



**Dow Moore, Corunna and
Seckerton Pipeline Project
Final Post Construction
Environmental Monitoring Report**

EB-2010-0302

Prepared for:
Enbridge Gas Distribution Inc.
500 Consumers Road
North York, ON M2J 1P8

Prepared by:
Stantec Consulting Ltd.
300-675 Cochrane Drive, West Tower
Markham, ON L3R 0B8

Project No. 160950597

June 27, 2013

**DOW MOORE, CORUNNA AND SECKERTON PIPELINE PROJECT
FINAL POST CONSTRUCTION ENVIRONMENTAL MONITORING REPORT**

Table of Contents

1.0	INTRODUCTION	1-1
1.1	Background	1-1
2.0	SCOPE OF THE FINAL MONITORING REPORT	2-1
3.0	PROJECT DESCRIPTION	3-1
4.0	MONITORING PROGRAMS	4-1
4.1	Environmental Inspection and Monitoring	4-1
4.2	Water Well Monitoring	4-1
5.0	FINAL RESTORATION	5-1
5.1	Outstanding Restoration Measures	5-1
5.1.1	Drainage Tile Repairs	5-1
5.1.2	Soil Management Sampling Program	5-3
5.1.3	Tree Replacement	5-3
5.2	Current Conditions of ROW	5-3
6.0	CONSTRUCTION EFFECTS AND MITIGATION MEASURES	6-1
6.1	Mitigation Measures	6-1
6.2	Public Inquiries and By-Law Non-Compliance Issues	6-8
6.3	Cumulative Effects Summary	6-11
6.4	Residual Issues	6-12
7.0	SUMMARY	7-1
8.0	CLOSURE	8-1

LIST OF TABLES

Table 1	Dow Moore, Corunna and Seckerton Associated Reporting	1-1
Table 2	Pipeline Segments	3-1
Table 3	Tile Drainage Repair	5-2
Table 4	Construction Effects and Mitigation Measures	6-2
Table 5	Residential Comments and Concerns	6-9

**DOW MOORE, CORUNNA AND SECKERTON PIPELINE PROJECT
FINAL POST CONSTRUCTION ENVIRONMENTAL MONITORING REPORT**

LIST OF APPENDICES

Appendix A	Map of Site Location	A-1
Appendix B	Photo Log	B-1

DOW MOORE, CORUNNA AND SECKERTON PIPELINE PROJECT FINAL POST CONSTRUCTION ENVIRONMENTAL MONITORING REPORT

Introduction

June 27, 2013

1.0 Introduction

1.1 BACKGROUND

In March 2011, the Ontario Energy Board (“OEB”) under docket number EB-2010-0302 granted Enbridge Gas Distribution Inc. (“EGDI”) Leave to construct three segments of Nominal Pipe Size (“NPS”) 20 (“inch”) diameter pipeline and one segment of NPS 16 pipeline in existing designated natural gas storage areas to enhance the connections between the Dow Moore, Corunna and Seckerton natural gas storage pools (“the Project”). The Board assigned the application file number EB-2010-0302. These pipelines are part of the ongoing expansion of the natural gas storage system in St. Clair Township, and are required to meet increasing demand for natural gas storage service in the area.

In support of the application, EGDI conducted various studies to identify potential impacts resulting from construction and prepare mitigation measures to minimize environmental and socio-economic impacts (see Table 1).

Table 1 Dow Moore, Corunna and Seckerton Associated Reporting

Report Title	Conducted by:	Date
Dow Moore, Corunna And Seckerton Pipeline Project Environmental Report	Stantec Consulting Ltd.	November 2010
Stage 1 Archaeological Assessment of the Proposed Dow Moore, Corunna and Seckerton Pipeline Project	D.R. Poulton & Associates Inc.	November 22, 2010
Addendum to the Environmental Report	Stantec Consulting Ltd.	December 17, 2010
Nexus Pipeline Project – Soybean Cyst Nematode Test Results and Mitigation Plan	Stantec Consulting Ltd.	April 13, 2011
Project Nexus Phase 1 Environmental Protection Plan - Rev 1	Stantec Consulting Ltd.	May 2, 2011
Stage 2-3 Archaeological Assessment of the Proposed Dow Moore, Corunna and Seckerton Pipeline Project, NEXUS Project, Lots 16-19, concessions 8, 9 and 10, Township of St. Clair, Lambton County, Ontario	D.R. Poulton & Associates Inc.	May 19, 2011
Memo - NEXUS Construction Clean-up Procedures	Stantec Consulting Ltd.	September 02, 2011

DOW MOORE, CORUNNA AND SECKERTON PIPELINE PROJECT FINAL POST CONSTRUCTION ENVIRONMENTAL MONITORING REPORT

Scope of the Final Monitoring Report
June 27, 2013

2.0 Scope of the Final Monitoring Report

Construction of this pipeline began on June 20, 2011 and was completed in October 2011. All four segments of the pipeline were commissioned and in operation by October 31, 2011.

This report has been prepared in accordance with OEB EB-2010-0302 Board's Conditions of Approval as described below:

- 1.1 EGD I shall construct the facilities and restore the land in accordance with its application and the evidence filed in EB-2010-0302 except as modified by this Order and these Conditions of Approval.*
- 3.1 Both during and after construction, EGD I 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. EGD I 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.*
- 3.3 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 will summarize the monitoring programs conducted in support of the Project; identify the success of mitigation measures and discuss any potential cumulative effects as a result of the Project. Specifically, this report has been compiled to address the requirements identified in Section 6.2.2 *Monitoring Reports* of the *Environmental Guidelines for the Location, Construction and Operation of Hydrocarbon Pipelines and Facilities in Ontario* (Ontario Energy Board, 2011) whenever possible.

DOW MOORE, CORUNNA AND SECKERTON PIPELINE PROJECT FINAL POST CONSTRUCTION ENVIRONMENTAL MONITORING REPORT

Project Description
June 27, 2013

3.0 Project Description

The Project comprises two pipelines and two small tie-in sections of pipe. These four segments are summarized in Table 2 and described in more detail below. A map of the segments is provided in Appendix A.

Table 2 Pipeline Segments

Segment	Size	Operating Pressure	Length of New Pipeline
Interconnect Pipeline	NPS 20	11 730 kPa (1700 psig)	1900 m
Seckerton Gathering Line	NPS 20	11 730 kPa (1700 psig)	1500 m
Seckerton Pool Line Station Tie-In	NPS 20	11 730 kPa (1700 psig)	50 m
Corunna Pool Line Station Tie-In	NPS 16	9 310 kPa (1350 psig)	50 m

The Interconnect pipeline is approximately 1900 metres (m) of NPS 20 steel pipeline with a maximum operating pressure of 11 730 kPa (1700 psig). It connects to the existing Dow Moore Pool Line via a new metering station ("Dow Moore Metering Station"), and then to two metering stations at the Seckerton and Corunna storage reservoir sites ("Seckerton Metering Station" and "Corunna Metering Station", respectively).

The Seckerton Gathering Line is approximately 1500 m of NPS 20 steel pipeline with a maximum operating pressure of 11 730 kPa (1700 psig). This pipeline connects to the gas wells in the Seckerton storage reservoir through new lateral connections, and ties-in to the Seckerton Metering Station.

The Seckerton Pool Line Station Tie-In pipeline is approximately 50 m of NPS 20 steel pipeline, with a maximum operating pressure of 11 730 kPa (1700 psig). This tie-in connects the existing NPS 20 steel Seckerton Pool Line to the Seckerton Metering Station.

The Corunna Pool Line Station Tie-In pipeline is approximately 50 m of NPS 16 steel pipeline with a maximum operating pressure of 9310 kPa (1350 psig). This tie-in connects the existing NPS 16 steel Corunna Pool Line to the Corunna Metering Station.

DOW MOORE, CORUNNA AND SECKERTON PIPELINE PROJECT FINAL POST CONSTRUCTION ENVIRONMENTAL MONITORING REPORT

Monitoring Programs

June 27, 2013

4.0 Monitoring Programs

4.1 ENVIRONMENTAL INSPECTION AND MONITORING

Full-time EGDI construction inspectors were onsite during construction to confirm environmental commitments were adhered to, the appropriate protection measures were implemented and that industry best practices were used. EGDI also contracted a private environmental inspector to assist in establishing an environmental inspection and monitoring program ensuring that environmental terms and conditions, and other commitments identified in approval documents were complied with during all phases of construction. The following were the environmental inspector's responsibilities during construction:

- 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 documents outlined in Table 1 and to all regulatory agencies including the OEB;
- provide advice on erosion protection requirements in sensitive locations/watercourse crossings, etc.;
- act as a liaison with environmental regulators, government agencies and special interest groups;
- provide immediate advice regarding spill prevention and contingency measures; and,
- ensure appropriate waste disposal of any hazardous construction waste.

The environmental inspector was present for full-time inspection during all construction activities.

4.2 WATER WELL MONITORING

A water well monitoring program was not conducted in support of the Project. There were determined to be five wells within 500 m of the pipelines with two of the water wells owned by EGDI. It was understood by Stantec that the residences are on municipal water sources and the average static level of the wells was approximately 9.8 m below the surface. Standard pipeline construction practices do not involve an excavation to 9.0 m; therefore, during construction and operation of the proposed pipelines, the water table was not expected to be breached and no impact to groundwater or household water supplies was anticipated during the construction or operation of the pipelines.

DOW MOORE, CORUNNA AND SECKERTON PIPELINE PROJECT FINAL POST CONSTRUCTION ENVIRONMENTAL MONITORING REPORT

Final Restoration
June 27, 2013

5.0 Final Restoration

5.1 OUTSTANDING RESTORATION MEASURES

As a result of landowner issues associated with the Project, drainage tile repairs scheduled to be completed in 2012, as indicated in the *Interim Post Construction Environmental Monitoring Report*, were postponed until 2013. The Soil Management Sampling Program was also unable to be completed in 2012.

EGDI is continuing to work with the St. Clair Region Conservation Authority ("SCRCA") to establish the appropriate planting locations and final compensation for the tree replacement program.

5.1.1 Drainage Tile Repairs

Potential impacts of the pipeline construction upon artificial drainage systems was minimized through avoidance during the route selection process by locating the pipelines along the edge of cultivated fields and along existing corridors or rights-of-way whenever possible. Additionally, prior to replacement of one section of the gathering pipeline, a main tile was installed on the upstream side of the pipeline and existing laterals were tied into it to maintain drainage of that section of land. However, some drainage tiles which were unable to be avoided during construction were impacted.

When existing drainage tiles were severed during trenching, the locations were recorded and flagged. A temporary repair was made to maintain field drainage and prevent flooding of the trench and adjacent lands whenever possible. Severed drainage tiles that were not immediately repaired, were capped during the installation of the pipelines to prevent the entry of soil, debris, or rodents, and avoid flooding of the trench line. Remaining severed drainage tiles were planned to be repaired immediately after construction was completed once a tile drain contractor could be secured to address any outstanding issues.

Due to the conditions at the conclusion of the installation of the pipelines and landowner issues, drainage tile repairs were delayed through 2011 and 2012 and subsequently repaired in June of 2013 and are designed to current standards to ensure that drainage of the property to pre-existing conditions is achieved. A drainage tile contractor was retained to assist EGDI and the landowner in developing an appropriate drainage tile restoration plan. See Table 3 for the drainage repairs which were scheduled to be completed in June, 2013.

**DOW MOORE, CORUNNA AND SECKERTON PIPELINE PROJECT
FINAL POST CONSTRUCTION ENVIRONMENTAL MONITORING REPORT**

Final Restoration

June 27, 2013

Table 3 Tile Drainage Repair

Number	Location	Drainage Tile Issue	Repair Requirements
1	Dow Moore Interconnect Pipeline	Installation of a NPS4 tile system along both sides of the ROW.	New drainage tile installed included a short section of drainage tile extending north over the Interconnect Pipeline, into a stone bed area (size and specifications were determined necessary by a qualified tile drain installer). Pre-existing drainage tile which was capped during 2011 construction was connected into the new NPS4 tile system.
2	Corunna Gathering Pipeline	Construction from the dig site resulted in damage to the drainage tile. The drainage tile was temporary repaired and installed; however, a permanent repair was required.	Header till was permanently repaired with a stone bed area installed across the laneway from the Corunna Meter Station. Note that this area is an easement for a Union Gas pipeline. All areas in the Union Gas or Hydro One easement, other than areas directly affected by 2011 construction must be conducted through Union Gas or Hydro One.
3	Corunna Gathering Pipeline	New tile has been installed on both sides of the pipeline to provide a maximum drainage spacing of 6.1 metres.	Completion of the last leg of drain tile on the east side of pipeline was installed in June, 2013 using industry standard design practices.
4	Laneway across from the Corunna Meter Stations	Tile was damaged to accommodate a bell hole for trenchless installation of the pipeline.	Tile repair will be completed using industry standard design practices.
5	Seckerton Gathering Pipeline between the gathering line and McClemens Drain on a property owned by Enbridge	Ripping operations damaged the clay tile.	Tile repair will be completed using industry standard design practices.
6	Seckerton Gathering Pipeline ROW	New agricultural drain tile is required on property owned by Enbridge.	Tile will be installed using industry standard design practices.

DOW MOORE, CORUNNA AND SECKERTON PIPELINE PROJECT FINAL POST CONSTRUCTION ENVIRONMENTAL MONITORING REPORT

Final Restoration
June 27, 2013

5.1.2 Soil Management Sampling Program

A bulk density soil sampling program on agricultural lands was a commitment to be completed as part of the *Interim Post Construction Environmental Monitoring Report*. However, because final drainage tile repair and restoration was deferred to 2013, the bulk density soil sampling program was also postponed to 2013. The sampling program will resume after all restoration measures have been completed including tile drainage installation. Sample locations will reflect the pre-construction sampling locations to allow ease of comparison to baseline data. A qualified soil specialist will conduct compaction testing of the subsoil, NPK (nitrogen, phosphorus, potassium) testing, and pH levels testing on and off the work area.

5.1.3 Tree Replacement

As taken from the *Lambton Official Plan* ("OP"), "*where it is unavoidable to remove forest cover, it will be replaced with twice the area of forest cover that is removed at a location specified by the landowner whose forest cover was removed and should that owner not have a suitable location, then the replacement would occur at a location specified by the County or local municipality*". For the Project, EGDl committed through the County of Lambton Reforestation Agreement (June 2, 2011), to replant on a 2:1 (replanted: removed) ratio for the tree removal in the woodlot.

A total of 71 trees were removed from the Seckerton Bush Lot; however, due to restrictions of woody vegetation establishment on the ROW, EGDl is conducting ongoing correspondence with the SCRCA to establish the planting program of the required replacement trees at an off-site location.

5.2 CURRENT CONDITIONS OF ROW

All activities were conducted in adherence to the contract documentation and EGDl construction Policies and Procedures including the EGDl *2010 Construction Manual*. As of the May 24, 2013 site assessment, overall the topsoil on the ROW appears to be in good condition with no clear indication of admixing of topsoil or significant colour changes from areas that were stripped compared to areas located off the ROW (Photos 5, 6, 9 and 10). There was also no indication that surface stoniness increased over undisturbed conditions located adjacent the ROW.

DOW MOORE, CORUNNA AND SECKERTON PIPELINE PROJECT FINAL POST CONSTRUCTION ENVIRONMENTAL MONITORING REPORT

Final Restoration

June 27, 2013

There were some crops planted in fall 2012 that appear to have potentially been affected (limited germination rates) within proximity to areas which were disturbed in 2011 or within the ROW compared to vegetation establishment at other areas adjacent the ROW. Crop establishment rates appear to be affected by potential water impoundment limiting germination rates as they appear correlated with micro-topographical low areas within the flat field (see Photo 4). These issues are assumed to be primarily a surficial drainage issue that should improve once repairs to drainage tiles have been executed and drainage can appropriately be maintained.

Vegetation re-establishment also appears limited within some of the non-cultivated fields on the ROW (see Photos 7 and 8). An additional seeding program is recommended to be considered with an appropriate seed mix to limit weed establishment on these disturbed areas.

**DOW MOORE, CORUNNA AND SECKERTON PIPELINE PROJECT
FINAL POST CONSTRUCTION ENVIRONMENTAL MONITORING REPORT**

Construction Effects and Mitigation Measures

June 27, 2013

6.0 Construction Effects and Mitigation Measures

6.1 MITIGATION MEASURES

Construction activities were carried out with a high level of respect for the environment and the residents located adjacent the ROW. Appropriate mitigation measures were implemented during all phases of the Project to minimize the potential effects of installing the pipeline. Good communication practices during construction related meetings between EGD staff, the Contractor, Environmental Inspector, landowners and agencies, and/or their representatives, was key to ensure full understanding of responsibilities to reduce the potential for overall significant adverse environmental effects.

All activities were conducted in adherence to the contract documentation and the EGD 2010 *Construction Manual*. Mitigation measures which were implemented to minimize the potential for effects from construction of the Project are summarized in Table 4.

**DOW MOORE, CORUNNA AND SECKERTON PIPELINE PROJECT
FINAL POST CONSTRUCTION ENVIRONMENTAL MONITORING REPORT**

Construction Effects and Mitigation Measures

June 27, 2013

Table 4 Construction Effects and Mitigation Measures

Activity	Potential Effect	Mitigation Measures	Effectiveness of Mitigation Measures and Residual Effects
Archaeological Monitoring	Disturbance and potential destruction of archaeological artifacts.	A Stage 3 assessment was conducted at one site with the site subsequently avoided by construction activities.	There was no disturbance or destruction of archaeological artifacts as a result of construction.
Vegetation Clearing	Permanent removal of vegetation Aesthetic degradation. Changes in surface drainage patterns affecting amount of water available. Changes to sunlight or wind exposure regimes.	The limits of the work area were marked to minimize encroachment into vegetated areas. Where possible, specimen trees and/or stands of trees were saved by narrowing-up the ROW and avoiding these specimens. Minimal tree removal was required. Tree removal was only required on Seckerton Farm. The majority of construction was completed within agricultural fields, on edge of woodlots, or in existing cleared rights-of-way. Replacement trees (seedlings) calculated on a 2 for 1 area basis was used to compensate for tree removals in the woodlot.	Tree replacement compensation negotiations ongoing with SCRCA, to be finalized in 2013.
Soil Management – Topsoil and Subsoil	Excessive passes on agricultural fields with heavy equipment can damage topsoil. Disruption of surface and subsurface soils may occur. Locally dominant clay soils can be susceptible to rutting and compaction which can reduce agricultural productivity. Soil mixing may also result in loss of productivity.	Contractor stripped the topsoil and stockpiled it separately from subsoil. Good separation (~ 1 m) of topsoil from subsoil was generally achieved and mixing of soils was minimized. Construction activities were suspended or altered during wet soil conditions. Segregated topsoil was replaced on surface following construction in limited areas. A harrowgator was used to alleviate compaction, break up lumps, and smooth the surface.	A post construction soil sampling program for nutrients and compaction to be completed in 2013.

**DOW MOORE, CORUNNA AND SECKERTON PIPELINE PROJECT
FINAL POST CONSTRUCTION ENVIRONMENTAL MONITORING REPORT**

Construction Effects and Mitigation Measures

June 27, 2013

Table 4 Construction Effects and Mitigation Measures

Activity	Potential Effect	Mitigation Measures	Effectiveness of Mitigation Measures and Residual Effects
Soil Management – Soybean Cyst Nematode Impacted Fields	Soybean Cyst Nematodes (SCN) are microscopic organisms that can impact soybean yields. They can be transported in topsoil that moves from one property to another.	Pre-construction soil sampling was conducted to identify fields infested with SCN. An SCN Mitigation Plan was developed, which dictated that no topsoil should be moved, by any means, from one field to another. Equipment and foot wear were thoroughly cleaned, pressure washed and inspected to ensure all topsoil was removed before leaving a SCN impacted field.	To date there has been no noted concerns or complaints from residents regarding the spreading of SCN outside fields previously affected.
Noise	Disturbances to sensitive receptors including residents, seniors' homes, and schools.	Construction equipment conformed to guidelines for sound and emission levels. Equipment and vehicles were equipped with mufflers and were maintained to ensure that they were in good repair.	Noise and dust disturbances were localized and were largely dissipated through mitigation. No noise concerns were identified by residents during the Project and no residual effects were noted.
Climate	Heavy rainfall may result in flooding of trench lines, adjacent lands, increase in water levels, erosion and compaction and rutting (if construction persists) High winds may erode loose soil material, including topsoil and create nuisance dust.	During wet soil conditions construction on agricultural lands were suspended. Work resumed only upon approval by Chief Inspector or Construction Project Manager. There were no identified rutting issues due to wet weather. Nuisance dust was controlled by applying water to the right-of-way and access routes as required. Tackifying topsoil windrows was not required as the heavy clay soils encountered were not susceptible to wind erosion.	Prior to restoration, a professional agronomist, (P.Ag.) verified appropriate conditions prior to topsoil replacement. There were no residual effects noted as a result of climatic conditions.

DOW MOORE, CORUNNA AND SECKERTON PIPELINE PROJECT
FINAL POST CONSTRUCTION ENVIRONMENTAL MONITORING REPORT

Construction Effects and Mitigation Measures

June 27, 2013

Table 4 Construction Effects and Mitigation Measures

Activity	Potential Effect	Mitigation Measures	Effectiveness of Mitigation Measures and Residual Effects
Municipal Drain Crossing	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.	Sediment fencing was installed where required to prevent sedimentation and siltation. Riparian buffer zones were respected and extra workspaces were allowed for adequate setbacks. Crossings were completed using trenchless methods and no disturbance occurred instream or to the riparian vegetation.	A drilling fluid release occurred into a municipal drain during trenchless crossing methods. The watercourse crossing was dry during drilling and all drilling fluid released was immediately cleaned-up with a vacuum truck. No residual impacts were anticipated to occur as a result of the drilling fluid release with no transfer of sediment noted.
Road Crossings	Open cut roads are an inconvenience to motorists and traffic flow. Restricted access to residences.	Rokeby Line, a Township road, was crossed by trenchless techniques. Warning signs and barricades were set up to increase visibility and prevent public access.	Trenchless methods were used for municipal road crossings which did not affect traffic.
Trenching and Excavation	Open trenches present a hazard to vehicular and pedestrian traffic Restricts access. Dewatering could lower local groundwater supplies.	Protective barricades including snow fence and concrete barriers were erected around trenches and excavations during construction activities.	There were no recorded incidents of personal harm and/or injury to either Project personnel or the public as a result of the open trenches. However, the Ontario Provincial Police was required to be on-site to resolve a landowner dispute and limit the exposure of the landowner to personnel harm as a result of the open trench.

**DOW MOORE, CORUNNA AND SECKERTON PIPELINE PROJECT
FINAL POST CONSTRUCTION ENVIRONMENTAL MONITORING REPORT**

Construction Effects and Mitigation Measures

June 27, 2013

Table 4 Construction Effects and Mitigation Measures

Activity	Potential Effect	Mitigation Measures	Effectiveness of Mitigation Measures and Residual Effects
Trenching and Excavation – Artificial Drainage (drainage tiles)	<p>Drainage tiles encountered during excavation of the trench could be severed.</p> <p>Temporary disruption of drainage and subsurface water flow could result in soil erosion or crop loss due to flooding.</p>	<p>Existing tile drains severed during trenching were recorded, flagged, and repaired as soon as possible.</p> <p>Tile drains that were not repaired in 2011 will be repaired during restoration work in 2013.</p>	<p>To date, some drainage tiles remain capped and not repaired within some of the fields where the pipeline was installed. Due to landowner concerns, repair and installation of new drainage tiles were still outstanding and there appears to potentially be some affected and stunted crops which may be a result of poor drainage within the fields. Currently, residual effects on row crops reside in some of the fields where the Project was installed and are likely to be ongoing until the damaged drainage tile is repaired and determined to be effective.</p>
Trenching and Excavation – Coal Tar Coating Removal	<p>Concerns with coal tar pipe coating related to asbestos, PCB's and hydrocarbons.</p>	<p>For this Project, lab analysis results revealed coal tar coating contained concentrations of > 50ppm of PCB's and no indication of asbestos. The coal tar pipe was treated as hazardous material containing PCB's.</p> <p>Removal was conducted as per the approved coal tar removal procedures and transported by EGD's waste management service provider Aevitus (under agreement with Newalta) to an approved Aevitas facility under their Ontario Ministry of Environment (MOE) Certificate of Approval (CofA).</p>	<p>Safe operating procedures for removal of the coal tar coating were developed to limit the exposure to Project personnel and the public. No potential exposure risks or incidents were recorded as a result of the removal of the coal tar coating.</p>

DOW MOORE, CORUNNA AND SECKERTON PIPELINE PROJECT
FINAL POST CONSTRUCTION ENVIRONMENTAL MONITORING REPORT

Construction Effects and Mitigation Measures

June 27, 2013

Table 4 Construction Effects and Mitigation Measures

Activity	Potential Effect	Mitigation Measures	Effectiveness of Mitigation Measures and Residual Effects
Trenching and Excavation – Utility Crossings	<p>Minimum distance separation from buried or above-ground services may not provide sufficient room within the ROW for the installation of a gas pipeline.</p> <p>Damage to utilities may inconvenience landowners.</p> <p>Where hydrovac trucks are involved in day-lighting, the waste material must be handled in an appropriate manner.</p>	<p>In accordance with the EGD Policies and Procedures, locates were obtained prior to any excavation work.</p> <p>Warning signs were posted in vicinity of overhead power lines.</p>	<p>There were no recorded incidents of impacts to Project equipment or personnel as a result of utility crossings in the Project.</p>
Spills	<p>Contamination of air, soil, surface water or ground water.</p> <p>Inconvenience to landowners and public.</p>	<p>A Spill Contingency Plan was prepared emphasizing prevention and preparedness and outlining safe practices.</p> <p>The Plan described equipment shut down and spill containment procedures, contaminated soils removal, bagging and temporary storage, and final disposal at an approved waste receiving facility.</p> <p>A 100m buffer zone was enforced where practical for mobile equipment for fueling and maintenance at all watercourses.</p>	<p>Five spills were recorded during construction with hydraulic oil as four of the five spills. The oil was soaked up with absorbent pads and any impacted soil was removed and disposed of off-site. No residual oil was left on-site after clean-up was completed.</p> <p>One spill of drilling mud into a dry drainage channel bed was recorded. The drilling mud was contained and immediately removed via vacuum truck.</p> <p>Reportable spills were communicated as required to appropriate regulatory agencies.</p>

**DOW MOORE, CORUNNA AND SECKERTON PIPELINE PROJECT
FINAL POST CONSTRUCTION ENVIRONMENTAL MONITORING REPORT**

Construction Effects and Mitigation Measures

June 27, 2013

Table 4 Construction Effects and Mitigation Measures

Activity	Potential Effect	Mitigation Measures	Effectiveness of Mitigation Measures and Residual Effects
Hydrostatic Testing	Disruption of water supply to landowners or emergency services. Uncontrolled discharge of water could cause erosion, sedimentation and contamination of surface water supplies.	Source water supply was potable chlorinated water provided by the St. Clair Public Works on Moore Line Road. Water was de-chlorinated prior to use.	Water was released under an approval to discharge into a local ditch. No evidence of adverse environmental impacts associated with these dewatering operations was noted.
Pipe Energizing	Inconvenience and/or negative health effects to nearby landowners and the public.	Energizing was completed in accordance with EGDl policies and procedures.	No evidence of adverse environmental impacts associated with energizing were noted.
Clean-Up	Rough clean-up activities include access removal, opening topsoil piles for drainage, erosion control measures, and general garbage removal. Final clean up includes subsoil preparation such as grading, compaction relief and leveling as well as topsoil replacement.	Clean-up activities were conducted in accordance with the EGDl <i>2010 Construction Manual</i> . Final clean-up was performed on the Corunna Pipeline segment and sections of the Interconnect Pipeline.	During October and November 2011, adverse weather conditions greatly impeded final cleanup activities. Some alterations to restoration as a result of landowner input were required.

DOW MOORE, CORUNNA AND SECKERTON PIPELINE PROJECT FINAL POST CONSTRUCTION ENVIRONMENTAL MONITORING REPORT

Construction Effects and Mitigation Measures

June 27, 2013

6.2 PUBLIC INQUIRIES AND BY-LAW NON-COMPLIANCE ISSUES

During the installation of the pipeline there were no recorded by-law non-compliance issues associated construction, energization or restoration Project.

EGDI provided residents and businesses along the route with a construction communication procedure prior to installation and made every reasonable effort to address any concerns expressed by residents in an expeditious and courteous manner and maintain good landowner relations both during and post construction. All comments were immediately investigated and followed up with by an EGDI representative or a third-party firm representing EGDI. Currently, two of the six public concerns remain outstanding (see Table 5) with follow-up work scheduled for 2014 to address these concerns.

One landowner interaction was moderated by a call to the Ontario Provincial Police due to safety concerns on the part of EGDI personnel.

**DOW MOORE, CORUNNA AND SECKERTON PIPELINE PROJECT
FINAL POST CONSTRUCTION ENVIRONMENTAL MONITORING REPORT**

Construction Effects and Mitigation Measures

June 27, 2013

Table 5 Residential Comments and Concerns

Number	Date	Resident Concern	Actions Taken in Response	Reasons Underlying Actions	Status
1	June 2011	Soil cultivation for archeological study performed during wet conditions.	Provided compensation to landowner for wet soil conditions and additional land impact causing reduced crop yields.	Additional land impact causing reduced crop yields compensated.	Complete
2	June 2011	Landowners compensated for actual crop loss is not fair if those with no crop loss are compensated for the same amount as if they had a crop.	Compensated crop owner fair market value of wheat loss in addition to 10 year crop loss. Landowners indicated they would accept the wheat compensation and a 10 year crop loss as fair compensation for the Project.	Negotiation with landowners who accepted the wheat compensation and 10 year crop loss as fair for impacts from the Project.	Complete
3	June 2011	Landowner expressed concerns to remove pipeline coating.	EGDI pro-actively developed and deployed safe operating procedures.	Proactively addressed concerns for safety of Project personnel and the environment.	Complete
4	Fall 2011	Restoration to be completed under wet soil conditions.	EGDI consulted a professional agronomist who confirmed that restoration was reasonable for the land conditions. EDGI continued with restoration based on assessment from agronomist.	Soil conditions were confirmed to be adequate to proceed with restoration.	Complete

DOW MOORE, CORUNNA AND SECKERTON PIPELINE PROJECT
FINAL POST CONSTRUCTION ENVIRONMENTAL MONITORING REPORT

Construction Effects and Mitigation Measures

June 27, 2013

Table 5 Residential Comments and Concerns

Number	Date	Resident Concern	Actions Taken in Response	Reasons Underlying Actions	Status
5	2011-2013	Tiles not repaired as of May 1, 2013	Tile design was completed in spring of 2012 but implementation was delayed as a result of weather and landowner issues. In June, 2013, the tile design was implemented. During that time 2 low areas where water was ponding were identified. Enbridge ran additional tile into one of these areas while performing the tile design work. With regard to the second area, Enbridge met with the landowner and tenant farmer and reached an agreement where in the summer of 2013 Enbridge would install "drainage stone beds" over existing tiles in that area and would install topsoil in both areas after the 2014 wheat harvest	Drainage tile repair and design requirements were completed in consultation with the landowner to address concerns.	Outstanding, subject to completion in 2014 as per agreement with landowner/tenant farmer
6	Spring 2013	Land profile has ponded areas and not as pre-disturbance conditions.	EGDI met with landowner and representatives to discuss concerns. It does not appear that a post construction profile survey is possible in a manner to positively show alterations to the land profile. Once that fact was established, the parties agreed to resolve the drainage concerns as set out in concern #5 (above).	Ongoing negotiations to determine best approach to resolve ponding concerns on the land.	Outstanding, subject to be completion after 2014 wheat harvest.

DOW MOORE, CORUNNA AND SECKERTON PIPELINE PROJECT FINAL POST CONSTRUCTION ENVIRONMENTAL MONITORING REPORT

Construction Effects and Mitigation Measures

June 27, 2013

6.3 CUMULATIVE EFFECTS SUMMARY

The potential for cumulative effects from construction and operation of the Project were assessed in the Environmental Report ("ER"). The study area boundary was used to assess the potential for additive and interactive effects from the pipelines. By determining the location of the facilities in consultation with the affected landowners and implementing site-specific mitigation measures, the overall potential for cumulative effects was considered to be of low significance.

The primary method used to mitigate against cumulative effects was to identify constraints within the study area and avoid them where possible. Where avoidance was not feasible, effects of constructing were further reduced by implementing specific construction methodologies as well as timing construction at certain segments of the pipeline while proactively reclaiming disturbed areas as soon as possible under the appropriate conditions.

In order to minimize the impact on agricultural fields, agricultural infrastructure and disruptions to cropping patterns, the preferred routes were located within or adjacent to existing corridors, adjacent to field edges and/or away from existing infrastructure on agricultural lands. Included in the original consideration for the footprint of the Project was ensuring that land disrupted through the construction process was minimized. Once installation of each segment was completed, each site was immediately re-graded, subsoil was decompacted, sediment and/or erosion control measures implemented as needed and topsoil was replaced under the appropriate conditions to maintain topsoil quality. Restoration was on-going, progressive and generally effective which limited the effects from the Project upon the environment. Only one additional mitigation measure to those outlined in the ER was required during the installation of the pipeline and restoration which included a landowner specifically requesting an alternative measure to de-compact the subsoil. Provided that the drainage tiles are repaired appropriately to promote greater crop establishment and growth and that the bulk density soil sampling program determines subsoil compaction to be similar to pre-existing conditions, mitigation measures appear to be successful in managing potential effects as a direct result of the Project.

The majority of the effects associated with the installation of the pipeline and interaction with the construction of other projects were predicted to have no cumulative significance by 2016 when crop yields are anticipated to reach 90% of pre-development conditions. Under this consideration, EGD compensated landowners for 10 years of crop loss. Provided that drainage tile can be restored to be effective in allowing establishment of crops on the ROW and adjacent areas, the conclusions of the ER currently appear reasonable.

DOW MOORE, CORUNNA AND SECKERTON PIPELINE PROJECT FINAL POST CONSTRUCTION ENVIRONMENTAL MONITORING REPORT

Construction Effects and Mitigation Measures

June 27, 2013

6.4 RESIDUAL ISSUES

Overall, construction activities were carried out with a high level of respect for the environment and residents. However, due to adverse conditions encountered during fall 2011 and subsequent landowner concerns, some of the final clean-up activities along the pipeline ROWs were postponed to June, 2013 and summer, 2014. The following unresolved issues remain at the time of completion of this report:

- Soil management sampling program;
- Tree seedlings planting compensation arranged with the SCRCA; and,
- Completion of the drainage tile repairs.

A photo log documenting site conditions on May 24, 2013 is presented in Appendix B.

DOW MOORE, CORUNNA AND SECKERTON PIPELINE PROJECT FINAL POST CONSTRUCTION ENVIRONMENTAL MONITORING REPORT

Summary

June 27, 2013

7.0 Summary

This Final Post Construction Environmental Monitoring Report has been prepared in accordance with the OEB Decision for EB-2010-0302. In general, measures that were implemented during construction and clean-up have been successful with some outstanding final construction requirements which were scheduled to resume in June, 2013 and be completed by summer, 2014.

Monitoring, contingency planning and appropriate environmental protection measures were important components to reduce the overall potential for residual and cumulative effects of the Project ensuring mitigation measures were effective in both the short and long term. During the installation of the pipeline, appropriate planning and avoidance of sensitive features, development of mitigation strategies and promptly addressing concerns raised by residents, limited the overall effects from the Project.

Provided that drainage can be appropriately restored at the site, no significant residual or cumulative effects on the environmental and/or socio-economic features were anticipated as a result of the Project. In summary, with the implementation of the proposed mitigation measures, enactment of appropriate contingency plans and drainage tile to the fields is repaired correctly, the recommendations and predictions from the ER appear consistent with what was experienced during construction.

DOW MOORE, CORUNNA AND SECKERTON PIPELINE PROJECT FINAL POST CONSTRUCTION ENVIRONMENTAL MONITORING REPORT

Closure

June 27, 2013

8.0 Closure

This Report has been prepared by Stantec Consulting Ltd. for the sole benefit of EGDI, and may not be used by any third party without the express written consent of EGDI. Any use which a third party makes of this Report is the responsibility of such third party.

The data presented in this Report are in accordance with our understanding of the Project as it was presented at the time of our Report. In the event that changes or alterations are made to the Project, we reserve the right to review our data with respect to any such changes.

We trust this Report meets your current requirements. Please do not hesitate to contact us should you have additional questions about any facet of this Project. Please do not hesitate to contact the undersigned if you have any questions or require further information.

Respectfully Submitted,



Chris Revak, B.Sc.
Environmental Scientist
Tel: (705) 750-8873
Chris.Revak@stantec.com



Rooly Georgopoulos

Signed on behalf of:

Al Leggett, MCIP, RPP
Senior Reviewer
Tel: (905) 415-6384
Al.Leggett@stantec.com

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**DOW MOORE, CORUNNA AND SECKERTON PIPELINE PROJECT
FINAL POST CONSTRUCTION ENVIRONMENTAL MONITORING REPORT**

Appendix A Map of Site Location

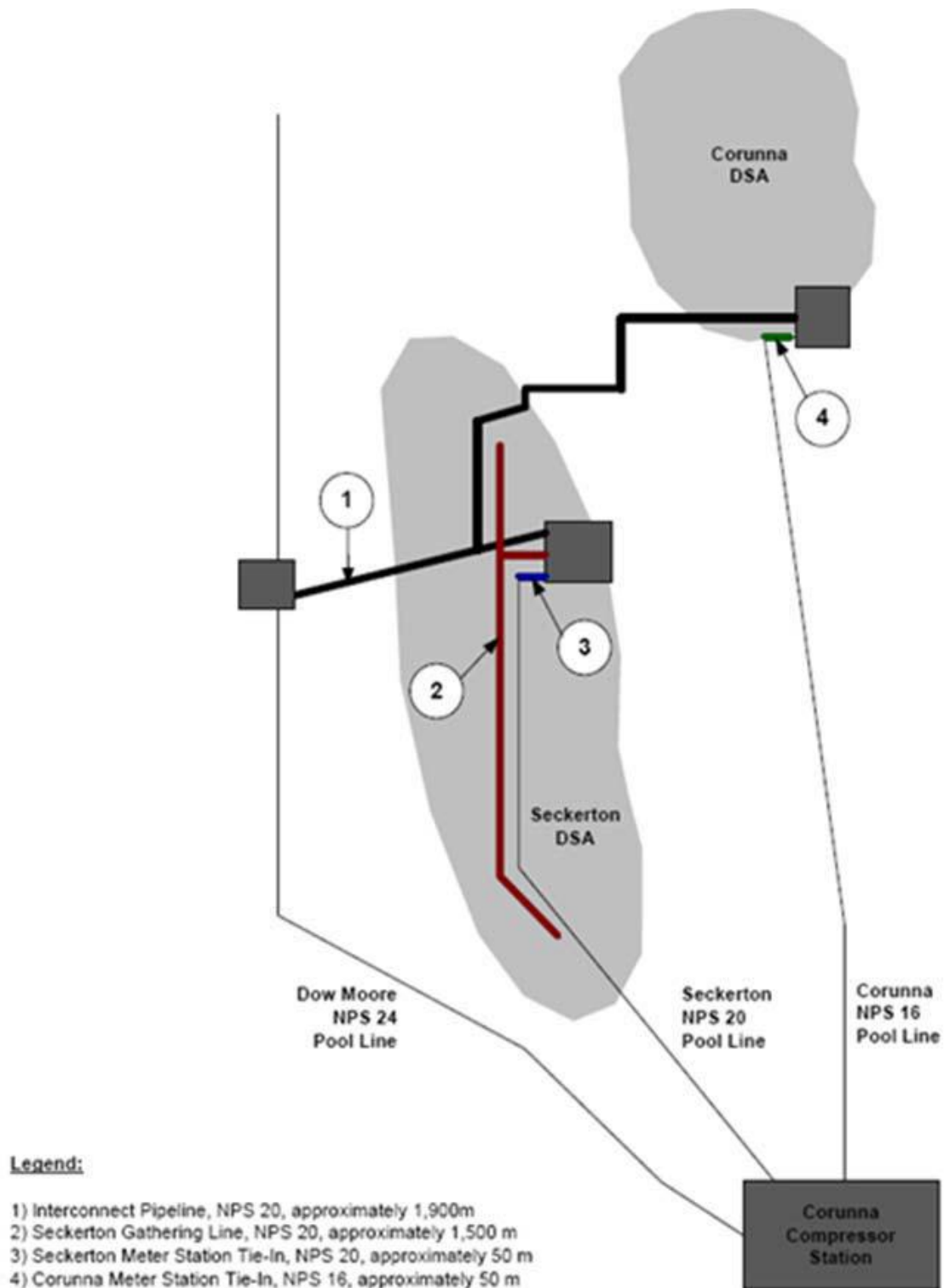
June 27, 2013

Appendix A Map of Site Location

DOW MOORE, CORUNNA AND SECKERTON PIPELINE PROJECT FINAL POST CONSTRUCTION ENVIRONMENTAL MONITORING REPORT

Appendix A Map of Site Location

June 27, 2013



Map of Site Location - Dow Moore, Corunna and Seckerton Pipeline Project (EDGI, 2011)

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**DOW MOORE, CORUNNA AND SECKERTON PIPELINE PROJECT
FINAL POST CONSTRUCTION ENVIRONMENTAL MONITORING REPORT**

Appendix B Photo Log

June 27, 2013

Appendix B Photo Log

**DOW MOORE, CORUNNA AND SECKERTON PIPELINE PROJECT
FINAL POST CONSTRUCTION ENVIRONMENTAL MONITORING REPORT**

Appendix B Photo Log

June 27, 2013



Photo 1 **Crop establishment affected on a previously disturbed area on the southern portion of the Seckerton Gathering Line (May 24, 2013).**

**DOW MOORE, CORUNNA AND SECKERTON PIPELINE PROJECT
FINAL POST CONSTRUCTION ENVIRONMENTAL MONITORING REPORT**

Appendix B Photo Log

June 27, 2013



Photo 2 Crop establishment affected on a previously disturbed area on the southern portion of the Seckerton Gathering Line (May 24, 2013).

DOW MOORE, CORUNNA AND SECKERTON PIPELINE PROJECT FINAL POST CONSTRUCTION ENVIRONMENTAL MONITORING REPORT

Appendix B Photo Log

June 27, 2013



Photo 3 Bare area with limited crop establishment on the south end of the Seckerton Gathering Line assumed to be a result of water impoundment (May 24, 2013).

**DOW MOORE, CORUNNA AND SECKERTON PIPELINE PROJECT
FINAL POST CONSTRUCTION ENVIRONMENTAL MONITORING REPORT**

Appendix B Photo Log

June 27, 2013



Photo 4 **Bare area with limited crop establishment on the Seckerton Gathering Line directly north of Rokeby Line (May 24, 2013).**

**DOW MOORE, CORUNNA AND SECKERTON PIPELINE PROJECT
FINAL POST CONSTRUCTION ENVIRONMENTAL MONITORING REPORT**

Appendix B Photo Log

June 27, 2013



Photo 5 Recently cultivated topsoil near the north end of the Seckerton Gathering Line (May 24, 2013).

**DOW MOORE, CORUNNA AND SECKERTON PIPELINE PROJECT
FINAL POST CONSTRUCTION ENVIRONMENTAL MONITORING REPORT**

Appendix B Photo Log

June 27, 2013



Photo 6 Recently cultivated topsoil along the Interconnect Pipeline directly south of the Dow Moore Metering Station (May 24, 2013).

**DOW MOORE, CORUNNA AND SECKERTON PIPELINE PROJECT
FINAL POST CONSTRUCTION ENVIRONMENTAL MONITORING REPORT**

Appendix B Photo Log

June 27, 2013



Photo 7 **Current vegetation conditions in a non-cultivated natural area on the ROW at the Seckerton Meter Station Tie-in (May 24, 2013).**

**DOW MOORE, CORUNNA AND SECKERTON PIPELINE PROJECT
FINAL POST CONSTRUCTION ENVIRONMENTAL MONITORING REPORT**

Appendix B Photo Log

June 27, 2013



Photo 8 Vegetation establishment within the ROW bi-secting the woodlot on the Interconnect Pipeline, north of the Seckerton Meter Station (May 24, 2013).

**DOW MOORE, CORUNNA AND SECKERTON PIPELINE PROJECT
FINAL POST CONSTRUCTION ENVIRONMENTAL MONITORING REPORT**

Appendix B Photo Log

June 27, 2013



Photo 9 Recently cultivated topsoil on the Interconnect Pipeline ROW adjacent the existing access road (May 24, 2013).

**DOW MOORE, CORUNNA AND SECKERTON PIPELINE PROJECT
FINAL POST CONSTRUCTION ENVIRONMENTAL MONITORING REPORT**

Appendix B Photo Log

June 27, 2013



Photo 10 Recently cultivated topsoil on the Interconnect Pipeline ROW west of the Corunna Tie-in (May 24, 2013).