

**ENBRIDGE GAS DISTRIBUTION INC.  
POST-CONSTRUCTION  
ENVIRONMENTAL MONITORING REPORT NO. 1**

**TORONTO PORTLANDS REINFORCEMENT PROJECT: NORTH END  
EB-2006-0305**

Prepared by  
Enbridge Gas Distribution Inc.  
April 9, 2009

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## 1.0 Introduction

In the summer of 2007 the Ontario Energy Board (“OEB”) under docket number EB-2006-0305 granted Enbridge Gas Distribution Inc. (“Enbridge”) Leave to construct and operate an NPS 36 (36 inch diameter) natural gas pipeline to serve the Portlands Energy Center (PEC) in the City of Toronto, ON. Prior to obtaining approval, Enbridge conducted the following studies to select a pipeline route, identify potential impacts resulting from construction, and prepare mitigative measures to minimize environmental and socio-economic impacts.

<u>Report Title</u>	<u>Conducted by:</u>	<u>Date</u>
Stage 1 Archaeological Assessment of the Proposed Enbridge Gas Distribution System Reinforcement Pipeline, City of Markham to the City of Toronto	New Directions Archaeology Inc.	2003
Updating Study: Environmental and Socio-Economic Impact Assessment Toronto Port Lands System Reinforcement Pipeline: North End	Dillon Consulting Limited	November 2006
Arborist Report Toronto Port Lands System Reinforcement Pipeline: North End	Dillon Consulting Limited	September 2007
The Stage 2 Archeaological Assessment of the Proposed Enbridge Gas NPS 36 Toronto Reinforcement Pipeline, City of Toronto, Ontario	D.R. Poulton & Associates Inc.	December 2006

Construction of this pipeline began on January 4, 2008 and was completed on October 7, 2008. The pipeline was commissioned on October 9, 2008.

This report has been prepared in accordance with OEB EB-2006-0305 Board Staff Proposed Conditions of Approval as described on the next page.

- 3.1 Both during and after construction, Enbridge shall monitor the impacts of construction, and shall file four copies of both an interim and a final monitoring report with the Board. The interim monitoring report shall be filed within six months of the in-service date, and the final monitoring report shall be filed within fifteen months of the in-service date. Enbridge shall attach a log of all complaints that have been received to the interim and final monitoring reports. The log shall record the times of all complaints received, the substance of each complaint, the actions taken in response, and the reasons underlying each action.
- 3.2 The interim monitoring report shall confirm Enbridge adherence to Condition 1.1 and shall include a description of the impacts noted during construction and the actions taken or to be taken to prevent or mitigate the long-term effects of the impacts of construction. This report shall describe any outstanding concerns identified during construction.
- 3.3 The final monitoring report shall describe the condition of any rehabilitated land and the effectiveness of the mitigation measures undertaken. The results of the monitoring programs and analysis shall be included and any recommendations made as appropriate. Any deficiency in compliance with any of the Conditions of Approval shall be explained.

This report is limited to items that have been identified prior to April 2009. Items addressed after this date will be identified in the final Post-Construction Environmental Monitoring Report. This report will summarize actual construction procedures and identify any significant deviations from proposed construction activities.

## **2.0 Project Description**

The Toronto Port Lands Reinforcement Project was constructed to provide a reliable supply of natural gas to meet the demands of the Portlands Energy Centre. This facility will provide electricity to the existing Hydro One network to feed into the Ontario market administered by the Independent Electricity System Operator.

The pipeline was connected to an existing natural gas distribution pipeline just north of Sheppard Avenue in a north-south electric transmission corridor located between Pharmacy and Warden Avenues in the City of Toronto. The pipeline is approximately 6.5 kilometers (km) in length. Appendix A shows the constructed pipeline within a regional context.

### **3.0 Environmental Inspection**

In order to ensure that environmental commitments were honoured and that the best industry practices were used, a qualified environmental inspector was on-site for the duration of the pipeline construction activities.

In general, the duties of an Environmental Inspector consisted of the following items:

- provide advice to the Project Manager, Construction Inspector, and all construction personnel regarding compliance with environmental legislation, regulations and industry standards;
- provide advice regarding adherence to environmental specifications and commitments made in the previously mentioned documents and to regulatory agencies, including the OEB;
- provide advice on erosion protection measures to be taken in sensitive locations in vicinity of watercourse crossing;
- act as a liaison with environmental regulators, government agencies and interest groups;
- provide immediate advice regarding spill prevention and contingency; and,
- ensure appropriate waste disposal of any hazardous construction wastes.

### **4.0 Construction Effects and Mitigation Measures**

Construction effects and mitigation measures which were implemented to minimize the potential effects the construction of the Toronto Port Lands Reinforcement Project: North End are summarized in Table 1 (begins on next page). All activities were conducted in adherence to the contract documentation and Enbridge Construction Policies and Procedures.

**Table 1.**  
**Construction Effects and Mitigation Measures**

<b>Activity</b>	<b>Duration</b>	<b>Potential Effect</b>	<b>Mitigation Measures</b>
Vegetation Cover	Throughout Construction (January 2008–October 2008)	Permanent removal of vegetation. Aesthetic degradation. Changes in surface drainage patterns affecting amount of water available. Changes to sunlight or wind exposure regimes.	Specimen trees adjacent to and on the Hydro One Right-Of-Way (ROW) were identified prior to construction. Several trees were removed during construction. Tree Removal Permits were obtained from the City of Toronto prior to removal. Most trees were preserved by working outside the drip line and using directional drill. Manicured turf in the Wexford Soccer fields was restored by reseeding.
Topsoil Handling	Throughout Construction	Disruption of surface and subsurface soils. Soil mixing may result in loss of productivity.	Contractor stripped topsoil and stockpiled separately from subsoil. Mixing of soils was minimized. Segregated topsoil was replaced on surface during backfilling.
Watercourse Crossing	Throughout Construction (January 2008–October 2008)	Disruption of watercourse through siltation and sedimentation. Erosion of channel banks and loss of vegetation cover. Contamination of surface water. Interruption of subsurface drainage along pipeline trench.	Crossing of Massey Creek and tributaries to Tyler Creek were completed by directional drill. Watercourse crossing permit was obtained from the Toronto and Region Conservation Authority. Sediment fencing installed to prevent sedimentation and siltation.
Traffic Control	Throughout Construction	Exposure of construction crews to vehicular traffic.	Contractor to ensure Enbridge traffic control plan has been completed and has been set up in accordance with the prescribed Traffic Layout.
Road Crossings	Throughout Construction	Open cut roads inconvenience motorists and traffic flow. Restricted access to businesses and residences.	Three road crossings (Joy Drive, Brian Avenue and Clearfield Gate) were completed by open cut trenching. Crossings were conducted during times of low traffic volume to avoid congestion. Warning signs and barricades set up to increase visibility and prevent public access.
Noise	Throughout Construction	Disturbances to sensitive receptors (i.e. residents, seniors' homes, schools).	Construction equipment conformed to guidelines for sound and emission levels.

**Table 1.**  
**Construction Effects and Mitigation Measures**

<b>Activity</b>	<b>Duration</b>	<b>Potential Effect</b>	<b>Mitigation Measures</b>
Archaeological Monitoring	Throughout Construction	Disturbance and potential destruction of archaeological artifacts.	New Directions Archaeology and D.R. Poulton conducted Stage 1 and 2 Archaeological Assessments prior to construction to identify areas of high potential for artifacts.
Trenching and Excavation	Throughout Construction	Open trenches present a hazard to vehicular and pedestrian traffic. Restricts access. Sedimentation into storm sewers.	Protective barricades (i.e., snow fence, concrete barriers) were erected around trenches and excavations during construction activities. Permeable fabric barriers were installed beneath all storm sewer covers to minimize sediment infiltration.
Utility Crossings	Throughout Construction	Minimum distance separation from buried or above-ground services may not provide sufficient room within the Hydro ROW for the installation of a gas pipeline; damage to utilities may inconvenience landowners	In accordance with the Enbridge Policies and Procedures, locates were obtained prior to any excavation work. Warning signs posted in vicinity of overhead power lines. One (1) crossing of Canadian Pacific Railway was completed by directional drill.
Spills	Throughout Construction	Contamination of air, soil, surface water or ground water. Inconvenience to landowners and public	As required, contractor had spill containment kits at the project site.
Hydrostatic Testing	August 2008	Disruption of water supply to landowners or emergency services. Uncontrolled discharge of water could cause erosion, sedimentation and contamination of surface water supplies.	A permit to obtain water from a municipal fire hydrant; and discharge water to the sanitary sewer was obtained from the City of Toronto. No significant adverse environmental effects resulted from the hydrostatic testing and dewatering procedures.
Pipe Energizing	October 2008	Inconvenience and/or negative health effects to nearby landowners and the public.	Energizing was completed in accordance with Enbridge Policies and Procedures.

**Table 1.**

**Construction Effects and Mitigation Measures**

<b>Activity</b>	<b>Duration</b>	<b>Potential Effect</b>	<b>Mitigation Measures</b>
Clean-Up	Throughout Construction	Restores the pipeline easement to pre-construction conditions.	Clean up activities were conducted in accordance with the Enbridge Construction Manual. Restoration of the Hydro ROW north of Sheppard Avenue will be completed following additional work. Additional construction work is required in the vicinity of the Jonesville Station (end point) and restoration will be subsequently completed. Results of the clean-up program will be examined again in the spring of 2010.
Clean-Up	Throughout Construction	Restores the pipeline easement to pre-construction conditions.	Clean up activities were conducted in accordance with the Enbridge Construction Manual. Restoration of the Hydro ROW north of Sheppard Avenue will be completed following additional work. Additional construction work is required in the vicinity of the Jonesville Station (end point) and restoration will be subsequently completed. Results of the clean-up program will be examined again in the spring of 2010.

## 5.0 Residual Issues

Overall, construction activities were carried out with a high level of respect for the environment. Since portions of the pipeline ROW are located within the Hydro ROW, there may, in the future, be some degradation caused by littering that is not a result of construction.

There are three unresolved issues that remain at the time of completion of this report (April 2009) for the Toronto Portlands Reinforcement Project: North Section. These issues will need to be addressed prior to the final monitoring of the pipeline route.



## **5.1 Vegetation**

There were numerous specimen trees along the Hydro ROW adjacent to where the pipeline was installed. The majority of the ROW was open-trenched. The specimen trees were monitored but the level of health was indeterminate due to the season (i.e. early spring, no foliage). Enbridge will continue to periodically monitor these trees but it does not foresee future problems.

## **5.2 Revegetation**

Vegetation has re-established along the majority of the Hydro ROW and Wexford Soccer Fields where it was disturbed due to construction. However, the Hydro ROW north of Sheppard Avenue and east of the Enbridge Jonesville District Station are yet to be restored. These sections will require monitoring over the next year to identify the success of re-vegetation efforts and to identify areas that will require further efforts.

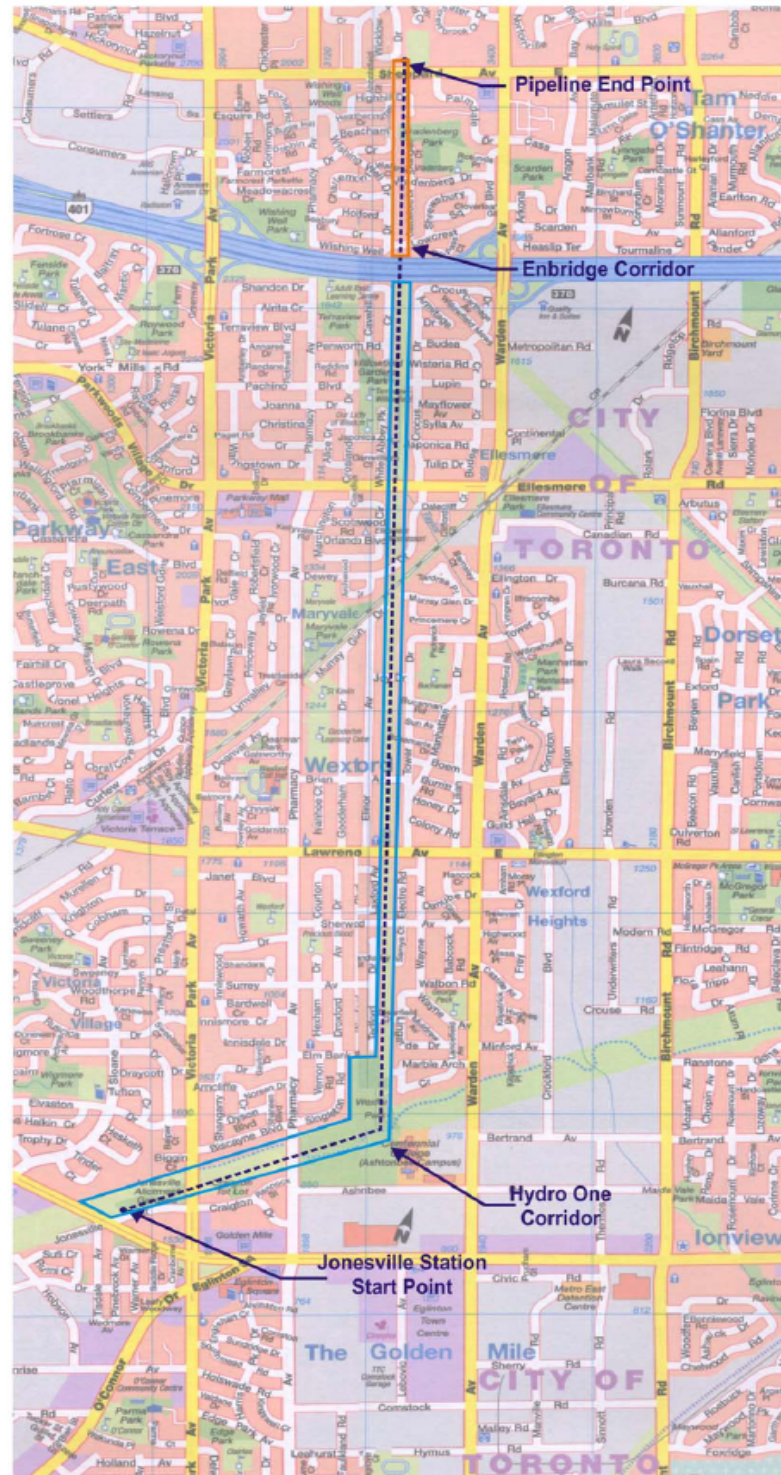
## **5.3 Sediment Fencing**

Sediment fencing installed to protect watercourses from sedimentation is in a poor state of disrepair. Fencing should be repaired to protect watercourses from possible sedimentation caused by major rain events. Fencing can be removed in the fall of 2009 (provided re-vegetation is complete).

## **6.0 Summary**

This Interim Post-Construction Environmental Monitoring Report has been prepared in accordance with the OEB Decision Docket No.EB-2006-0305. It documents construction and clean-up activities between the winter (2008) and fall (2008). Measures implemented during construction and clean-up have been successful. Three outstanding issues will be addressed in the Final Post-Construction Environmental Monitoring Report that will be prepared in the spring of 2010. This report will document continued remediation activities if needed, and address additional issues that may arise.

**APPENDIX A**  
**PIPELINE ROUTE MAP**



----- Preferred Route

		
<p align="center"><b>TORONTO PORT LANDS SYSTEM REINFORCEMENT PROJECT : NORTH END Preferred Route and Corridors</b></p>		
	<p align="center">Project Number <b>06-6338</b></p>	<p align="center">Figure <b>1</b></p>
<p><small>Note: The features on this map are for illustrative purposes only. Original source should be referenced for actual location and boundaries.</small></p>		

## **APPENDIX B**

### **PHOTO LOG**





Photo 1 – Looking north at Hydro ROW north of Sheppard Avenue (to be restored)



Photo 2 – Drainage swale south of Highway 401





Photo 3: Looking north, south of Highway 401



Photo 4: Looking south towards Lupin Drive and Willowfield Gardens





Photo 5 – Looking south along Massey Creek from Lupin Drive



Photo 6 – Looking north along Hydro ROW at Japonica Road





Photo 7 – Restored asphalt pathway at Japonica Road (looking east).



Photo 8 – Looking north along Hydro ROW from Brian Avenue





Photo 9 – Looking south at crossing of Brian Avenue



Photo 10 – Looking south towards Clearfield Gate





Photo 11 – Looking north from Clearfield Gate



Photo 12 – Looking south at crossing of Clearfield Gate





Photo 13 – Looking north at the Wexford Woodlot



Photo 14 – Looking southwest towards to Wexford Soccer Fields





Photo 15 – Looking north along Wexford Woodlot



Photo 16 –Tie-in point at Jonesville District Station (to be restored further)





Photo 17 –Tie-in point at Jonesville District Station (sediment fencing to be repaired)