



uniongas

A Spectra Energy Company

June 12, 2008

Ms. Kristi Walli
Board Secretary
Ontario Energy Board
2300 Yonge Street, 26th Floor
Toronto, Ontario
M4P 1E4

Dear Ms. Walli:

**RE: Union Gas Limited ("Union")
East Owen Sound Replacement Exemption Request
EB-2008-0139**

Union hereby requests an exemption, under Section 95 of the Act, from the requirements of Section 90 for an Order granting Leave to Construct 18.7 kilometres of NPS 8 natural gas pipeline and ancillary facilities. This pipe is needed to replace the existing NPS 6 pipeline which must be relocated due to MTO road reconstruction plans. Replacing the existing pipeline with NPS 6 would not require OEB leave to construct approval however increasing the size to NPS 8 as proposed to defer the need for future reinforcement of the EOS line in 2009, meets the cost criteria of Section 90(1) of the OEB Act, requiring leave to construct. The proposed pipeline will be constructed in two phases starting in 2008 and finishing in 2009.

In Union's view, there are a number of reasons why this case warrants an exemption including:

1. Union holds an approved Franchise and Certificate of Public Convenience and Necessity for this area.
2. The MTO requires Union's facilities be relocated to allow proposed major roadway reconstruction work on Highway 26 between Woodford and Thornbury.
3. The pipeline will be constructed entirely within road allowance.
4. The alternative would be to replace all, or sections of NPS 6 with the same size pipe to facilitate the highway construction. This alternative would still require reinforcement of the EOS line, some of this looping would be required on the newly constructed section of Hwy. 26.
5. The proposed NPS 8 replacement scenario has a lower Net Present Value than the scenario which relocates sections of the NPS 6.
6. The NPS 8 replacement does not meet the threshold test in Section 90 for size and pressure, or for length in that it is smaller than NPS 12 and less than 20 km in length. The only component of Section 90 which captures this pipe is the cost, which exceeds the \$2 million threshold.
7. There are no landowner issues.

8. Union has completed an environmental screening for the replacement work and no significant environmental impacts will result from the proposed pipeline.
9. There is a demonstrated immediate need for the pipeline construction, given the pending roadway construction as noted in the MTO move order.

To further assist the Board in reviewing this matter, please find the attached package of supporting material which includes the following information:

1. A letter from MTO describing there future construction plans.
2. Letters from the municipalities

Union respectfully requests the Board initiate the process to review this request as soon as possible. Construction of the proposed NPS 8 pipeline is scheduled to commence in the fall of 2008.

If you require additional information, please contact Mark Murray, Manager, Regulatory Projects, Union Gas Limited at 519-436-4601.

Yours truly,



Dan Jones
Assistant General Counsel
:mjp
Encl.

cc: Neil McKay, Manager Facilities Applications
Zora Crnojacki, Project Advisor

EAST OWEN SOUND REPLACEMENT PROJECT

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Project Summary

1. The Ministry of Transportation (“MTO”) is proposing to reconstruct/relocate Highway 26 between the Hamlet of Woodford and the Town of Thornbury. MTO is proposing to commence this work in the spring of 2009 and be completed by the fall of 2010. This is a continuation of the reconstruction of Highway 26 which MTO commenced in 2005. In order to facilitate the reconstruction/relocation of Highway 26 MTO requires that Union Gas Limited (“Union”) relocate those portions of its East Owen Sound NPS 6 pipeline (“EOS”) in areas where there are conflicts between the new location of Highway 26 and the current location of the EOS pipeline.
2. Union Gas Limited (“Union”) is proposing to replace 18.7 km of the current EOS pipeline (“Project”) in 2008 and 2009. The current NPS 6 pipe will be replaced with NPS 8 pipe along Highway 26 from Woodford to Thornbury. Union proposes to construct the Meaford to Thornbury (“Phase I”) section in 2008 and 2009 and the Woodford to Meaford (“Phase II”) section in 2009 which will meet MTO’s requirements.

Background

3. Union’s EOS pipeline is 58 kilometers in length, comprising of NPS 6 and NPS 8 that was constructed in 1958 and 2005. The EOS pipeline is generally located within MTO’s road allowance for Highway 26, between the City of Owen Sound and the Town of Thornbury. In some locations the pipeline was constructed on easements to avoid rock outcrops along the highway. A map showing the location of the Project can be found at Schedule 1.
4. MTO approached Union with plans for the highway upgrades in 2007 and will serve Union with a Move Order later this year for Phase I. MTO has provided Union with a letter, dated

the 8th day of May, 2008, which provides additional details about MTO's work schedule. A copy of which is attached as Schedule 2. When Union examined the plans, Union identified numerous locations where MTO's proposed highway upgrades and the EOS pipeline are in conflict.

5. Union also reviewed the proposed reinforcement schedule for the EOS pipeline and determined that if the existing EOS pipeline is replaced with NPS 8 pipeline in 2008 and 2009, additional reinforcement on the EOS pipeline could be deferred.

Proposed Facilities

6. There has been continued growth on the EOS system in recent years due to development in the Thornbury, Craigleith, and Blue Mountain areas. Union's Distribution Planning group has developed a proposed reinforcement schedule for the EOS system based upon Union's forecasted growth in these areas over the next ten years.
7. Schedule 3 shows the proposed growth rate assumptions for the Thornbury, Craigleith and Blue Mountain areas for the next 10 years.
8. Based on expected growth, two scenarios were developed to meet the needs of the EOS system over the next ten year period.
9. Firstly, Union considered completing relocations in 2008 and 2009 to avoid MTO conflicts followed by reinforcement projects to meet the expected needs for the next 10 years.
10. Secondly, Union considered replacing the existing NPS 6 pipeline with NPS 8 pipeline, followed by reinforcement to meet the expected needs for the next 10 years.
11. Schematics summarizing these alternatives can be found in Schedule 4.

12. Union's preferred alternative is to replace 9.8 km of NPS 6 pipeline with NPS 8 pipeline in 2008 and 2009 being Phase I and replace 8.9 km of NPS 6 pipeline with NPS 8 pipeline in 2009 being Phase II.

Project Costs and Economics

13. Union's construction group reviewed the Conflict Areas, as well as the area where future reinforcement of the EOS system would take place to determine construction costs for the Project.
14. The costs of the alternatives were then determined, and the Net Present Value ("NPV") of each scenario was calculated and compared. The results of this analysis identified that the preferred option was to replace the existing EOS NPS 6 pipeline with NPS 8 pipeline. A summary table showing this analysis can be found at Schedule 5.
15. A Discounted Cash Flow report has not been completed for this Project as the Project is underpinned by the MTO's relocation requirements.
16. The estimated Project costs for the first phase are \$ 3.4 million. A detailed breakdown of these costs can be found at Schedule 6.

Design and Construction

17. The design and pipe specifications are outlined in Schedule 7. All the design specifications are in accordance with the *Ontario Regulations 210/01* under the *Technical Standards and Safety Act 2000, Oil and Gas Pipeline Systems*. This is the regulation governing the installation of pipelines in the Province of Ontario.

18. Since the proposed NPS 8 pipeline will be located on road allowance and in consideration for future potential development along the route, the proposed pipeline is designed to meet Class 3 location requirements.
19. The proposed NPS 8 pipe has an outside diameter of 219.1 mm and a wall thickness of 4.8 mm. The pipe is to be manufactured by the electric resistance weld process and will have specified minimum yield strength of 290 MPa. The pipe will be manufactured to the CSA Z245.1-02 Steel Line Pipe Standard for Pipeline Systems and Materials.
20. The pipeline will be hydrostatically tested in accordance with the Ontario Regulation requirements.
21. The minimum depth of cover will be in accordance with Clause 4.7 of the CSA Code Z662-07. Additional depth will be provided to accommodate existing or planned underground facilities, or in specific areas in compliance with the applicable regulated standards.
22. Schedule 8 describes the general techniques and methods of construction that will be employed in the construction of the proposed NPS 8 pipeline. This Schedule details the following activities; clearing, stringing of pipe, trenching, welding, backfilling and clean up. Union's construction procedures have been continually updated and refined in order to be responsive to landowner concerns and mitigate potential environmental effects related to pipeline construction.
23. Blasting is anticipated along the route. A copy of Union's blasting specification can be found at Schedule 9.
24. Material is readily available for this Project.

25. Schedule 10 indicates the proposed construction schedule for Phase I which is scheduled to commence in the fall of 2008 and be completed in spring of 2009.
26. The proposed pipeline will be constructed within the MTO and municipal road allowances. Union MTO and the municipality have agreed in principle to the proposed location of the pipeline. For the 2008 construction, the pipeline will be located on the south side of Highway 26, varying from one to two metres from property line. In the Township of Collingwood the pipe will be located on the east side of Grey Road 13. In Thornbury, the pipeline will be located on the south side of Peel Street. For the 2009 construction, it is expected that the pipeline will be located on the south side of Highway 26.
27. Union will provide the Board with a detailed map showing the location of Phase II of the proposed pipeline once the location has been finalized and an MTO Move Order has been received.

Landowners

28. Union has reviewed the pipeline Project with the directly-affected municipalities and no concerns have been identified. Letters from the municipalities affected by Phase I of the Project can be found at Schedule 11.
29. As the pipeline will be constructed entirely within the road allowance, no permanent easements will be required.

Environmental

30. MTO has or will complete a class environmental assessment for the proposed highway work. This report identified environmental features and mitigation measures that MTO proposes to

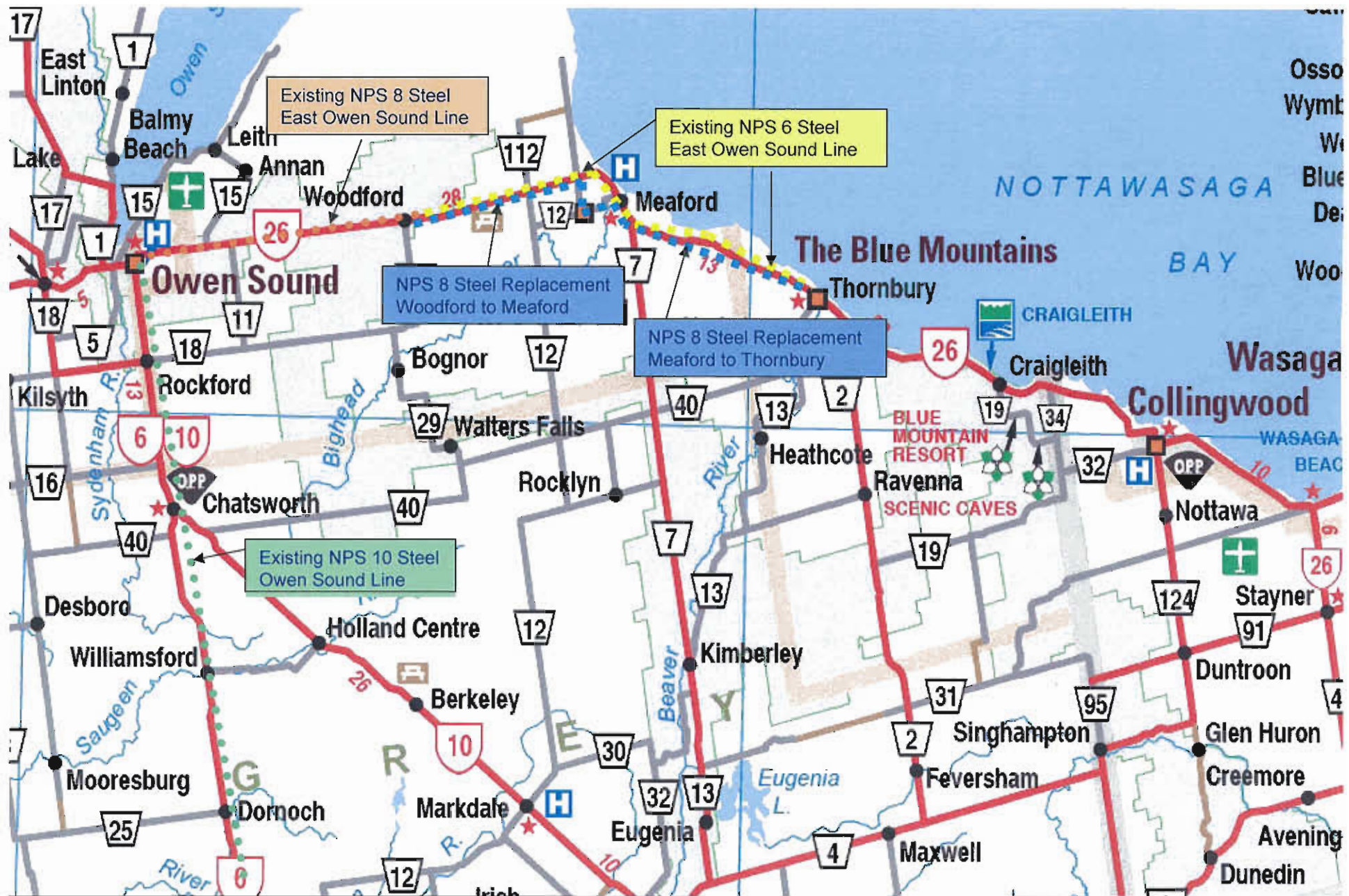
complete. As Union's work will be in the zone of influence of the MTO study, the features identified in the MTO report will also be impacted by the work Union is required to complete.

31. For the 2008 pipeline construction, Union has completed an environmental screening for the Project consistent with the requirements of E.B.O. 188. The results of this screening can be found at Schedule 12. Union will complete an environmental screening for the 2009 construction of the Project after the MTO assessment has been completed. Union will provide the Board with a copy of this report when it is completed.
32. Union will obtain all necessary environmental permits prior to construction.
33. In addition, Union commissioned Stantec Consulting to review the MTO environmental documents and a summary of their review and recommendations can be found at Schedule 13.
34. For Phase I construction, Stantec Consulting have reviewed the proposed location of the pipeline. The review did not identify any environmental issues that could not be mitigated using standard construction techniques.
35. Union proposes to retain Stantec Consulting to complete similar reviews as identified in the previous two paragraphs for Phase II.

Summary

36. Due to MTO's construction plan for Highway 26, Union is proposing to replace 18.7 kilometres of NPS 6 pipeline with NPS 8 pipeline between the Town of Woodford and the Town of Thornbury.
37. By upsizing the proposed pipeline to NPS 8, Union will be able to defer reinforcing the EOS pipeline.

38. Union proposes to complete the construction of the Project using standard construction practices.
39. Union has or will complete an environmental review of the Project. The Project can be completed without creating any long term significant environmental impacts.



EB-2008-0139

East Owen Sound Line Replacement Project – Location Map – Schedule 1

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RECEIVED

MAY 16 2008

Ministry of Transportation

Engineering Office
Planning and Design Section
Southwestern Region

659 Exeter Road
London, Ontario N6E 1L3
Telephone: (519) 873-4550
Facsimile: (519) 873-4600

Ministère des Transports

Bureau du génie
Section de planification et de conception
Région du Sud-Ouest

659, chemin Exeter
London (Ontario) N6E 1L3
Téléphone: (519) 873-4550
Télécopieur: (519) 873-4600



**LANDS DEPT.
Ontario**

May 8, 2008

Ontario Energy Board
C/O Union Gas
Brigitte B. Jones
Coordinator, Permits Administration
Lands Department
Union Gas Limited
P.O. Box 2001
50 Keil Drive North
Chatham, ON N7M 5M1

Dear Mrs. Jones:

**RE: Highway 26 Meaford to Thornbury (WP 57-00-00) and Highway 26 Woodford to Meaford (WP 167-91-00)
Union Gas Utility Relocations**

Union Gas has requested that the Ministry of Transportation provide information on our capital construction projects in support of their current application before the board to relocate / upgrade gas lines within the limits of these highway projects.

It is the intent of the Ministry of Transportation to issue Utility Move Orders in keeping with the provisions in the Public Transportation and Highway Improvement Act once these projects have advanced to an appropriate level of design. Union Gas and MTO have been working cooperatively in advance of the formal move order process to ensure that the timelines for our respective projects are coordinated to allow the successful execution of the work.

The Ministry of Transportation has two capital construction projects identified in the Southern Highways Program for Highway 26 in the County of Grey.

- Highway 26 Meaford to Thornbury (WP 57-00-00), approximately 9.8 km
- Highway 26 Woodford to Meaford (WP 167-91-00), approximately 9.6 km

The province has published in the Southern Highway program to deliver these projects in 2009-2011. Specific project timing is subject to change based on funding, planning, design, environmental approval, property acquisition and construction requirements.

.../2

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Highway 26 Meaford to Thornbury (WP 57-00-00)

This Class EA Group B project received Environmental Clearance – utility relocation, right of way designation, and property expropriation in September 2006. Stantec Consulting has since been retained by the MTO to complete the Detail Design. Property acquisition for this project is currently underway. Union Gas has been involved in the project since the preliminary design phase.

This highway improvement project involves the construction of two 1.5km long passing lanes and intersection realignments. Other operational improvements include the addition of turning lanes at some intersections.

During preliminary design MTO's consultant identified impacts to approximately 3.1 km of underground Union Gas plant, generally on the north side of Highway 26. Relocation of gas plant will require the completion of property acquisition, although sections of plant can be relocated in areas where property is not required. Property acquisition process is underway for this project. Union Gas has proposed to relocate their line to the south side of Highway 26.

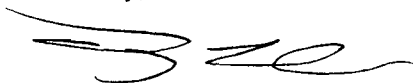
Highway 26 Woodford to Meaford (WP 167-91-00)

This Class EA Group B project received Environmental Clearance – right of way designation, and property expropriation in March 2003. This clearance is no longer valid and a Transportation Environmental Study Report (TESR) review is required. Stantec Consulting has been retained by the MTO to undertake the TESR review and complete the Detail Design. Property acquisition process for this project will begin soon. Union Gas has been involved in the project since the preliminary design phase.

This highway improvement project involves the construction of a westbound truck climbing lane and operational improvements including the addition of turning lanes at some intersections.

During preliminary design MTO's consultant identified impacts to approximately 4.2 km of underground Union Gas plant generally on the north side of Highway 26. Relocation of gas plant will require the completion of the property acquisition, although sections of plant can be relocated in areas where property is not required. Property acquisition has not yet begun for this project. This project is located directly east of WP 33-94-00, Owen Sound to Woodford which completed construction in 2007.

Sincerely,



Dan Leake, P. Eng.
Project Engineer

- c: M. Swim, MTO Field Services Engineer – Owen Sound
G. Hill, MTO Technical Services Officer – Owen Sound
B. Decker, MTO Technical Services Officer – Owen Sound
D. Green, Stantec Senior Project Manager

Union's Growth Rate Assumptions & Design Day Demand for Thornbury, Craigleith/Blue Mountains and Meaford for the Next Ten Years

Year	Thornbury			Craigleith/Blue Mountains			Meaford		
	Growth Rate Assumptions (No. Customers/Year)**	Design Day Demand/Year (10 ³ m ³ /day)	Total Design Day Demand for Thornbury (10 ³ m ³ /day)	Growth Rate Assumptions (No. Customers/Year)***	Design Day Demand/Year (10 ³ m ³ /day)	Total Design Day Demand for Craigleith/BM (10 ³ m ³ /day)	Growth Rate Assumptions (No. Customers/Year)***	Design Day Demand/Year (10 ³ m ³ /day)	Total Design Day Demand/Year for Meaford (10 ³ m ³ /day)
2007-2008	--	--	56.96	--	--	143.47			84.52
2008-2009	126	5.37	62.32	173	8.34	151.82	43	2.4	86.95
2009-2010	126	5.37	67.69	173	8.34	160.16	43	2.4	89.37
2010-2011	126	5.37	73.05	173	15.33	175.49	43	2.4	91.80
2011-2012	126	5.37	78.42	173	8.34	183.83	43	2.4	94.22
2012-2013	126	5.37	83.79	173	15.33	199.16	43	2.4	96.65
2013-2014	126	5.37	89.15	173	8.34	207.50	43	2.4	99.08
2014-2015	126	5.37	94.52	173	8.34	215.84	43	2.4	101.50
2015-2016	126	5.37	99.88	187	11.14	226.98	43	2.4	103.93
2016-2017	126	5.37	105.25	187	11.14	238.11	43	2.4	106.35
2017-2018	126	5.37	110.61	187	11.14	249.25	43	2.4	108.78

*2007-08 load used as base load, no customer growth specified since 2007-08 customer attachments already included in this figure

**Thornbury customer attachment forecast rate based on average historical plus growth that has been identified in the area

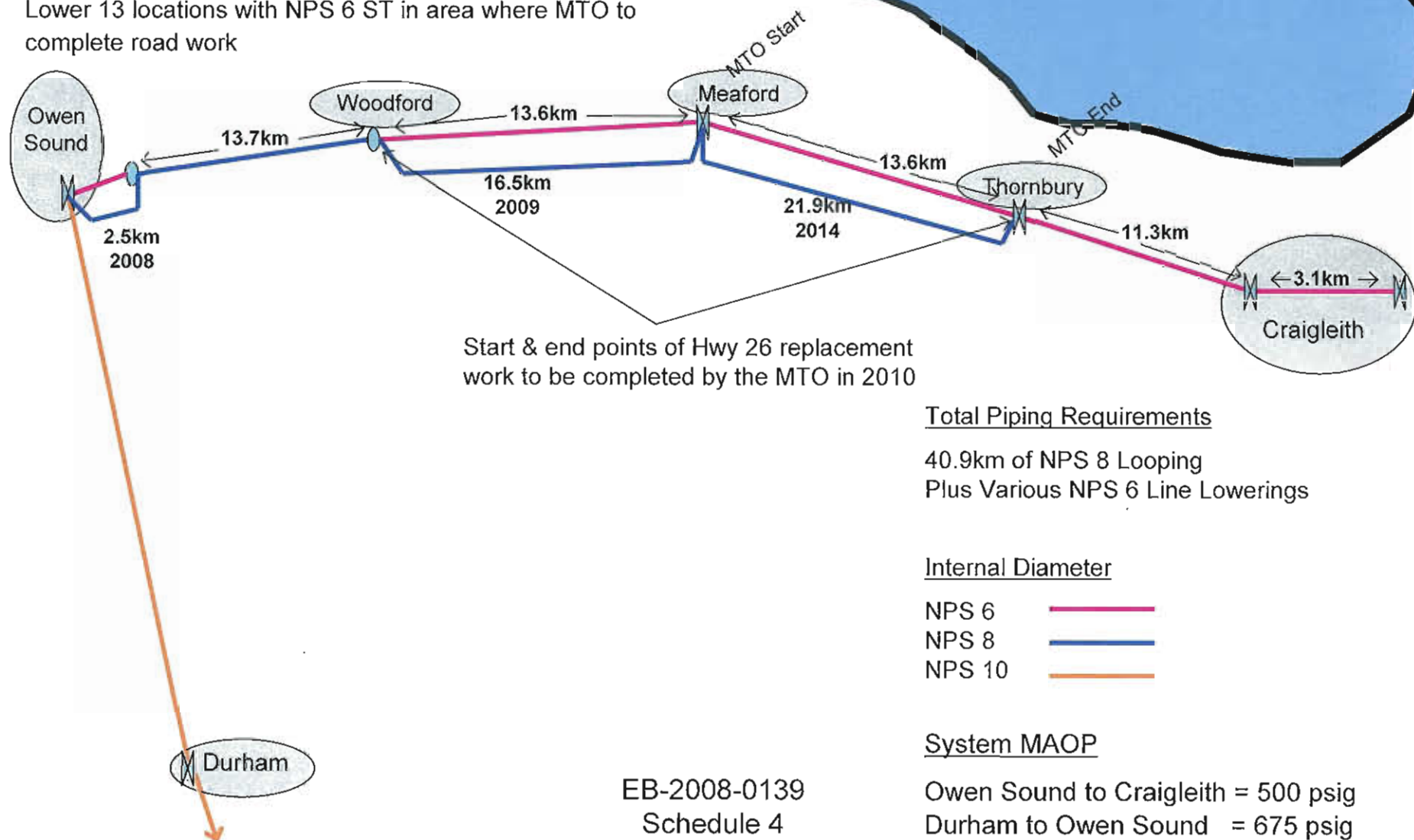
***Craigleith customer attachment forecast rate based on average historical plus growth that has been identified in the area

****Meaford customer attachment forecast rate based on average historical plus growth that has been identified in the area



BASE CASE ALTERNATIVE

Lower 13 locations with NPS 6 ST in area where MTO to complete road work



Total Piping Requirements

40.9km of NPS 8 Looping
Plus Various NPS 6 Line Lowerings

Internal Diameter

NPS 6 —
NPS 8 —
NPS 10 —

System MAOP

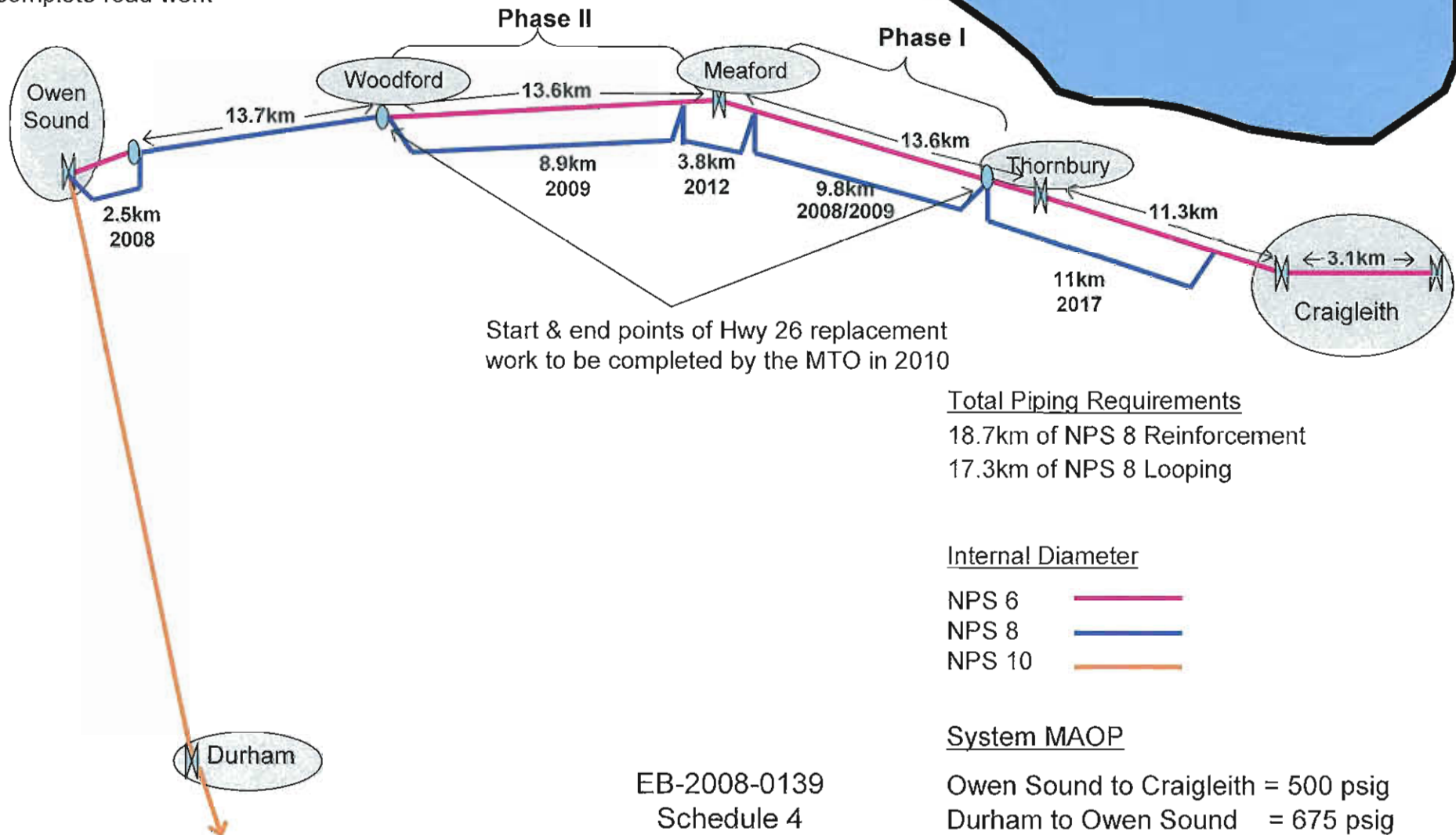
Owen Sound to Craigleith = 500 psig
Durham to Owen Sound = 675 psig

EB-2008-0139
Schedule 4



PREFERRED CASE ALTERNATIVE

Replace NPS 6 ST with NPS 8 ST in area where MTO to complete road work



EB-2008-0139
Schedule 4

EAST OWEN SOUND REPLACEMENT PROJECT

Cost and NPV Comparison of Alternatives

Scenario	Year	Length (km)	Capital Expenditures *	NPV
Preferred Case	2008	2.5	\$ 872,000	
	2009	8.9 / 9.8	6,418,401	
	2012	3.8	1,196,845	
	2017	11	4,423,635	
			12,910,881	
				-\$ 10,455,221
Base Case	2008	2.5	872,000	
	2009	16.5	5,663,346	
	2009	Lower	821,253	
	2010	Lower	791,900	
	2014	21.9	8,336,980	
			\$ 16,485,480	
				-\$ 13,494,368

* Capital Expenditures inflated to reflect year of construction dollars.

EAST OWEN SOUND REPLACEMENT

TOTAL ESTIMATED PROJECT COSTS – PHASE I

Pipeline and Equipment

9,800 metres of NPS 8	\$ 473,800
Valves, fittings, misc.	24,998
Stores Overhead	<u>34,918</u>

Total Pipeline and Equipment \$ 533,716

Construction and Labour

Prime Contract	\$2,385,366
Ancillary Contracts	115,000
Company Labour	27,000
Land Rights	<u>10,000</u>

Total Construction and Labour 2,537,366

Total Pipeline and Equipment and Construction and Labour \$ 3,071,082

Contingencies	311,818
Interest During Construction	<u>47,100</u>

Total Estimated Project Costs \$ 3,430,000

EAST OWEN SOUND REPLACEMENT PROJECT

DESIGN AND PIPE SPECIFICATIONS

Design Specifications

Class Location	-	Class 3
Design Factor	-	0.8
Location Factor (General)	-	0.7
Location Factor (Roads)	-	0.625
Design Pressure	-	4960 kPa
Maximum Operating Pressure	-	3450 kPa
Test Medium	-	Water
Test Pressure	-	6950 kPa
Valves/ Fittings	-	PN 50
Minimum Depth of Cover	-	1.2 m

Pipe Specifications

Size	-	NPS-8
Wall thickness	-	4.8 mm
Type	-	Electric Resistance Weld
Description	-	C.S.A. Standard Z245.1-02
Grade	-	290 MPa
Category	-	I
Coating	-	Yellow Jacket

GENERAL TECHNIQUES AND METHODS OF CONSTRUCTION

1. Union Gas Limited (“Union”) will provide its own inspection staff to enforce Union’s construction specifications and *Ontario Regulation 210/01 under the Technical Standards and Safety Act 2000, Oil and Gas Pipeline Systems*.
2. Pipeline construction is divided into several crews that create a mobile assembly line. Each crew performs a different function, with a finished product left behind when the last crew has completed its work.
3. Union’s contract specifications require the contractor to erect safety barricades, fences, signs or flashers, or to use flag persons as may be appropriate, around any excavation across or along a road.
4. It is Union’s policy to restore the areas affected by the construction of the pipeline to “as close to original condition” as possible. As a guide to show the “original condition” of the area, photos and/or a video will be taken before any work commences. When the clean up is completed, the approval of the landowner or appropriate government authority is obtained.
5. Construction of the pipeline includes the following activities:

Locating Running Line

6. Union establishes the location where the pipeline is to be installed (“the running line”). For pipelines within road allowances, the adjacent property lines are identified and the running line is set at a specified distance from the property line. For pipelines located on private easement, the easement is surveyed and the running line is set at the specified distance from the edge of the easement. The distance from the start of the pipeline (or other suitable point) is marked on the pipeline stakes and the drawings.

Clearing and Grading

7. The right-of-way is prepared for the construction of the pipeline. When required, bushes, trees and crops are removed and the ground leveled. When required, the topsoil is stripped and stored, and/or sod is lifted.

Stringing

8. The pipe is strung adjacent to the running line. The joints of pipe are laid end-to-end on supports that keep the pipe off the ground to prevent damage to the pipe coating.

Welding

9. The pipe is welded/fused into manageable lengths. The welds in steel pipe are radiographically inspected, if required, and the welds are coated.

Burying

10. Pipe may be buried using either the trench method or the trenchless method. All utilities that will be crossed or paralleled by the pipeline are located by the appropriate utility prior to installing the pipeline. Prior to trenching, all such utilities will be hand-located or hydro vacuumed.

Trench Method: Trenching is done by using a trenching machine or hoe excavator depending upon the ground conditions. Provisions are made to allow residents access to their property, as required. All drainage tiles that are cut during the trench excavation are flagged to signify that a repair is required. All tiles are measured and recorded as to size, depth, type and quality. This information is kept on file with Union. If a repair is necessary in the future, Union will have an accurate method of locating the tile. Next, the pipe is lowered into the trench. For steel pipe, the pipe coating is tested using a high voltage electrical tester as the pipe is lowered into the trench. All defects in the coating are repaired before the pipe is lowered in. Next, if the soil that was excavated from the trench is suitable for backfill, it is backfilled. If the soil is not suitable for backfill (such as rock), it is hauled away and the trench is backfilled with suitable material such as sand. After the trench is backfilled, drainage tile is repaired.

Rock Excavation: Rock in solid beds or masses will be removed by “Hoe Ram”, where practical. Where rock that is too hard to “Hoe Ram” is encountered, blasting will be permitted in accordance to Union’s construction procedures and the *Canadian Explosives Act*. The contractor shall obtain all necessary permits and shall comply with all legal requirements in connection with the use, storage and transportation of explosives.

Trenchless Method: Trenchless methods are alternate methods used to install pipelines under railways, roads, sidewalks, trees and lawns. There are two trenchless methods that could be used for the proposed NPS 8 pipeline, depending on the soil conditions, and the length and size of the installation. These methods are boring (auguring) and directional drilling.

Tie-Ins

11. The sections of pipelines that have been buried using either the trench or trenchless method are joined together (tied-in).

Cleaning and Testing

12. To complete the construction, the pipeline is cleaned, tested in accordance with Union's specifications using water.

Restoration

13. The final activity is the restoration. The work area is leveled, the sod is replaced in lawn areas and other grassed areas are re-seeded. Where required, concrete, asphalt and gravel are replaced to return the areas to as close to the original conditions as possible.

Specification for Rock Excavation

3.10.1 Application

This specification applies to all solid rock (in its original formation) encountered in trenching for pipelines and which must be removed. Throughout this specification, all sections applicable to rock excavation using the Swartklip Boulder Buster are identified with the statement "applicable to the Swartklip Boulder Buster."

3.10.2 EHS References

- Construction Regulations, Sections 196-206

3.10.3 General Requirements

Exercise great care to prevent damage to underground structures such as cables, conduits, and pipelines, water wells, springs and other underground water courses. Consult Environmental Construction Permitting when blasting near water courses. If the techniques of the Contractor appear to be injurious to these installations or formations, the Company maintains the right to require the cessation of work.

Solid rock, as classified by the Engineer, will be removed to a depth of 100 mm below the standard ditch depth to allow for padding between the rock and the pipe. The excavated ditch will be padded to a minimum thickness of 100 mm with earth, sand (free from rock), or other protective material approved by the Engineer. The padding material is to be placed in the trench in such a manner as to protect the pipe and the pipe coating from any hard points of rock. Use rockshield in locations designated by the Engineer.

Applicable to the Swartklip Boulder Buster - All Boulder Buster Operators must be certified and must carry proof of such certification while operating this equipment.

3.10.4 Use of Explosives

General

The Engineer will be notified of the Contractor's intention to use any explosive and may give consent to such use only after careful examination of the particular site of such use. After a careful inspection of the site, if there is an existing pipeline within 30m of any proposed blasting, Form 2707, Blasting Information Request is to be filled out for blasting approval. When it is necessary to use explosives, blasting will not be done until occupants of nearby buildings, stores, houses, places of business and landowners have been notified in writing by the Contractor sufficiently in advance to protect property and livestock. The Qualified Individual will be present during blasting.

3.10

Specification for Rock Excavation

Take every precaution to protect the public and its workers from any injury or harm which might arise from the use of explosives. Only thoroughly experienced workers in handling explosives will be permitted to supervise, handle, haul, load or detonate explosives.

Blasting is not permitted within five metres of an existing operating pipeline without a consultant's recommendation and Pipeline and Station Operations Engineering written approval. However, in no event will any explosives be used at a point where, in the opinion of the Engineer, the use of such explosives would be dangerous to the existing pipeline(s) of the Company. A minimum of 48 hours notice must be given to the Company so that mainline valves may be inspected for accessibility and operability before blasting.

Where specified by the Engineer, furnish the necessary equipment to employ air bubble curtains at water crossings for the protection of fish and wildlife during blasting operations.

Blasting Consultant

The Contractor will employ, at his expense, the services of a blasting specialist to advise on drilling, loading patterns, and vibration levels as necessary.

Storage and Handling

Under no circumstances will detonating caps be stored with explosives. Store detonating caps in a separate place according to applicable codes and regulations. Do not prime or fuse explosives until just before use. Under no circumstances are loaded and fused holes to be left overnight.

Flyrock and Matting

Blanket all shots using heavy duty rubber blasting mats in good condition (e.g., joined tires). Do not use mats that have suffered a significant loss of rubber laminations. Do not use overburden material and sandfill as matting material.

Keep all flyrock to an absolute minimum and do not allow flyrock to be deposited outside the right-of-way. If flyrock is scattered over the right-of-way or adjacent property, clean up such flyrock to the satisfaction of the landowner and his tenants. Haul the flyrock to a location satisfactory to the Engineer for disposal. If, in the opinion of the Qualified Individual, the amount of rock scattered over the right-of-way or adjacent property is unwarranted, the Company maintains the right to require the cessation of work.

Notwithstanding the above requirements, place the mats over the blast area with the following minimum laps:

1. Within 50 metres of any house, building, structure, hydro tower, overhead wire or parked car the mats will be double layered with lapped joints.
2. Use a 25% (minimum) lap at each abutting mat elsewhere.

Specification for Rock Excavation

Lay additional mats, as necessary, to control flyrock and to protect seismographic equipment at blast monitoring locations.

Warning Signals

Give distinct warning signals with an air horn during all blasting.

- Give five short signals to warn of pending detonation and need to clear the area.
- Give three short signals immediately before the blast.
- Give one long signal after the blast to indicate the safe completion of the blast.

Blasting

Do not blast before 8:00 am or after 7:00 pm, nor on Sundays and Statutory Holidays. In addition, do not start loading for any blast unless the loading can be completed and the blast matted and detonated no later 7 pm.

Vibration Limits

During all blasting operations, the Contractor will limit the ground vibration operated by each blast to the following limits:

- Where blasting is occurring within 30 m of an existing operating pipeline, the vibration will be controlled to a maximum peak particle velocity (PPV) of 50 mm/s above the pipeline.
- Where blasting is occurring within 200m of any structure and any other sites as required by the Company, the peak particle velocity will not exceed 50 mm/s.
- In ground adjacent to concrete or grout in place less than 60 hours, the peak particle velocity will not exceed 10 mm/s.

The above limits refer to the intensity of the ground vibrations generated by blasting in any of the three mutually perpendicular planes, measured at the nearest point above a line to the location of the blasting. Vibration monitoring shall be supplied by the contractor at his expense.

The Contractor must submit revised blasting patterns to the Company, and as set out in this specification, if unable to maintain satisfactory levels of vibration during blasting.

Monitoring Procedures for Blasting Near Existing Pipeline

The Blasting Contractor will retain the services of a Blasting Consultant to monitor vibration levels on existing Company pipelines during each blast if:

- The pipeline is greater than NPS 12; or
- The pipeline, at the time of blasting, is operating at a pressure greater than 1,723 kPa; or
- The maximum explosive charge per delay values exceed those given in Table 3.10.1.

3.10

Specification for Rock Excavation

The blasting consultant will also monitor the vibration and air overpressure levels at any nearby houses and structures within a minimum of 200 m from the blast and any other sites as required by the Company.

The monitoring equipment will consist of a portable seismograph capable of producing on-site printouts that include the following information:

- Ground vibrations up to 200 millimeters per second (mm/s) of peak particle velocity (PPV) in the three mutually perpendicular directions.
- Frequency of all three mutually perpendicular directions.

Set up the transducers at the nearest point above a line to the location of the blasting.

The Contractor will assist the blasting consultant in setting up the equipment, in the event that monitoring is required on an existing pipeline. All excavation in the vicinity of existing pipelines will be carried out in the presence of a Qualified Individual and only after the pipe location has been established by electronic means.

The printout of each seismographic reading will be given to the Qualified Individual immediately after each blast.

Table 3.10.1

Stand-off distance from facility (m)	Maximum Explosive Charge (kg per delay)
5	1.00
6	1.44
7	1.96
8	2.56
9	3.24
10	4.00
12	5.76
14	7.84
16	10.24
18	12.96
20	16.00
22	19.36
24	23.04
26	27.04
28	31.36
30	36.00

Construction and Maintenance Manual

Specification for Rock Excavation

Excessive Vibration Readings

If there is any one seismographic reading in excess of the limits set out above, the following will apply:

1. Should any two consecutive seismographic readings fall between 50 and 80 mm/s PPV, the Blasting Contractor will cease all further blast hole loading other than those required for a third reading. The pipe will be exposed and a third reading will be taken on the pipe.
 - **If this third reading is below 50 mm/s PPV**, blasting may continue.
 - **If the third reading exceeds 50 mm/s PPV**, the Blasting Contractor will cease all blasting in the area and move to a new area and continue blasting. The Blasting Contractor will then submit a revised loading pattern to the Company for review in the area where blasting has been discontinued.
2. Should any one seismographic recording be in excess of 80 mm/s PPV, the Contractor will cease all further blast hole loading other than those required for one subsequent reading. The pipe will be exposed and the subsequent reading will be taken on the pipe.
 - **If this reading is below 50 mm/s PPV**, blasting may continue.
 - **If this reading exceeds 50 mm/s PPV**, the Contractor will cease all blasting in the area and move to a new area and continue blasting. The Contractor will then submit a revised loading pattern to the Company for review in the area where blasting has been discontinued.
3. In any area where blasting has been discontinued, blasting may only be resumed when permitted by the Qualified Individual.

Excavating and Backfill

When excavating loose rock from the trench after blasting, the Contractor must keep loose rock separate from any overburden that has previously been stripped. This can either be done by piling the overburden on the "spoil" side of the trench and the loose rock on the "work" side of the trench to be hauled out, or by piling both the overburden and the loose rock separately on the spoil side of the trench. The method to be used will depend upon the amount of overburden, width of the trench, and the type of terrain. The Qualified Individual will decide the preferred method and the material to haul away.

After backfilling operation is complete, the Contractor will remove excess material from the right-of-way. The material will be disposed of at a location satisfactory to the Engineer. This is also applicable to the Swartklip Boulder Buster.

Permits

Any permits necessary for blasting will be obtained by and at the expense of the Contractor, unless specified in the work description in the construction contract. Comply with all legal requirements in connection with the use, storage and transportation of explosives, including but not limited to the Canadian Explosives Act. Proper notification will be made to the authority having jurisdiction when required and conformance with all legal requirements will be made.

3.10

Specification for Rock Excavation

3.10.5 Damages

The Contractor will take all necessary precautions not to damage any structure owned by others. If damage should occur, the owner of the damaged structure will be contacted jointly by representatives of the Company and the Contractor and the repairs will be made at the Contractor's expense under the direction and to the satisfaction of the owner. This also includes damage to Company pipelines. This is also applicable to the Swartklip Boulder Buster.

3.10.6 Measurements

Rock removed for the clearing of right-of-way will not be considered as rock excavation.

A record of the location and quantities of all trench excavation classified as solid rock will be made for each property by the Inspector. This record will be submitted to the Contractor for acceptance and signature, after acceptable trench has been completed across the property. When signed by authorized representatives for both parties, this record will form the basis for calculating the compensation due to the Contractor for trenching in solid rock.

All areas to be considered as loose rock requiring removal by backhoe must be authorized by the Qualified Individual at the time the trench is being dug. No other areas will be considered as loose rock excavation. Also applicable to the Swartklip Boulder Buster.

3.10.7 Basis of Payment

Solid rock excavation will be paid for at the unit price per lineal metre as covered in Item 18 (a) (b) or (c) of the Schedule of Unit Prices. Loose shale rock that must be removed by backhoe will be paid for at the price per lineal metre as given in item 18 (d), or (e) but will not include rock already paid for in item 18 (a), (b), or (c). Earth or sand padding in bottom of trench salvaged from spoil and disposal of rock spoils, will be considered as part of the cost of rock excavation.

East Owen Sound Reinforcement Proposed Pipeline Construction Schedule - Phase I

Task Name	2007				2008												2009							
	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
Environmental Assessment and Routing																								
Engineering																								
Obtain Land Rights																								
Material Acquisition																								
File Application																								
OEB Approval																								
Construction Survey																								
Construction and Testing																								
Clean-Up spring 2010																								
In-Service (June 30, 2009)																								

Note: construction of the Woodford to Meaford Project is expected to commence in the summer of 2009 and the construction time will be similar to that outlined for the Meaford to Thornbury section as described above. Timing of construction is dependent on completion of final design and issuance of the move order by the MTO.

March 24, 2008

Attn: Jim McCannell

Town of the Blue Mountains
Box 310, 26 Bridge Street East
Thornbury, Ontario
N0H 2P0

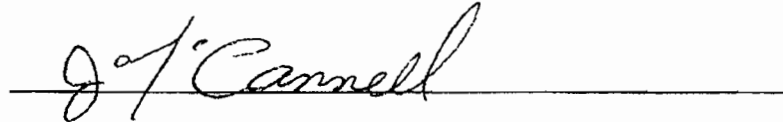
RE: OUR REFERENCE N08-303
Highway 26 - East Limits of Meaford to West Limits of Thornbury

Union Gas Limited in conjunction with the MTO will be completing a 9.8km of NPS 8" High Pressure Steel Gas Main Replacement Project along Highway 26. Work is anticipated to start in August 2008 and be completed by December 2008. Timelines are approximate and subject to change based on results of Ontario Energy Board ruling.

Limits of project: Starting at the Thornbury West Limits (Peel St) westerly to the Meaford East Limits. All the proposed work at this time is under MTO jurisdiction however should we need to leave MTO jurisdiction and require your approval we will contact you at that time.

Could you please sign this letter below and FAX back ASAP to (519) 885-7542
Attn: Kevin Schimus thereby confirming that you have no objections with Union Gas Ltd. proceeding with this project. If you have any further questions, please don't hesitate to call.

Jim McCannell



Thank You.

Sincerely,



JIM McCANNELL
Manager, Roads and Drainage

jmccannell@thebluemountains.ca

Kevin Schimus

Construction Projects Team Lead
Union Gas Ltd. | Waterloo District
A Spectra Energy Company
kschimus@uniongas.com
519-885-7513

26 Bridge St. E., Box 310
Thornbury, ON
N0H 2P0

Tel: 519-599-3131 ext 271
Shop: 519-599-6714
Fax: 519-599-7328

March 27, 2008

Attn: Phillip Taylor
Superintendent,
Transportation Services
Municipality of Meaford
21 Trowbridge Rd W.
Meaford, Ontario
N4L 1A1

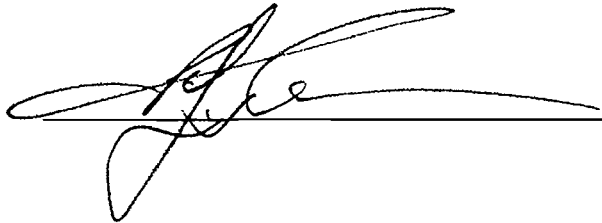
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Phillip Taylor



Thank You.

Sincerely,

Kevin Schimus

Construction Projects Team Lead
Union Gas Ltd. | Waterloo District
A Spectra Energy Company
kschimus@uniongas.com
519-885-7513

March 24, 2008

Attn: Gary Howey

Grey County
595 9th Ave East
Owen Sound, Ontario
N4K 3E3

**RE: OUR REFERENCE N08-303
Highway 26 - East Limits of Meaford to West Limits of Thornbury**

Union Gas Limited in conjunction with the MTO will be completing a 9.8km of NPS 8" High Pressure Steel Gas Main Replacement Project along Highway 26. Work is anticipated to start in August 2008 and be completed by December 2008. Timelines are approximate and subject to change based on results of Ontario Energy Board ruling.

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Could you please sign this letter below and FAX back ASAP to (519) 885-7542
Attn: Kevin Schimus thereby confirming that you have no objections with Union Gas Ltd. proceeding with this project. If you have any further questions, please don't hesitate to call.

Gary Howey



Thank You.

Sincerely,

Kevin Schimus

Construction Projects Team Lead
Union Gas Ltd. | Waterloo District
A Spectra Energy Company
kschimus@uniongas.com
519-885-7513



Union Gas

Environmental Checklist

The Project Originator is responsible for reviewing and completing the following checklist to determine if the project should be forwarded to EH&S Planning for their review. **When completing this form, please ensure that a Description of Feature is given and that the Proposed Mitigation is identified for those features marked YES in the Impacted column.**

Project Name: East Owen Sound Replacement Project **Project Number:**

Date: 2007-10-24

Project Originator: Waterloo District

Project Description: Union Gas Limited is proposing to replace approximately 9.8 km. of NPS 6 with NPS 8 along Highway 26, between the towns of Meaford and Thornbury, in the Municipality of Meaford in the County of Grey.

The new pipeline will begin from the east side of Meaford and travel along the southside of Highway 26 to a point west of Thornbury at County Road 113 (Alfred Street West). The pipeline will then turn south on the west side of the road to Peel Street where it will proceed eastward on the east side of the ROW ending once again at Highway 26.

The work is necessary as the Ministry of Transportation (MTO) is proposing to upgrade Hwy 26 between Meaford and Thornbury. The MTO requires Union Gas to relocate the existing pipeline to accomodate the new upgrades of the highway.

Feature and Description	Impacted Yes/No	Proposed Mitigation
Water Course Crossings Description: Crossings see attached drawings for locations Ten (10) Watercourse Crossings	Yes	See sections 1.44 and 3.45 C&M Manual for mitigation. Adhere to C&M and permit requirements. Watercourse Crossing to be completed using horizontal directional drill or dam and pump. Dam and pump crossing to be completed after July 1, 2008.
Social Impacts Description: Construction in road allowance Noise, Dust, Traffic	Yes	See sections 18.7 and 18.8 of the C&M manual for mitigation Noise - will be controlled to the greatest extent possible so as to minimize disruption to nearby residents. (i.e. ensure all equipment have proper mufflers) Dust - will be controlled as needed. Traffic - Union will adhere to MTO traffic control plans.
Land use Designations Description: East Meaford Creek Shales Earth Scienec ANSI, Deer Yard	No	ANCI located in west half of alignment. Deer yard in proximity of route. - Work will be within Highway 26 ROW. Construction anticipated to have no effect.
Agricultural Resources Description: Agricultural activities located adjacent to construction site.	No	See sections 3.46 and 3.25 C&M Manual for mitigation Work is proposed within limits of the MTO road allowance. No impacts are expected.

Vegetation and Wildlife Habitat Description: .Shrubs and roadside vegetation.	Yes	Minimal removal. Vegetation will be cleared in the fall of 2008 thus avoiding any avian nesting concerns. Work will take place within cleared areas.
Water Wells and Hydrology Description: Blasting, Water Wells	Yes	Blasting may be necessary. Union will coordinate blasting survey and waterwell monitoring where necessary.
Heritage Resources Description: Archaeological Resources	Yes	<p>MTO carried out a Stage 1 and Stage 2 Archaeological Assessment as part of the Class EA. One site was identified however in the area where the East Gravel Road School is believed to have been. A quantity of artifacts were recovered.</p> <p>Construction has been designed to avoid impacts to the archaeological site by staying within the existing MTO right-of-way. The site will be labeled as an Environmentally Sensitive Area to protect it during construction.</p> <p>If artifacts or human burials are discovered at the time of construction, the Environmental Planner must be contacted immediately at 1-800-571-8446, Extention 2936</p>
Geological Resources and Minerals Description:	No	N/A
Additional Concerns Description:	No	N/A



Stantec

April 24, 2008

Union Gas Limited
50 Keil Drive North
Chatham, Ontario N7M 5M1

Attention: Doug Schmidt, Environmental Planner

Dear Mr. Schmidt,

**Reference: Review of Ontario Ministry of Transportation ("MTO") Environmental Class
EA Documentation for Meaford to Thornbury Highway 26 Road Upgrades**

Introduction

This letter report provides an analysis and review of potential environmental and socio-economic concerns associated with construction of the Union Gas Limited (UGL) natural gas distribution pipeline within the road allowance for Highway 26 between Meaford and Thornbury, Ontario. Portions of the letter report are based on information documented in a Ministry of Transportation Class Environmental Assessment (EA) report for road works to be conducted on Highway 26 in the same location. The purpose of this analysis is to identify environmental, social and regulatory issues/constraints with implications to proposed pipeline construction activities.

An existing UGL NPS 6-inch natural gas pipeline is located in the northern road allowance that is not consistent with the proposed road improvements. The new NPS 8 inch pipeline is proposed within existing rights-of-way (ROW), see **Figure 1**. Pipeline construction would occur from the Town of Meaford eastward in the ROW on the south side of Highway 26. Nearing Thornbury, the proposed route turns south along the west side of County Road 113 (Alfred Street West) and then eastward along Peel Street on the east side of the ROW. In addition to a review of the Class EA report, route surveys to document potential constraints and sensitive locations were conducted on September 28, 2007 and March 11, 2008.

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Review of Ontario Ministry of Transportation ("MTO") Environmental Class EA Documentation for Meaford to Thornbury Highway 26 Road Upgrades

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Background

During planning for proposed road upgrades, a Class EA consistent with the requirements of the Class EA for Provincial Transportation Facilities (MTO, 2000) was undertaken. The preliminary design study and Class EA are described in the document "Transportation Environmental Study Report – Highway 26, Improvements from Thornbury to Meaford (G.W.P. 57-00-00)" (Stantec, 2006). This report is consistent with the findings and plans associated with these reports.

Natural Environment Constraints

The proposed pipeline route does not impact provincially significant wetlands, locally significant wetlands, provincial or national parks or conservation areas. While there are small wet areas along the route, none have been evaluated using the Ontario Wetland Evaluation System and none are considered to be significant at any level of jurisdiction (Stantec, 2006). However, a number of environmental, socio-economic and cultural issues/constraints were assessed and mitigation measures were identified. The following provides a summary of the identified constraints, comments on their potential implications and discusses mitigation measures where appropriate.

Designated Features

There are two designated natural features along the Highway 26 right-of-way between Meaford and Thornbury. They are:

- East Meaford Creek Shales Earth Science ANSI –This is a 220 hectare valleyland, located in the west half of the alignment, that contains East Meaford Creek (coolwater) (**Figure 1**). The area is important for geologic reasons, as well as, for hosting a variety of Paleozoic fossils. This provincial ANSI is designated by the Ministry of Natural Resources (**see photos 5, 6**).
- Grey County Forest #40, St. Vincent Tract – This is a 30 hectare managed tract of lowland hardwoods (**Figure 1**). The dominant Ecological Land Classification (ELC) community is a fresh-moist ash and white spruce mixed forest, with an ash mineral deciduous swamp inclusion. It is adjacent to and north of the Highway 26 right-of-way in the east half of the alignment and is managed by the County of Grey.

The proposed route is outside the boundaries of the Niagara Escarpment Plan and is not within Niagara Escarpment Development Control.

Comment

The proposed pipeline alignment is within the south side of the Highway 26 right-of-way. Therefore pipeline construction is anticipated to have no effect on these designated features.

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Review of Ontario Ministry of Transportation ("MTO") Environmental Class EA Documentation for Meaford to Thornbury Highway 26 Road Upgrades

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Aquatic Habitats and Communities

Thirteen culverts were identified crossing the alignment, see **Figure 1**. Of these, three watercourses support warm-water baitfish habitat and one watercourse has the potential to support cool-water habitat. The nine other drainage features do not flow during drier periods of the year. **Table 1** is a Summary Chart of Drainage Features. Watercourses identified as containing or potentially containing fisheries habitat are described below:

- Near Meaford, **Whitelaw's Creek (WC# 3, Figure 1)** comes from the south on the east side of Side Road 13. It is an intermittent waterway flowing west along Highway 26 in the south road-side ditch for approximately 100m and then crosses beneath Highway 26 in an open-bottom concrete culvert. Fisheries data collected by Stantec indicate that the watercourse supports warmwater baitfish. The following species were collected: creek chub and northern redbelly dace. The Ministry of Natural Resources (MNR) had no species data available. In this area, the proposed route is bordered by light industrial and commercial land uses to the west and a rural farm to the east of Side Road 13 (**see photo 3**).
- **East Meaford Creek, Workman's Creek (WC# 5, Figure 1)** is the only watercourse within the study limits that may contain cold-water habitat. According to both MNR and Grey Sauble Conservation Authority file records, this watercourse is named Workman's Creek, although MTO project information refers to it as East Meaford Creek, in keeping with its associated *East Meaford Creek Shales Area of Natural and Scientific Interest* (ANSI) designation. There is a steep drop in an existing concrete culvert presenting a barrier to fish migration.

While the MNR has no fish species list available for East Meaford Creek at this location, there is some anecdotal history that the watercourse may be a migration route for rainbow trout. However, this information has not been confirmed and further; the Ministry of Natural Resources has indicated that it is not considered to be a sensitive watercourse. This watercourse is considered to have habitat with the potential to support coolwater sportfish species (i.e., salmonids); however, no fish species were observed during Stantec fisheries investigations that included bait traps and backpack electrofishing. (**See photos 5, 6**).

- An **Unnamed Tributary to Georgian Bay (WC# 12, Figure 1)**, flowing north on the east side of the Christie Beach Road, was wet at the time of survey; although flow was very low. This watercourse exhibited characteristics indicating a warm-water fishery (**see photo 13**). Bait traps were set by Stantec and no fish were captured. The MNR had no species data available.
- The **Northwest Tributary to Little Beaver Creek (WC# 13, Figure 1)** is the only drainage feature in the alignment that is within the Little Beaver Creek subwatershed. Land-use around the drainage feature is agriculture; apple orchard and open field (**see photo 14**). Fish species that inhabit the main branch of Little Beaver Creek may also have access to the Northwest Tributary during high flows.

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Fisheries data collected by Stantec indicate that the watercourse supports warmwater baitfish. The following species were collected: blacknose dace, brook stickleback, fathead minnow, bluntnose minnow, creek chub and northern redbelly dace. The MNR had no species data available.

Comment

All work proximal to waterways should begin with the installation of sediment control measures, as appropriate to protect the waterway against sedimentation. Sediment control measures are discussed in the following sections of this report. If a drainage feature is wet / flowing, the Horizontal Directional Drill (HDD) method should be used. A benefit of the HDD is that, typically, there is no disturbance to riparian or in-stream areas. If an HDD crossing technique is deemed not practical, a dam and pump procedure including appropriate sediment control measures will then be utilized. Union will contact the Grey Sauble Conservation Authority (GSCA) prior to initiating the dam and pump procedure.

All open cut and dam / pump crossings are to be completed in one day including the installation of all mitigation measures. If crossings can not be completed in this time frame the GSCA is to be notified.

Based on sampling data collected by Stantec and information provided by the Ministry of Natural Resources and the Grey Sauble Conservation Authority, fish communities at Whitelaw's Creek (WC#3), Unnamed Tributary to Georgian Bay (WC#12), and Northwest Tributary to Beaver Creek (WC#13) consist of warm-water species. As such, no activity will be permitted between April 1 and June 30 in water or in riparian zones at Whitelaw's Creek (WC#3), Unnamed Creek (WC#12) or the Northwest Tributary to Little Beaver Creek (WC#13). Contrastingly, East Meaford Creek is reported to support cool-water species. A cool-water construction window would not allow in-stream works between March 31 and June 15. As the East Meaford Creek is a cool-water drainage feature that the MNR does not consider to be a sensitive watercourse, if cool-water species are identified within the watercourse, a fall closing of the window would be enforced. During site investigations, no rare or critical fish habitats were identified.

Table 1 Summary Chart of Drainage Features

Watercourse Identification	Dry or Wet at Time of Survey	Water Regime (Warm, Cold)/Window
WC#1 Tributary to Whitelaw's Creek	Dry	Warm /April 1- June 30
WC#2 Tributary to Whitelaw's Creek	Dry	Warm/ April 1- June 30
WC#3 Whitelaw's Creek	Wet	Warm/ April 1- June 30
WC#4 Tributary to East Meaford Creek	Dry	Warm/ April 1- June 30

April 24, 2008

Review of Ontario Ministry of Transportation ("MTO") Environmental Class EA Documentation for Meaford to Thornbury Highway 26 Road Upgrades

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Table 1 Summary Chart of Drainage Features

Watercourse Identification	Dry or Wet at Time of Survey	Water Regime (Warm, Cold)/Window
WC#5 East Meaford Creek	Dry	Cool/ March 31- June 15
WC#6 Tributary to Georgian Bay	Dry	Warm/ April 1- June 30
WC#7 Tributary to Georgian Bay	Dry	Warm/ April 1- June 30
WC#8 Tributary to Georgian Bay	Dry	Warm/ April 1- June 30
WC#9 Tributary to Georgian Bay	Dry	Warm/ April 1- June 30
WC#10 Tributary to Georgian Bay	Dry	Warm/ April 1- June 30
WC#11 Tributary to Georgian Bay	Dry	Warm/ April 1- June 30
WC#12 Tributary to Georgian Bay	Wet	Warm/ April 1- June 30
WC#13 Northwest Tributary to Little Beaver Creek	Wet	Warm/ April 1- June 30

TERRESTRIAL FEATURES

Twenty species of reptiles and amphibians have been recorded in the vicinity of the alignment. Three of these species (i.e., eastern Massasauga rattlesnake, eastern milksnake, and ribbonsnake) are considered to be significant species. Their habitat was not identified within the Highway 26 right-of-way. Two records (1924, 1975) indicate the presence of the provincially and federally threatened Massasauga rattlesnake in the area. However, this is the historical range; the species is not likely to be found there today. There are historic records of two other Species of Special Concern the eastern ribbonsnake (1938) and the milksnake (1940).

Comment

The federal Species at Risk Act and the provincial Endangered Species Act offer protection for the habitats of threatened species. Species of Special Concern are not protected by any provincial or federal legislation. However, the MNR ensures that the habitats of these species are given regard during planning and development activities. Since the proposed route is entirely within existing rights-of-way, there is little potential for impact to these species or their habitats by this pipeline construction project.

VEGETATION COMMUNITIES AND WILDLIFE HABITAT

Twenty-seven vegetation communities were identified within the immediate area. None of these communities is considered to be significant at national or provincial scales. Sugar maple and American beech are common throughout the region, and are often associated with basswood, red and white ash, yellow birch, red maple, red, white, and bur oaks. There may be minimal tree removal within the ROW to construct this pipeline. This operation will be undertaken outside of the avian breeding/nesting window with only those trees necessary being removed.

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Review of Ontario Ministry of Transportation ("MTO") Environmental Class EA Documentation for Meaford to Thornbury Highway 26 Road Upgrades

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Two historical deer wintering yards were identified proximal to the proposed route (**Figure 1**). One of the areas identified is located within the vicinity of on-going land development for a residential subdivision on Lora Bay Road, although the ecological function of the deer yard area is being protected as part of the development. The other deer yard is associated with the County of Grey managed forest #40, St. Vincent Tract, north of and adjacent to the Highway 26 right-of-way. No removal of deer yard habitat is anticipated within the existing cleared right-of-way to construct this pipeline.

Migratory Birds

Actively nesting barn swallows were observed inside the concrete culverts at WC#2 Southwest Tributary to Whitelaw's Creek, WC#3 Whitelaw's Creek, and WC#13 Northwest Tributary to Little Beaver Creek within the Highway 26 corridor. All species of swallows are considered to be migratory species and are protected under the *Migratory Birds Convention Act* (1994). Although no tree clearing is anticipated for the pipeline construction, other migratory birds may nest in trees near the right-of-way.

Comment

Where the HDD crossing method is used, no impacts to culverts or nests are anticipated. As well, this project is planned for fall construction which is outside of bird nesting periods.

In addition, standard protocol for highway construction in Ontario is to address the nesting habitat concern by blocking the culverts prior to nesting time. Assuming pipeline construction activities occur within the envelope of the road construction the mitigation developed should incorporate all pipeline construction activities as well.

SOCIAL AND ECONOMIC ENVIRONMENTS

The social/economic environment along the pipeline route is generally rural in nature, with agricultural operations including apple orchards. Scattered recreational, commercial and residential uses are common along the route. Lands in Meaford, west of Swarthmore Drive are designated as Urban Fringe.

Dust and noise are known to occur during pipeline construction activities. Often, right-of-way dust is created on non-vegetated agricultural lands; however, this project is located within a ROW where sweeping can be effective at reducing air borne particulates. Noise is not anticipated to be a common concern in this rural highway setting however all equipment should be properly muffled to minimize noise as much as possible.

Agricultural Operations and Tile Drainage

As indicated in the County of Grey Official Plan (2000), agriculture is the dominant land use. There are several large orchards (generally apple) and associated fruit/country markets. To substantiate the importance of agricultural land in the area, The County of Grey has designated lands to preserve and support agriculture. Lands designated as Special Agricultural are located

April 24, 2008

Review of Ontario Ministry of Transportation ("MTO") Environmental Class EA Documentation for Meaford to Thornbury Highway 26 Road Upgrades

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within the area, west of the East Meaford Creek ANSI, westerly to the west intersection of Swarthmore Drive/Sideroad 13 (**Figure 1**).

Construction is proposed to occur adjacent to two agricultural fields that are reported to contain tile drainage infrastructure (**Figure 1**). An agricultural field located on the south east corner of 13th Sideroad, adjacent to the Town of Meaford, is randomly tile drained. A second field is mapped as systematically tile drained. It is located adjacent to and south of Highway 26 in the field on the west side of County Road 113. Another randomly tile drained field is mapped on the Raven Golf Club at Lora Bay, adjacent to Highway 26 on the north side of Highway 26 between Lora Bay Road and County Road 113, just west of Thornbury. This third field is north of the highway and outside of the construction area.

Comment

Pipeline construction on the south side of Highway 26 and within the existing right-of-way is not anticipated to have significant effects on agricultural operations. The precise location of the drainage tiles should be determined prior to construction to ensure that they are not disturbed by pipeline construction.

Commercial/Industrial

The proposed project is located in rural areas of the Municipality of Meaford and the Town of the Blue Mountains; however, there are several commercial businesses along the route. In general, commercial businesses are clustered near Meaford, and include a commercial plaza that includes a grocery store. Access to all commercial/industrial properties will remain intact during construction. These businesses may experience an increase in sales during the construction period and are not anticipated to be negatively affected by the pipeline or its' construction.

Community and Residential

In the County of Grey Official Plan (2000), the lands surrounding the right-of-way are designated primarily as Rural. There are a number of residences scattered along the alignment. The residences are both permanent and seasonal. Some are associated with agricultural operations or small businesses. A cluster of residential land development, known as Lora Bay, exists north of Highway 26 along Christie Beach Road. Further development is expected to occur in this area. As the proposed project is to be within an established right-of-way no negative impacts to communities or residences are anticipated with access maintained during construction.

Recreational*Golf Course*

The Raven Golf Club at Lora Bay is located on the north side of Highway 26, west of the Town of Thornbury (**Figure 1**). The southern boundary of the golf course is adjacent to Highway 26. At this location, some additional land is required for the highway improvement; however, the proposed pipeline is planned to be constructed on the south side of the ROW and no impact to the golf course resulting from the pipeline construction is anticipated.

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Georgian Trail

A public recreational feature along Highway 26 is the Georgian Trail, a multi-purpose, shared-use trail that accommodates walking, cycling, and cross-country skiing (**Figure 1**). The Georgian Trail runs parallel to Highway 26 between Thornbury and Meaford, on the north side of the highway, along a former Canadian National Railway. The use and enjoyment of this trail is not anticipated to be negatively impacted by the pipeline or its construction.

Comment

Although there are no identified watercourses flowing onto the golf course, care should be taken to ensure that dust, erosion and sediment do not impact the operating conditions of this business. If an unanticipated interruption to access is experienced to commercial or industrial traffic or to local residents or hikers along the Georgian Trail, traffic and pedestrians etc. should be permitted to pass safely.

Assuming pipeline construction activities occur within the envelope of the road construction the mitigation developed should encompass all pipeline construction activities.

Archaeology and Cultural Resources

Stage I and II Archaeological Assessments have been completed as part of the MTO Class EA. The final report is on file with the Ontario Ministry of Transportation. The Stage I assessment focused on heritage resources registered in the Ontario Ministry of Culture Archaeological Sites Database within two kilometers of the project. As a result five locations were identified. Three were labeled as find spots and two were labeled undetermined.

As stated in the report, Belden's 1880 map of The County of Grey shows that the route for Highway 26 has been altered somewhat over the past 100 years. A map of St. Vincent Township shows three homes and a school along the route that became Highway 26. The four structures identified during the archival search were singled out for special examination during the assessment. No archaeological materials were found in the vicinity of the three homesteads. However, in the area where the East Gravel Road School (Findspot 1) is believed to have been, a quantity of artifacts including ceramics, window glass, brick, and nails were recovered.

A stone-lined well was also found at that location. The school, known as the "East Gravel Road School", the "Low School" and later the "Swarthmore School" was closed due to lack of pupils in 1941. This area is now heavily overgrown with secondary growth forest.

Comment

Highway construction has been designed to avoid impacts to the archaeological site (Findspot 1) identified in the Stage 1 and Stage 2 Archaeological Assessment by staying within the existing Ministry of Transportation right-of-way in the vicinity of the site. It is recommended that the archaeological site be protected during construction by labeling the site as an ESA on construction drawings.

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Should human remains be identified during any construction or future maintenance operations, all work in the vicinity of the discovery shall be immediately suspended. Notification will be made to the Ontario Provincial Police, or local police, who will conduct a site investigation and contact the district coroner. Notification will also be made to the Registrar of Cemeteries, Ministry of Consumer and Commercial Relations (416-326-8404). Should other cultural heritage values (archaeological or historical materials or features) be identified during operations, all activity in the vicinity of the recovery shall be suspended and the Ministry of Culture archaeologist contacted.

There do not appear to be any built heritage resource constraints to this proposed pipeline construction project. The Ministry of Culture has provided Archaeological Clearance for this project.

Sediment and Erosion Control

Any encroachment into aquatic habitat will need to be quantified when design details are confirmed during the detail design phase. General mitigation measures are provided herein; however, specific details will need to be added when the environmental impact assessment is finalized.

Various mitigation techniques will be employed during construction to reduce the risk of impacts to natural environment features. Mitigation measures for sediment erosion and dust control will be implemented to prevent sediment and dust from entering aquatic resources.

The primary principles associated with sedimentation and erosion protection measures are to: (1) minimize the duration of soil exposure; (2) retain existing vegetation, where feasible; (3) encourage re-vegetation; (4) divert runoff away from exposed soils; (5) keep runoff velocities low; and to (6) trap sediment as close to the source as possible. To address these principles, the following mitigation measures are proposed:

- No equipment will be permitted to enter any aquatic resources during construction;
- Silt fencing will be used along all construction areas adjacent to aquatic resources and the boundaries of the site. Additionally, straw bale flow checks, rock flow checks, or silt fence flow checks should be installed in all ditches immediately upstream of their discharge into any aquatic resources;
- All excavated materials requiring stockpiling (fill, topsoil, etc.) will be stabilized and kept a safe distance from any sensitive natural features. The perimeter of the stockpiles will be encircled with silt fencing;
- All exposed soil areas will be stabilized and re-vegetated, through the placement of seeding, mulching or sodding, immediately upon completion of construction activities;
- Refueling of equipment will be carried out a minimum of 50 metres away from any aquatic resources to avoid potential impacts, in the event that an accidental spill occurs;

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- Straw bale dams will be placed in advance of sewer (catchment) inlets;
- In addition to the specified requirements, additional silt fence, straw bales, and rip-rap should be moved on site prior to grading operations to provide a contingency supply in the case of an emergency; and
- All sediment and erosion controls should be monitored regularly (weekly and following rain events) and properly maintained as required. Excess trapped sediments and controls are to be removed only after the soils of the construction area have been stabilized and adequately re-vegetated.

Water Well Monitoring

To help ensure that residents along the route alignment do not experience a change to water quality or quantity from domestic wells, Union's Standard Water Well Monitoring Program will be implemented, which involves retaining the services of a hydrogeologist to identify the wells that require monitoring.

SUMMARY

Natural environment features have been identified proximal to the alignment of the natural gas pipeline along Highway 26 between Meaford and Thornbury. Ensuring that the watercourses are protected by standard construction practices including the sediment and erosion control measures discussed in this document, migratory birds are protected, the golf course and other businesses' issues are addressed, agriculture is not disrupted, archaeological resources are not disturbed, and that the designated features are not impacted will help to ensure that no significant effects result from the pipeline construction. Aligning the pipeline within the existing MTO right-of-way minimizes the potential of negative effects to the natural environment relating to the pipeline construction.

Please contact me directly if you have any questions or comments.

Sincerely,

STANTEC CONSULTING LTD.



Steve Thurtell

Project Manager

Tel: (519) 836-6050

Fax: (519) 836-2493

Steve.Thurtell@stantec.com

Attachments: Features Maps
Photographic Records