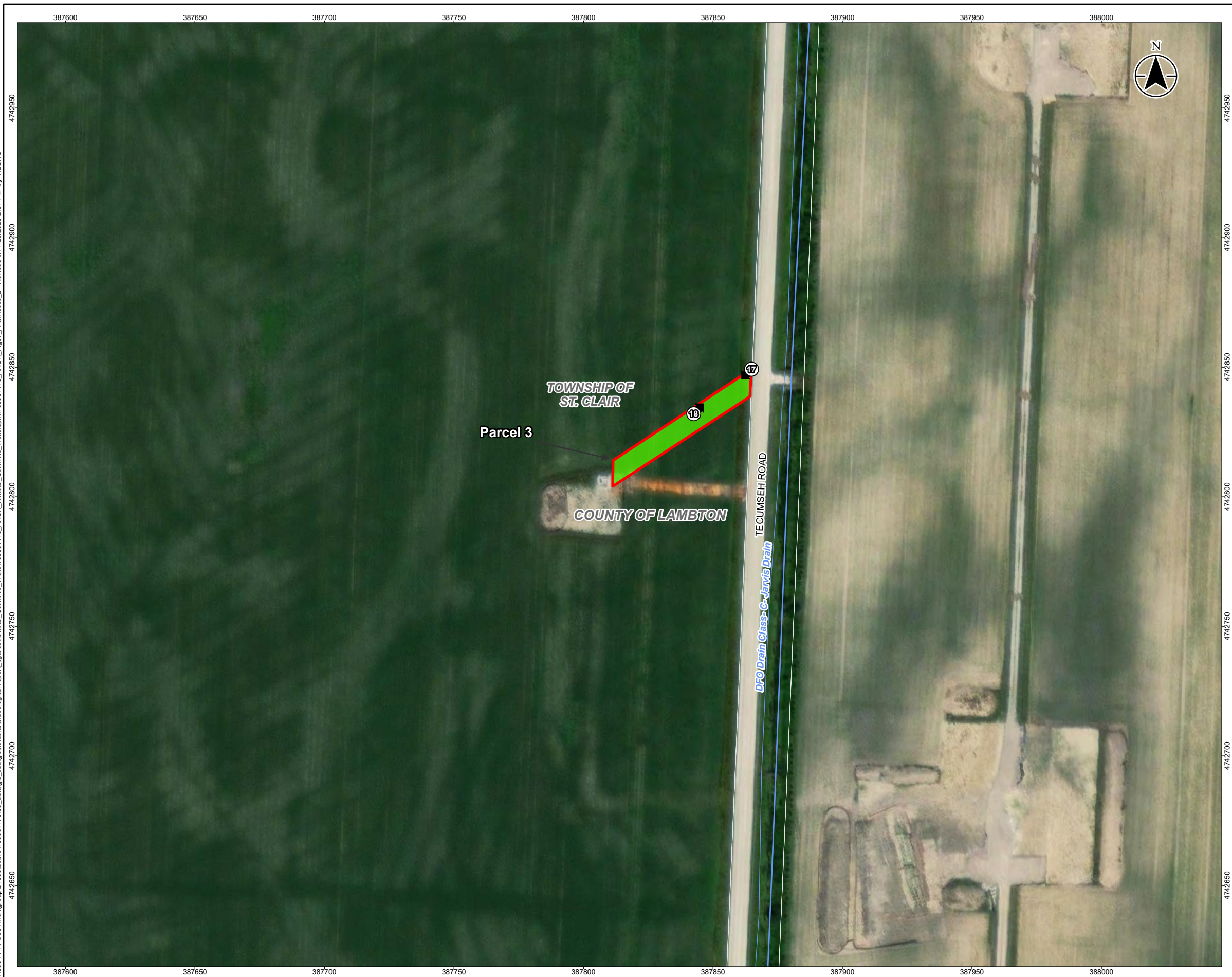
Project Location: Kimball - Colinville, Ontario
160901173 REVA
Prepared by HLONG on 2025-01-29
Technical Review by AW on 2024-01-28

Client/Project: ENBRIDGE GAS INC.
KIMBALL-COLINVILLE WELLS, MOP INCREASE - STAGE 1-2 ARCHAEOLOGICAL ASSESSMENT

Figure No. 6

Title: Portion of the 1880 Map of Moore Township





Stage 1-2 Archaeological Assessment: Kimball-Colinville Wells, Maximum Operating Pressure Increase
10 Closure
March 19, 2025

10 Closure

This report documents work that was performed in accordance with generally accepted professional standards at the time and location in which the services were provided. No other representations, warranties or guarantees are made concerning the accuracy or completeness of the data or conclusions contained within this report, including no assurance that this work has uncovered all potential archaeological resources associated with the identified property.

All information received from the client or third parties in the preparation of this report has been assumed by Stantec to be correct. Stantec assumes no responsibility for any deficiency or inaccuracy in information received from others.

Conclusions made within this report consist of Stantec's professional opinion as of the time of the writing of this report and are based solely on the scope of work described in the report, the limited data available and the results of the work. The conclusions are based on the conditions encountered by Stantec at the time the work was performed. Due to the nature of archaeological assessment, which consists of systematic sampling, Stantec does not warrant against undiscovered environmental liabilities nor that the sampling results are indicative of the condition of the entire property.

This report has been prepared for the exclusive use of the client identified herein and any use by any third party is prohibited. Stantec assumes no responsibility for losses, damages, liabilities or claims, howsoever arising, from third party use of this report. We trust this report meets your current requirements. Please do not hesitate to contact us should you require further information or have additional questions about any facet of this report.



2026 Kimball-Colinville Wells Drilling Project: Environmental Report
Appendix E Cultural Heritage Screening Report
November 7, 2025

Appendix E Cultural Heritage Screening Report





Memo

To: Enbridge Gas Ontario
Project/File: 160901240

From: Frank Smith, MA, CAHP
Stantec Consulting Ltd.
Date: August 29, 2025

**Reference: Cultural Heritage Memo: Kimball Replacement Wells TKC 71
Drilling Project**

Introduction

Enbridge Gas Ontario (Enbridge Gas) is undertaking the Kimball Replacement Wells Project¹ (the Project), within the Township of St. Clair, County of Lambton, Ontario. The Project is required to offset the reduction in deliverability due to abandonment of wells TKC 29 and 36. The Project will include drilling an 8.5/8-inch NGS well (TKC 71) and installing approximately 50 metres of NPS8 lateral to the Mid Kimball gathering line (Plate 1). TKC 71 is located on part Lot 17, Concession 8, in the former Township of Moore, County of Lambton, Ontario. The property on which the Project is situated, is bounded to the north by Rokeby Line.

To facilitate this Project, Enbridge Gas retained Stantec to prepare a Cultural Heritage Memo for the Study Area. The need to consider known and potential built heritage resources and cultural heritage landscapes is defined by Section 4.3.4 of the *Ontario Energy Board (OEB) Environmental Guidelines for the Location, Construction and Operation of Hydrocarbon Projects and Facilities in Ontario* (OEB 2023).

The objectives of this Memo are to identify known and potential built heritage resources and cultural heritage landscapes within, adjacent to, or crossed by the Project Study Area. If identified, recommendations for subsequent cultural heritage studies, such as a *Cultural Heritage Report: Existing Conditions and Preliminary Impact Assessment* (CHR), *Cultural Heritage Evaluation Reports* (CHERs), or *Heritage Impact Assessments* (HIAs) are made. This Memo follows the *Criteria for Evaluating Potential for Built Heritage Resources and Cultural Heritage Landscapes: A Checklist for the Non-Specialist* (the Checklist) published by the Ministry of Citizenship and Multiculturalism (MCM) in 2016 and last updated in 2022 (MCM 2022). The results of the checklist for the entire Study Area are contained in Appendix A.

¹ The Kimball Replacement Wells Project also includes TKC 70. The property containing this well was previously screened for cultural heritage value or interest and no further consideration is given to TKC 70 in this memo.

August 29, 2025
 Enbridge Gas Ontario
 Page 2 of 8

Reference: Kimball Replacement Wells TKC 71 Drilling Project: Cultural Heritage Memo

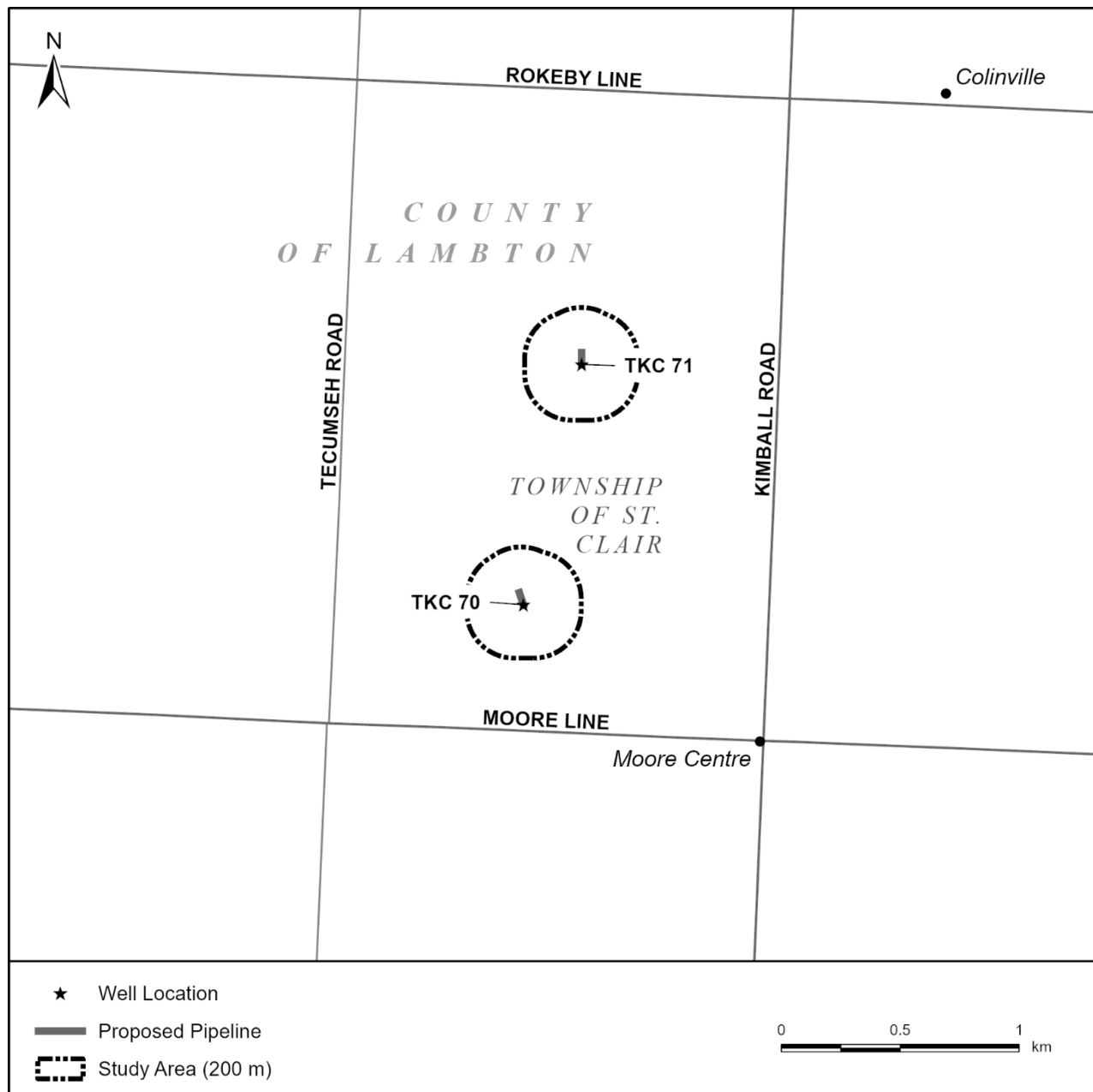


Plate 1 **Location of TKC 70 and TKC 71**

August 29, 2025
Enbridge Gas Ontario
Page 3 of 8

Reference: Kimball Replacement Wells TKC 71 Drilling Project: Cultural Heritage Memo

2 Methodology

The Memo comprises a community input program and a desktop review of available mapping, digital databases, and photography. The results of the desktop survey were used to complete the Checklist (MCM 2016). Information requests were conducted to determine the presence of known built heritage resources and cultural heritage landscapes. Community input included correspondence with the following:

- MCM
- Ontario Heritage Trust (OHT)
- Township of St. Clair

Digitized historical mapping and topographic mapping were reviewed to identify areas where potential built heritage resources and cultural heritage landscapes may be located. Mapping reviewed included:

- Belden, H. 1880. *Illustrated Historical Atlas of Lambton County*. Map of Moore Township. Toronto: H. Belden and Co. Map of Moore Township
- Department of Militia and Defence. 1912. *Topographic Map, Ontario, Sarnia Sheet*.
- Department of Militia and Defence. 1922. *Topographic Map, Ontario, Sarnia Sheet*.
- Department of National Defence. 1932. *Topographic Map, Ontario, Sarnia Sheet*.
- Department of National Defence. 1936. *Sarnia, Ontario*.
- Department of Mines and Technical Surveys. 1963. *Brigden, Lambton County, Ontario*. Ottawa: Map Distribution Office.
- Department of Mines and Technical Surveys. 1975. *Brigden, Lambton County, Ontario*. Ottawa: Map Distribution Office.

Present-day mapping and available online photography were also reviewed to identify potential built heritage resources and cultural heritage landscapes and confirm the location of known built heritage resources and cultural heritage landscapes, if applicable.

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 Enbridge Gas Ontario
 Page 4 of 8

Reference: Kimball Replacement Wells TKC 71 Drilling Project: Cultural Heritage Memo

Alongside community input and a review of historical mapping, a desktop review of databases was completed, including:

- Parks Canada Directory of Federal Heritage Designations (Parks Canada 2025a)
- Parks Canada Canada's Historic Places (Parks Canada 2025b)
- OHT Plaque Database (OHT 2025)
- Ontario Trails Council Find a Trail (Ontario Trails Council 2025)
- Canada GenWeb Cemetery Find a Cemetery (Can GenWeb 2025a)
- Canadian Heritage Rivers Systems (CHRS) (CHRS 2025)
- The United Nations Educational, Scientific and Cultural Organization (UNESCO) World Heritage List (UNESCO 2025)

3 Desktop Review

The Study Area for TKC 71 is located on part of Lot 17, Concession 8, in the former Township of Moore, County of Lambton. Settlement of the Township of Moore began in the 1830s. The first settlers in the new Township of Moore were veterans of the Napoleonic Wars who often received riverfront lots for their service to the Crown. Other large land grants in the township included grants to the children of United Empire Loyalists. Settlement in the back concessions of the township, including within the Study Area, was impeded by poor drainage. During the late 19th century, concerted efforts were made to improve drainage and arability within the township (Elford 1982; Belden 1880).

Lot 17, Concession 8 was granted by the Crown to John Lewis Fralick (Ontario Land Registry Access [OnLand] 2025). He was likely the son of a Loyalist family from New York that settled in Lennox and Addington County, Ontario (Buchanan 2024). Based on this, it is likely that this lot was held in speculation and remained unsettled until it was divided into west and east halves in 1849 (OnLand 2025).

Historical mapping from 1880 does not depict any owners or structures on Lot 17, Concession 8 (Belden 1880). Mapping from this period often only included structures and landowners who subscribed to the *Dominion Atlas* in which these illustrated historical township maps were added as a supplement (Caston 1997; Gentilcore 1984).

Topographic mapping from 1912 depicts a structure at the approximate location of the present-day residence on the adjacent property parcel at 1357 Rokeby Line. The mapping also depicts a cemetery adjacent to the Study Area at the northeast corner of

August 29, 2025
 Enbridge Gas Ontario
 Page 5 of 8

Reference: Kimball Replacement Wells TKC 71 Drilling Project: Cultural Heritage Memo

Lot 17, Concession 8. This cemetery is known as the “Smith and White Cemetery” and contains approximately 13 markers dating to between 1888 and 1907 (Canada GenWeb Cemetery Project 2025b). Based on Google Streetview Photography, these markers have been placed into a cement cairn. The residence and cemetery remain present on topographic mapping from 1922, 1932, and 1936 (Department of Militia Defence 1922; Department of National Defence 1932 and 1936).

Topographic mapping from 1963 no longer depicts a structure at the present-day location of 1357 Rokeby Line or depicts the cemetery. The mapping depicts an unpaved road matching the approximate alignment of the existing access road on the property as well as a series of oil and gas wells (Department of Mines and Technical Surveys 1963). Based on topographic mapping, the present-day residence at 1357 Rokeby Line was built *circa* 1964, on a severed parcel of part Lot 17, Concession 8. This is consistent with the style of the residence based on a review of Google Streetview photography. Topographic mapping from 1975 continues to depict the residence, access road, and oil and gas wells (Department of Mines and Technical Surveys 1975). While on part Lot 17, Concession 8, the residence at 1357 Rokeby Line is on a separate parcel outside of the Study Area.

4 Information Requests

Consultation occurred via email and included mapping of the Study Area. The results are summarized in Table 1.

Table 1 Municipal and Agency Information Results

Organization	Contact	Results
OHT	Samuel Bayefsky, Real Property Coordinator samuel.bayefsky@heritagetrust.on.ca	Information request sent on May 13, 2025, to Samuel Bayefsky, Real Property Coordinator at the Ontario Heritage Trust. A response was received from Samuel Bayefsky the same day. His email confirmed that the OHT neither owns nor protects via conservation easement properties within or immediately adjacent to the Study Area.
MCM	registrar@ontario.ca	Information request sent on May 13, 2025. Mariana Nito, Heritage Advisor, responded on May 16, 2025 that to date no properties within or adjacent to the Study Area have been designated by the Minister and MCM has no records of a provincial heritage property within or adjacent to the Study Area.
Township of St. Clair	Carlie Clemens, Deputy Clerk/Coordinator of Planning	Information request sent on May 13, 2025. Carlie McClemens, Deputy Clerk/Coordinator of Planning responded on May 22, 2025, that the Township does not maintain a municipal heritage register. Therefore, the Study Area contains no heritage designations, easements, or heritage by-laws.

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Enbridge Gas Ontario
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Reference: Kimball Replacement Wells TKC 71 Drilling Project: Cultural Heritage Memo

5 Recommendations

The Study Area met one indicator of cultural heritage value or interest on the MCM Checklist, for the "Smith and White Cemetery." However, this cemetery is located adjacent to the Study Area over one kilometre northeast of the proposed construction activity associated with TKC 71. Therefore, no potential for direct or indirect impacts to the cemetery is anticipated. Based on this understanding, no further cultural heritage studies are recommended for TKC 71.

6 Closure

This memorandum has been prepared for the sole benefit of Enbridge Gas Ontario and may not be used by any third party without the express written consent of Stantec Consulting Ltd. and Enbridge Gas Ontario.

We trust this memo meets your current requirements. Please do not hesitate to contact us should you require further information or have additional questions about any facet of this report.

Sincerely,

Stantec Consulting Ltd.



Digitally signed by
Smith, Frank
Date: 2025.08.28
14:30:20 -04'00'

Frank J. Smith MA, CAHP
Cultural Heritage Specialist
Phone: (226) 448-7417
frank.smith@stantec.com



Digitally signed by
Walter, Laura
Date: 2025.08.28
14:33:41 -04'00'

Laura Walter MA, CAHP
Cultural Heritage Specialist
Phone: (226) 962-6017
laura.walter@stantec.com

Attachment:

Attachment A MCM Checklist

August 29, 2025
Enbridge Gas Ontario
Page 7 of 8

Reference: Kimball Replacement Wells TKC 71 Drilling Project: Cultural Heritage Memo

7 References

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Enbridge Gas Ontario
Page 8 of 8

Reference: Kimball Replacement Wells TKC 71 Drilling Project: Cultural Heritage Memo

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August 29, 2025
Enbridge Gas Ontario

Reference: Kimball Replacement Wells TKC 71 Drilling Project: Cultural Heritage Memo

Attachment A MCM Checklist



**Ministry of Tourism,
Culture and Sport**

Programs & Services Branch
401 Bay Street, Suite 1700
Toronto ON M7A 0A7

Criteria for Evaluating Potential for Built Heritage Resources and Cultural Heritage Landscapes

A Checklist for the Non-Specialist

The **purpose of the checklist** is to determine:

- if a property(ies) or project area:
 - is a recognized heritage property
 - may be of cultural heritage value
- it includes all areas that may be impacted by project activities, including – but not limited to:
 - the main project area
 - temporary storage
 - staging and working areas
 - temporary roads and detours

Processes covered under this checklist, such as:

- *Planning Act*
- *Environmental Assessment Act*
- *Aggregates Resources Act*
- *Ontario Heritage Act* – Standards and Guidelines for Conservation of Provincial Heritage Properties

Cultural Heritage Evaluation Report (CHER)

If you are not sure how to answer one or more of the questions on the checklist, you may want to hire a qualified person(s) (see page 5 for definitions) to undertake a cultural heritage evaluation report (CHER).

The CHER will help you:

- identify, evaluate and protect cultural heritage resources on your property or project area
- reduce potential delays and risks to a project

Other checklists

Please use a separate checklist for your project, if:

- you are seeking a Renewable Energy Approval under Ontario Regulation 359/09 – [separate checklist](#)
- your Parent Class EA document has an approved screening criteria (as referenced in Question 1)

Please refer to the Instructions pages for more detailed information and when completing this form.

Project or Property Name

Kimball Replacement Wells TKC 71 Drilling Project

Project or Property Location (upper and lower or single tier municipality)

Township of St. Clair, Lambton County

Proponent Name

Enbridge Gas Ontario

Proponent Contact Information

Ryan Park, ryan.park@enbridge.com

Screening Questions

	Yes	No
1. Is there a pre-approved screening checklist, methodology or process in place?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

If Yes, please follow the pre-approved screening checklist, methodology or process.

If No, continue to Question 2.

Part A: Screening for known (or recognized) Cultural Heritage Value

	Yes	No
2. Has the property (or project area) been evaluated before and found not to be of cultural heritage value?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

If Yes, do **not** complete the rest of the checklist.

The proponent, property owner and/or approval authority will:

- summarize the previous evaluation and
- add this checklist to the project file, with the appropriate documents that demonstrate a cultural heritage evaluation was undertaken

The summary and appropriate documentation may be:

- submitted as part of a report requirement
- maintained by the property owner, proponent or approval authority

If No, continue to Question 3.

	Yes	No
3. Is the property (or project area):		
a. identified, designated or otherwise protected under the <i>Ontario Heritage Act</i> as being of cultural heritage value?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. a National Historic Site (or part of)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. designated under the <i>Heritage Railway Stations Protection Act</i> ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d. designated under the <i>Heritage Lighthouse Protection Act</i> ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e. identified as a Federal Heritage Building by the Federal Heritage Buildings Review Office (FHBRO)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f. located within a United Nations Educational, Scientific and Cultural Organization (UNESCO) World Heritage Site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

If Yes to any of the above questions, you need to hire a qualified person(s) to undertake:

- a Cultural Heritage Evaluation Report, if a Statement of Cultural Heritage Value has not previously been prepared or the statement needs to be updated

If a Statement of Cultural Heritage Value has been prepared previously and if alterations or development are proposed, you need to hire a qualified person(s) to undertake:

- a Heritage Impact Assessment (HIA) – the report will assess and avoid, eliminate or mitigate impacts

If No, continue to Question 4.

Part B: Screening for Potential Cultural Heritage Value

	Yes	No
4. Does the property (or project area) contain a parcel of land that:		
a. is the subject of a municipal, provincial or federal commemorative or interpretive plaque?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. has or is adjacent to a known burial site and/or cemetery?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. is in a Canadian Heritage River watershed?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d. contains buildings or structures that are 40 or more years old?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Part C: Other Considerations

	Yes	No
5. Is there local or Aboriginal knowledge or accessible documentation suggesting that the property (or project area):		
a. is considered a landmark in the local community or contains any structures or sites that are important in defining the character of the area?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. has a special association with a community, person or historical event?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. contains or is part of a cultural heritage landscape?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

If Yes to one or more of the above questions (Part B and C), there is potential for cultural heritage resources on the property or within the project area.

You need to hire a qualified person(s) to undertake:

- a Cultural Heritage Evaluation Report (CHER)

If the property is determined to be of cultural heritage value and alterations or development is proposed, you need to hire a qualified person(s) to undertake:

- a Heritage Impact Assessment (HIA) – the report will assess and avoid, eliminate or mitigate impacts

If No to all of the above questions, there is low potential for built heritage or cultural heritage landscape on the property.

The proponent, property owner and/or approval authority will:

- summarize the conclusion
- add this checklist with the appropriate documentation to the project file

The summary and appropriate documentation may be:

- submitted as part of a report requirement e.g. under the *Environmental Assessment Act*, *Planning Act* processes
- maintained by the property owner, proponent or approval authority

Instructions

Please have the following available, when requesting information related to the screening questions below:

- a clear map showing the location and boundary of the property or project area
 - large scale and small scale showing nearby township names for context purposes
- the municipal addresses of all properties within the project area
- the lot(s), concession(s), and parcel number(s) of all properties within a project area

For more information, see the Ministry of Tourism, Culture and Sport's [Ontario Heritage Toolkit](#) or [Standards and Guidelines for Conservation of Provincial Heritage Properties](#).

In this context, the following definitions apply:

- **qualified person(s)** means individuals – professional engineers, architects, archaeologists, etc. – having relevant, recent experience in the conservation of cultural heritage resources.
- **proponent** means a person, agency, group or organization that carries out or proposes to carry out an undertaking or is the owner or person having charge, management or control of an undertaking.

1. Is there a pre-approved screening checklist, methodology or process in place?

An existing checklist, methodology or process may already be in place for identifying potential cultural heritage resources, including:

- one endorsed by a municipality
- an environmental assessment process e.g. screening checklist for municipal bridges
- one that is approved by the Ministry of Tourism, Culture and Sport (MTCS) under the Ontario government's [Standards & Guidelines for Conservation of Provincial Heritage Properties](#) [s.B.2.]

Part A: Screening for known (or recognized) Cultural Heritage Value

2. Has the property (or project area) been evaluated before and found not to be of cultural heritage value?

Respond 'yes' to this question, if all of the following are true:

A property can be considered not to be of cultural heritage value if:

- a Cultural Heritage Evaluation Report (CHER) - or equivalent - has been prepared for the property with the advice of a qualified person and it has been determined not to be of cultural heritage value and/or
- the municipal heritage committee has evaluated the property for its cultural heritage value or interest and determined that the property is not of cultural heritage value or interest

A property may need to be re-evaluated, if:

- there is evidence that its heritage attributes may have changed
- new information is available
- the existing Statement of Cultural Heritage Value does not provide the information necessary to manage the property
- the evaluation took place after 2005 and did not use the criteria in Regulations 9/06 and 10/06

Note: Ontario government ministries and public bodies [prescribed under Regulation 157/10] may continue to use their existing evaluation processes, until the evaluation process required under section B.2 of the Standards & Guidelines for Conservation of Provincial Heritage Properties has been developed and approved by MTCS.

To determine if your property or project area has been evaluated, contact:

- the approval authority
- the proponent
- the Ministry of Tourism, Culture and Sport

3a. Is the property (or project area) identified, designated or otherwise protected under the *Ontario Heritage Act* as being of cultural heritage value e.g.:

- designated under the *Ontario Heritage Act*
 - individual designation (Part IV)
 - part of a heritage conservation district (Part V)

Individual Designation – Part IV

A property that is designated:

- by a municipal by-law as being of cultural heritage value or interest [s.29 of the *Ontario Heritage Act*]
- by order of the Minister of Tourism, Culture and Sport as being of cultural heritage value or interest of provincial significance [s.34.5]. **Note:** To date, no properties have been designated by the Minister.

Heritage Conservation District – Part V

A property or project area that is located within an area designated by a municipal by-law as a heritage conservation district [s. 41 of the *Ontario Heritage Act*].

For more information on Parts IV and V, contact:

- municipal clerk
- [Ontario Heritage Trust](#)
- local land registry office (for a title search)

ii. subject of an agreement, covenant or easement entered into under Parts II or IV of the *Ontario Heritage Act*

An agreement, covenant or easement is usually between the owner of a property and a conservation body or level of government. It is usually registered on title.

The primary purpose of the agreement is to:

- preserve, conserve, and maintain a cultural heritage resource
- prevent its destruction, demolition or loss

For more information, contact:

- [Ontario Heritage Trust](#) - for an agreement, covenant or easement [clause 10 (1) (c) of the *Ontario Heritage Act*]
- municipal clerk – for a property that is the subject of an easement or a covenant [s.37 of the *Ontario Heritage Act*]
- local land registry office (for a title search)

iii. listed on a register of heritage properties maintained by the municipality

Municipal registers are the official lists - or record - of cultural heritage properties identified as being important to the community.

Registers include:

- all properties that are designated under the *Ontario Heritage Act* (Part IV or V)
- properties that have not been formally designated, but have been identified as having cultural heritage value or interest to the community

For more information, contact:

- municipal clerk
- municipal heritage planning staff
- municipal heritage committee

iv. subject to a notice of:

- intention to designate (under Part IV of the *Ontario Heritage Act*)
- a Heritage Conservation District study area bylaw (under Part V of the *Ontario Heritage Act*)

A property that is subject to a **notice of intention to designate** as a property of cultural heritage value or interest and the notice is in accordance with:

- section 29 of the *Ontario Heritage Act*
- section 34.6 of the *Ontario Heritage Act*. **Note:** To date, the only applicable property is Meldrum Bay Inn, Manitoulin Island. [s.34.6]

An area designated by a municipal by-law made under section 40.1 of the *Ontario Heritage Act* as a **heritage conservation district study area**.

For more information, contact:

- municipal clerk – for a property that is the subject of notice of intention [s. 29 and s. 40.1]
- [Ontario Heritage Trust](#)

v. included in the Ministry of Tourism, Culture and Sport's list of provincial heritage properties

Provincial heritage properties are properties the Government of Ontario owns or controls that have cultural heritage value or interest.

The Ministry of Tourism, Culture and Sport (MTCS) maintains a list of all provincial heritage properties based on information provided by ministries and prescribed public bodies. As they are identified, MTCS adds properties to the list of provincial heritage properties.

For more information, contact the MTCS Registrar at registrar@ontario.ca.

3b. Is the property (or project area) a National Historic Site (or part of)?

National Historic Sites are properties or districts of national historic significance that are designated by the Federal Minister of the Environment, under the *Canada National Parks Act*, based on the advice of the Historic Sites and Monuments Board of Canada.

For more information, see the [National Historic Sites website](#).

3c. Is the property (or project area) designated under the *Heritage Railway Stations Protection Act*?

The *Heritage Railway Stations Protection Act* protects heritage railway stations that are owned by a railway company under federal jurisdiction. Designated railway stations that pass from federal ownership may continue to have cultural heritage value.

For more information, see the [Directory of Designated Heritage Railway Stations](#).

3d. Is the property (or project area) designated under the *Heritage Lighthouse Protection Act*?

The *Heritage Lighthouse Protection Act* helps preserve historically significant Canadian lighthouses. The Act sets up a public nomination process and includes heritage building conservation standards for lighthouses which are officially designated.

For more information, see the [Heritage Lighthouses of Canada](#) website.

3e. Is the property (or project area) identified as a Federal Heritage Building by the Federal Heritage Buildings Review Office?

The role of the Federal Heritage Buildings Review Office (FHBRO) is to help the federal government protect the heritage buildings it owns. The policy applies to all federal government departments that administer real property, but not to federal Crown Corporations.

For more information, contact the [Federal Heritage Buildings Review Office](#).

See a [directory of all federal heritage designations](#).

3f. Is the property (or project area) located within a United Nations Educational, Scientific and Cultural Organization (UNESCO) World Heritage Site?

A UNESCO World Heritage Site is a place listed by UNESCO as having outstanding universal value to humanity under the Convention Concerning the Protection of the World Cultural and Natural Heritage. In order to retain the status of a World Heritage Site, each site must maintain its character defining features.

Currently, the Rideau Canal is the only World Heritage Site in Ontario.

For more information, see Parks Canada – [World Heritage Site website](#).

Part B: Screening for potential Cultural Heritage Value

4a. Does the property (or project area) contain a parcel of land that has a municipal, provincial or federal commemorative or interpretive plaque?

Heritage resources are often recognized with formal plaques or markers.

Plaques are prepared by:

- municipalities
- provincial ministries or agencies
- federal ministries or agencies
- local non-government or non-profit organizations

For more information, contact:

- [municipal heritage committees](#) or local heritage organizations – for information on the location of plaques in their community
- Ontario Historical Society's [Heritage directory](#) – for a list of historical societies and heritage organizations
- Ontario Heritage Trust – for a [list of plaques](#) commemorating Ontario's history
- Historic Sites and Monuments Board of Canada – for a [list of plaques](#) commemorating Canada's history

4b. Does the property (or project area) contain a parcel of land that has or is adjacent to a known burial site and/or cemetery?

For more information on known cemeteries and/or burial sites, see:

- Cemeteries Regulations, Ontario Ministry of Consumer Services – for a [database of registered cemeteries](#)
- Ontario Genealogical Society (OGS) – to [locate records of Ontario cemeteries](#), both currently and no longer in existence; cairns, family plots and burial registers
- Canadian County Atlas Digital Project – to [locate early cemeteries](#)

In this context, adjacent means contiguous or as otherwise defined in a municipal official plan.

4c. Does the property (or project area) contain a parcel of land that is in a Canadian Heritage River watershed?

The Canadian Heritage River System is a national river conservation program that promotes, protects and enhances the best examples of Canada's river heritage.

Canadian Heritage Rivers must have, and maintain, outstanding natural, cultural and/or recreational values, and a high level of public support.

For more information, contact the [Canadian Heritage River System](#).

If you have questions regarding the boundaries of a watershed, please contact:

- your conservation authority
- municipal staff

4d. Does the property (or project area) contain a parcel of land that contains buildings or structures that are 40 or more years old?

A 40 year 'rule of thumb' is typically used to indicate the potential of a site to be of cultural heritage value. The approximate age of buildings and/or structures may be estimated based on:

- history of the development of the area
- fire insurance maps
- architectural style
- building methods

Property owners may have information on the age of any buildings or structures on their property. The municipality, local land registry office or library may also have background information on the property.

Note: 40+ year old buildings or structure do not necessarily hold cultural heritage value or interest; their age simply indicates a higher potential.

A building or structure can include:

- residential structure
- farm building or outbuilding
- industrial, commercial, or institutional building
- remnant or ruin
- engineering work such as a bridge, canal, dams, etc.

For more information on researching the age of buildings or properties, see the Ontario Heritage Tool Kit Guide [Heritage Property Evaluation](#).

Part C: Other Considerations

5a. Is there local or Aboriginal knowledge or accessible documentation suggesting that the property (or project area) is considered a landmark in the local community or contains any structures or sites that are important to defining the character of the area?

Local or Aboriginal knowledge may reveal that the project location is situated on a parcel of land that has potential landmarks or defining structures and sites, for instance:

- buildings or landscape features accessible to the public or readily noticeable and widely known
- complexes of buildings
- monuments
- ruins

5b. Is there local or Aboriginal knowledge or accessible documentation suggesting that the property (or project area) has a special association with a community, person or historical event?

Local or Aboriginal knowledge may reveal that the project location is situated on a parcel of land that has a special association with a community, person or event of historic interest, for instance:

- Aboriginal sacred site
- traditional-use area
- battlefield
- birthplace of an individual of importance to the community

5c. Is there local or Aboriginal knowledge or accessible documentation suggesting that the property (or project area) contains or is part of a cultural heritage landscape?

Landscapes (which may include a combination of archaeological resources, built heritage resources and landscape elements) may be of cultural heritage value or interest to a community.

For example, an Aboriginal trail, historic road or rail corridor may have been established as a key transportation or trade route and may have been important to the early settlement of an area. Parks, designed gardens or unique landforms such as waterfalls, rock faces, caverns, or mounds are areas that may have connections to a particular event, group or belief.

For more information on Questions 5.a., 5.b. and 5.c., contact:

- Elders in Aboriginal Communities or community researchers who may have information on potential cultural heritage resources. Please note that Aboriginal traditional knowledge may be considered sensitive.
- [municipal heritage committees](#) or local heritage organizations
- Ontario Historical Society's "[Heritage Directory](#)" - for a list of historical societies and heritage organizations in the province

An internet search may find helpful resources, including:

- historical maps
- historical walking tours
- municipal heritage management plans
- cultural heritage landscape studies
- municipal cultural plans

Information specific to trails may be obtained through [Ontario Trails](#).

2026 Kimball-Colinville Wells Drilling Project: Environmental Report
Appendix F Environmental Alignment Sheets
November 7, 2025

Appendix F Environmental Alignment Sheets





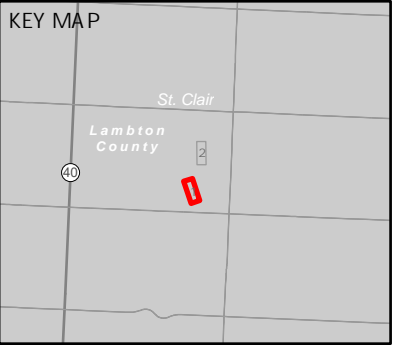
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Revised: 2025-08-15 By: jsegato

Resources	CONSERVATION AUTHORITY REGULATED AREA / ANSI		Regulation LimitSCRCA	
	WETLAND WATERCOURSE ANSI			
	VEGETATION			
	WATER WELL WITHIN 50 m			
	LINEAR FEATURES			
	APEC/ ACTIVE AGGREGATE SITE/ CH FEATURES WITHIN 50 m			
	SPECIES AT RISK (SAR) HABITAT			
<div>Construction Mitigation Notes: Note 1: Permit from SCRCA required</div> <div>Acronyms List BHR: Built Heritage Resources CHL: Cultural Heritage Landscape ECMM: Enbridge Construction and Maintenance Manual, September 25, 2022 (ECMM/2022) EPP: Environmental Protection Plan (Stantec, 2024) HDD: Horizontal Directional Drilling MNR: Ministry of Natural Resources SCRCA: St. Clair Region Conservation Authority SAR: Species at Risk</div>				
Construction Mitigation	CONSTRUCTION REQUIREMENTS			
	FISHERIES TIMING RESTRICTIONS (CONSTRUCT BETWEEN)			
	PIPELINE CROSSING METHODS			
	VEGETATION RESTRICTIONS			
	PERMITTING REQUIREMENTS		Note 6	
	MONITORING			
	SPECIES AT RISK (SAR) HABITAT			



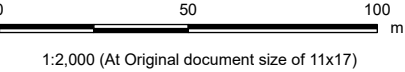
Legend

-  Proposed Well
-  Preferred Route



Notes

1. Coordinate System: NAD 1983 UTM Zone 17N
2. Contains information licensed under the Open Government License – Ontario, and the Open Government License - Canada, accessed 2025.
3. Orthoimagery World Imagery: Maxar, Microsoft. Date of Imagery unknown.
4. MECP Water well locations are approximate and have been positioned based on published UTM coordinates, source same as Note 2.
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Project Location
Sarnia, ON


160901240 REVA
Prepared by jsegato on 2025-08-15
Technical Review by AW on 2025-08-15

Client/Project
ENBRIDGE GAS INC.
KIMBALL WELLS

Figure No.
A-1

Title
**Environmental Alignment
Sheets - Map 1**

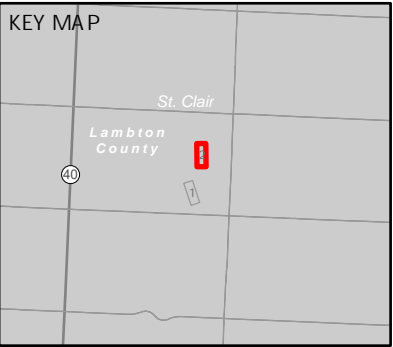
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Revised: 2025-08-15 By: jsegato

Resources	CONSERVATION AUTHORITY REGULATED AREA / ANSI		Regulation LimitSCRCA	
	WETLAND WATERCOURSE ANSI			
	VEGETATION			
	WATER WELL WITHIN 50 m			
	LINEAR FEATURES			
	APEC/ ACTIVE AGGREGATE SITE/ CH FEATURES WITHIN 50 m			
	SPECIES AT RISK (SAR) HABITAT			
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Construction Mitigation	CONSTRUCTION REQUIREMENTS			
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	PERMITTING REQUIREMENTS		Note 6	
	MONITORING			
	SPECIES AT RISK (SAR) HABITAT			



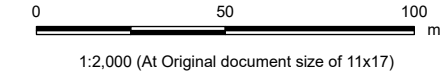
Legend

- Proposed Well
- Preferred Route
- Watercourse
- Wooded Area



Notes

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Sarnia, ON

160901240 REVA
Prepared by jsegato on 2025-08-15
Technical Review by AW on 2025-08-15

Client/Project
ENBRIDGE GAS INC.
KIMBALL WELLS

Figure No.
A-2

Title
**Environmental Alignment
Sheets - Map 2**