

Penn Energy- Roseplain SOLAR ENERGY FACILITY

in the Town of Uxbridge Regional Municipality of Durham FIT Application No. FIT-F7TMB91 FIT Contract No. F-001557- SPV-130-505

Natural Heritage Assessment Water Bodies Records Review DRAFT

Prepared for:	Penn Energy Renewables Ltd. 620 Righters Ferry Road, Bala Cynwyd, PA 19004
Submitted by:	Niblett Environmental Associates Inc. PN 10-066
	October 2012



Niblett Environmental Associates Inc.

Biological Consultants

October 3, 2012

PN 10-066

Penn Energy Trust 620 Righters Ferry Road Bala Cynwyd, PA 19004

Attention : Mr. Glen Tomkinson

RE: Penn Energy- Roseplain SOLAR ENERGY FACILITY in the Town of Uxbridge, Regional Municipality of Durham FIT Application No. FIT-F7TMB91 FIT Contract No. F-001557- SPV-130-505

Natural Heritage Assessment Waterbodies- Record Review-Draft

Dear Mr. Tomkinson:

We are pleased to submit the draft Waterbodies Assessment-Record Review report the proposed Roseplain solar energy facility as part of the Natural Heritage Assessment for this project.

The report follows the outline provided in the MNR Natural Heritage Assessment Manual.

If there are any comments or questions on the content please contact us.

Yours very truly,

P. Celj

Chris Ellingwood President and Sr. Terrestrial and Wetland Biologist

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NATURAL HERITAGE ASSESSMENT WATERBODIES- RECORD REVIEW-DRAFT

1.0 Introduction

Penn Energy Renewables, Ltd. (Penn) has executed a FIT contract with the Ontario Power Authority (OPA) for the construction of a 7.5 MW, ground-mounted, Class 3 solar energy facility located southwest of the populated centre of the Town of Uxbridge, within Regional Municipality of Durham, Ontario. The subject lands are located in part of Lot 22 Concession 3, in the Town of Uxbridge.

The proposed Renewable Energy Generation Facility (REGF) would consist of a collection of solar photovoltaic (PV) modules (each approximately 1.00 m x 1.67 m or 1.00 m x 2.00 m in dimension) that are grouped into arrays tilted and facing south. These stationary arrays are strung together forming a series of rows oriented east to west. The Environmental Protection Act (EPA) administered by the Ministry of the Environment (MOE) regulates Renewable Energy Approvals (REAs) under Part V.0.1 of the Act, pursuant to Ontario Regulation 359/09. The REA regulation requires that applicable renewable energy projects complete a Natural Heritage Assessment (NHA), which identifies natural features and provincial parks and conservation reserves near the proposed Project Location. Subsection 30 (1) of the REA Regulation requires proponents of Class 3 solar projects to undertake a Water Body Records Review to identify whether the project is:

- i) In a water body
- ii) Within 120 m of the average annual high water mark of a lake, other than a lake trout lake that is at or above development capacity
- iii) Within 300m of the average annual high water mark of a lake trout lake that is at or above development capacity
- iv) Within 120m of the average annual high water mark of a permanent or intermittent stream, or
- v) Within 120m or a seepage area" (O. Reg. 359/09, s. 30. Table).

Subsection 30 (2) of the REA regulation requires the proponent to prepare a report "setting out a summary of the records searched and the results of the analysis" (0. Reg. 359/09). This Water Body Records Review Report has been prepared to meet these requirements.



2.0 Results

Records that were reviewed and assessed can be found in the following sections. The purpose of this section is to determine whether any water body features exist on or adjacent to the project location. The definition of a water body is stated in Section 1 (1) of the REA regulation:

"a water body includes a lake, a permanent stream, an intermittent stream and a seepage area but does not include,

- A) Grassed waterways,
- *B)* Temporary channels for surface drainage, such as furrows or shallow channels that can be tilled and driven through,
- C) Rock chutes and spillways,
- D) Roadside ditches that do not contain a permanent or intermittent stream,
- E) Temporarily ponded areas that are normally farmed,
- F) Dugout ponds, or
- G) Artificial bodies of water intended for the storage, treatment or recirculation of runoff from farm animal yards, manure storage facilities and sites and outdoor confinement areas."

Records of water body features were searched for within 1 km of the project location boundary. Several agencies were consulted via internet and verbal communication. Records were sought from Ministry of Natural Resources, Ministry of the Environment, Ontario Ministry of Agriculture, Food and Rural Affairs, Federal Government, The Regional Municipality of Durham and Lake Simcoe Region Conservation Authority. The results will be discussed in the following section.

No planning boards, local roads boards or local services boards contain jurisdiction of the Project study area.

2.1 Ministry of Natural Resources Records

The following online sources were reviewed from the Ontario Ministry of Natural Resources:

• Ontario Base Maps (OBM) and natural feature layers from Land Information Ontario (LIO)

The OBM mapping identified no water body features within 1 km of the Project Location.

2.2 Ministry of Environment

An information request was sent to the Ministry of Environment for water body features within a minimum distance of 1 km from the project location via email dated April 13, 2012 and August 24th, 2012. In addition, several attempts were made via telephone between April and August of 2012.

NEA was unsuccessful in contacting the Ministry of Environment therefore no new information was acquired from this agency.

2.3 Ontario Ministry of Agriculture, Food and Rural Affairs Records

The following online source was reviewed from the Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA):

• Rural Drainage Mapping (<u>http://www.lio.ontario.ca/imf-ows/imf.jsp?site=ads_en</u>)

The OMAFRA mapping identified no water body features (same as LIO) within 1 km of the project location.

2.4 Federal Government Records

The following federal government websites were reviewed to determine if any records regarding water body features on or adjacent to the Project Location were available:

- Natural Resource Canada (NRCAN), National Topographic System (NTS) topographic maps (http://atlas.nrcan.gc.ca/site/english/maps/topo/map)
- DFO Aquatic Species at Risk Distribution Mapping available from Conservation Ontario website (<u>http://www.conservation-ontario.on.ca/projects/DFO.html</u>)
- Fisheries and Oceans Canada (DFO) website (<u>http://www.dfo-mpo.gc.ca/regions/central/habitat/os-eo/index-eng.htm</u>)

Natural Resource Canada mapping and the DFO Aquatic Species at Risk Distribution mapping found no water body features identified within a 1 km radius of the project location.

In addition, the DFO website offered no available information on any water bodies adjacent to the project location.

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2.5 Conservation Authority Records

Information was acquired on the Lake Simcoe Region Conservation Authorities (LSRCA) website located at <u>http://www.lsmaps.ca/Geocortex/Essentials/External/Web/RegsViewer.aspx?Site=RegulationLimit</u>. Regulated areas which included lakes and watercourses were located via desktop applications.

An email request for information pertaining to water body features within 1 km of the project area was sent to LSRCA on April 11th, 2012.

The regulation mapping on the LSRCA website showed no water body features within 1 km of the project location boundary.

In addition to reviewing online mapping from the LSRCA, an information request was sent to LSRCA to confirm by way of mapping. A response was received on April 13th, 2012. A map was sent by LSRCA indicating there were no water body features within 1 km of the project location boundary.

2.6 Municipal Records

Information on the Uxbridge Township and the Regional Municipality of Durham was reviewed online to determine if any water body features existed within a 1km radius around the project location.

Regional Municipality of Durham

Schedule A (Regional Structure) of the Official Plan of the Regional Municipality of Durham also did not identify any water body features within a 1 km radius of the site.

Other Contacts

The project location is not located in an area which contains a Local Services Board, Planning Authority or Local Roads Board and therefore was not contacted as part of the completion of this process. The project area was also not located in the Niagara Escarpment Plan therefore the Commission was not contacted in this process.

No lakes were identified within the 1 km area surrounding the project location therefore MNR was not contacted to determine Lake Trout Lakes as this was not applicable to this project.

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3.0 Results Summary

Table 3.1 outlines the results of the Records Review in regards to the water body features. A map of the identified water body features that are located within 1km of the project location is provided in Figure 1.

Table 1.	Records Review Summary of water body features within 1km of the Project
Location	I.

Determinations	YES/NO	Description
Is the project location in a	No	No water bodies were
water body?		identified on or within 120m
		of the project location
Is the project location within	No	No lakes were identified on or
120m of the average annual		within 120m of the project
high water mark of a lake, other		location.
than a lake trout lake that is at		
or above development		
capacity?		
Is the project location within	No	No lake trout lakes were
300m of the average annual		identified within 300m of the
high water mark of a lake trout		project location
lake that is at or above		
development capacity?		
Is the project location within	No	No streams were identified
120m of the average annual		within 120m of the project
high water mark of a		location
permanent or intermittent		
stream?		
Is the project location within	No	No seepage areas were
120m of a seepage area?		identified on or within 120m
		of the project location

A site investigation is required as the next step to ground truth any identified features through the Records Review and to verify if any additional water body features exist on and/or within 120m of the project location.

A site investigation report is required as part of Section 31 of the REA Regulation. In the completion of this report NEA will:

- i) Confirm the water body features identified during the Records Review
- ii) Identify corrections to be made from information in this report
- iii) Confirm whether any water body features are found within the project area

Niblett Environmental Associates

- iv) Confirm the boundaries of any water body feature identified within 120m of the project area, and
- v) Measure the distance from the project area to any identified water body feature (average annual high water mark)

4.0 References

Government of Ontario. 2009. Ontario Regulation 359/09 made under the Environmental Protection Act 2007, Renewable Energy Approvals under Part V.0.1 of the Act. September 8, 2009 version. Printed in the Ontario Gazette: October 10, 2009. Available on-line at <u>Http://www.e-</u> laws gove on ca/htym/source/regs/english/2009/elaws_src_regs_r09359)e.htm

laws.gove.on.ca/htym/source/regs/english/2009/elaws src regs r09359)e.htm

Lake Simcoe Region Conservation Authority. 2009. (LSRCA) Regulation of Development, Interference with Wetlands and Alterations to Shorelines and Watercourses. Sheet No. 42. Available on-line at: <u>http://www.lsmaps.ca/Geocortex/Essentials/External/Web/RegsViewer.aspx?Site</u>

Ministry of Natural Resources. 2008. (MNR) Land Information Ontario. Natural Feature Layers. Available on-line at:

=RegulationLimit. Accessed April 13, 2012.

http://www.mnr.gov.on.ca/en/Business/LIO/index.html. Accessed April 10, 2012.

- Ministry of Natural Resources. 2008. Land Information Ontario. Agriculture Information Atlas. Available on-line at: http://www.lio.ontario.ca/imf-ows/imf.jsp?site=aia_en. Accessed April 10 2012
- Natural Resources Canada. 2010. Topographic Maps. Atlas of Canada. Available on-line at: <u>http://atlas.nrcan.gc.ca/site/english/maps/topo/map.</u> Accessed April 10 2012
- Official Plan of the Regional Municipality of Durham. 2008. Schedule A Regional Structure. Available on-line at: http://www.durham.ca/departments/planed/planning/op_documents/dr_official_ plan_2008/ConsMapsA1toA5.pdf. Accessed April 12 2012

APPENDIX I

INFORMATION FROM LAKE SIMCOE REGION CONSERVATION AUTHORITY



Lake Simcoe Region Conservation Authority



Proud Winner of the 2009 International Thiess Riverprize

Uxbridge PIR IMS No.: RPIC263RI

September 20, 2011

Ms. Ali Giroux Niblett Environmental Assessments 55 Mary Street West, Suite 112 Lindsay, ON K9V 5Z6

Dear Ms. Giroux

RE: Property Information Request 5240 Concession Road 4 Lot 22, Concession 3 Township of Uxbridge, Region of Durham

Thank you for conferring with the Lake Simcoe Region Conservation Authority (LSRCA) with regard to the above noted property information request. It is our understanding that the purpose of the above inquiry relates to the proposed 6,500 kW Solar PV Renewable Energy Generation Facility at 5240 Concession Road 4 in the Township of Uxbridge. The purpose of this letter is to outline the environmental features located on this property as they relate to the *Conservation Authorities Act* and *Ontario Regulation 179/06*.

Based upon a review of our current regulation mapping, the property appears to be located entirely outside of the Approved Regulation Limit of this Authority. On this basis, permits from LSRCA for the proposed development are not required at this time. However it should be noted that the property located entirely within the Oak Ridges Moraine (ORM). Under the ORM Plan, the key heritage features identified on the property include:

- High Aquifer Vulnerability Level 1;
- Landform Conservation Area 1; and
- Significant Woodlands.

The property has also been identified as being part of the Pefferlaw Infiltration Area, an Environmentally Significant Area (ESA). Additionally, the Township of Uxbridge should also be contacted with regards to the proposed project.

Page 1 of 2

120 Bayview Parkway Box 282, Newmarket, Ontario L3Y 4X1 Tel: 905.895.1281 1.800.465.0437 Fax: 905.853.5881 E-Mail: info@lsrca.on.ca Website: www.lsrca.on.ca

A Watershed for Life



Lake Simcoe Region Conservation Authority

Page 2 of 2

For any addition information and/or questions that you may have, please do not hesitate to contact me at extension 266, or by e-mail at j.hayward@lsrca.on.ca.

Yours truly,

Jennifer Hayward Environmental Planner - CSR

JH _

S:\Env Plan\Regs Appls\Reg PIR Letters\Uxbridge\2010\RPIC263R1_Giroux_5240Con4_Sept12_JH.docx









Meters



Penn Energy- Roseplain SOLAR ENERGY FACILITY

in the Town of Uxbridge Regional Municipality of Durham FIT Application No. FIT-F7TMB91 FIT Contract No. F-001557- SPV-130-505

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We are pleased to submit the draft Waterbodies Assessment-Site Investigation report the proposed Roseplain solar energy facility as part of the Natural Heritage Assessment for this project.

The report follows the outline provided in the MNR Natural Heritage Assessment Manual.

If there are any comments or questions on the content please contact us.

Yours very truly,

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Chris Ellingwood President and Sr. Terrestrial and Wetland Biologist

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Appendix I: Site Investigation Field Notes

NATURAL HERITAGE ASSESSMENT WATER BODIES SITE INVESTIGATION-DRAFT

1.0 Introduction

Penn Energy Renewables, Ltd. (Penn) has executed a FIT contract with the Ontario Power Authority (OPA) for the construction of a 7.5 MW, ground-mounted, Class 3 solar energy facility located southwest of the populated center of the Town of Uxbridge, within Regional Municipality of Durham, Ontario. The subject lands are located in part of Lot 22 Concession 3, in the Town of Uxbridge (Figure 1).

The proposed Renewable Energy Generation Facility (REGF) would consist of a collection of solar photovoltaic (PV) modules (each approximately 1.00 m x 1.67 m or 1.00 m x 2.00 m in dimension) that are grouped into arrays tilted and facing south. These stationary arrays are strung together forming a series of rows oriented east to west. The Environmental Protection Act (EPA) administered by the Ministry of the Environment (MOE) regulates Renewable Energy Approvals (REAs) under Part V.0.1 of the act, pursuant to Ontario Regulation 359/09. The REA regulation requires that applicable renewable energy projects complete a Natural Heritage Assessment (NHA), which identifies natural features and provincial parks and conservation reserves near the proposed Project Location. Subsection 30 (1) of the REA Regulation requires proponents of Class 3 solar projects to undertake a Water Body Records Review to identify whether the project is:

- i) In a water body
- ii) Within 120 m of the average annual high water mark of a lake, other than a lake trout lake that is at or above development capacity
- iii) Within 300 m of the average annual high water mark of a lake trout lake that is at or above development capacity
- iv) Within 120 m of the average annual high water mark of a permanent or intermittent stream, or
- v) Within 120 m or a seepage area" (O. Reg. 359/09, s. 30. Table).

Subsection 30 (2) of the REA regulation requires the proponent to prepare a report "setting out a summary of the records searched and the results of the analysis" (0. Reg. 359/09). This Water Body Records Review Report has been prepared to meet these requirements.

1



2.0 Methodology and Results

Records that were reviewed and assessed can be found in the following sections. This purpose of this section is to determine whether any water body features exist on or adjacent to the project location. The definition of a water body is stated in Section 1 (1) of the REA regulation:

"a water body includes a lake, a permanent stream, an intermittent stream and a seepage area but does not include,

- A) Grassed waterways,
- B) Temporary channels for surface drainage, such as furrows or shallow channels that can be tilled and driven through,
- C) Rock chutes and spillways,
- D) Roadside ditches that do not contain a permanent or intermittent stream,
- E) Temporarily ponded areas that are normally farmed,
- F) Dugout ponds, or
- G) Artificial bodies of water intended for the storage, treatment or recirculation of runoff from farm animal yards, manure storage facilities and sites and outdoor confinement areas."

As amended by 0. Reg 521/10, subsection 31 (1) of the REA regulation requires an investigation of the land and water within 120 meters of the project location, either by physically visiting the site or by an alternative investigation of the site, in order to determine the following:

- A) Whether the results of the analysis summarized in the Water Body Records Review Report (NEA, 2012) prepared under subsection 30 (2) are correct or require correction, and identifying any required corrections;
- B) Whether any additional water bodies exist, other than those that were identified in the Water Body Records Review Report (NEA, 2012) prepared under subsection 30 (2);
- C) The boundaries, located within 120 m of the Project Location, of any water body that was identified in the Water Body Records Review Report (NEA, 2012) or the site investigation; and
- D) The distance from the project location to the boundaries determined under clause(c)

Subsection 31 (2) of the REA regulation outlines specific requirements for lake trout lakes present within 300 m of the project location. These requirements were not applicable to

this project as no lakes were identified within the Water Body Records Review (NEA, 2012).

As amended by O. Reg 521/10, subsection 31 (4) of the REA regulation requires the proponent to prepare a report setting out the following:

- 1) A summary of the determinations made as a result of conducting the site investigation, and any corrections require to the Water Body Records Review Report (NEA, 2012).
- 2) Information relating to each water body identified in the Water Body Records Review Report (NEA, 2012) and in the site investigation, including the type of water body, plant and animal composition and the ecosystem of the land and water investigated.
- 3) A map showing
 - i) Boundaries mentioned in clause 31(1)
 - ii) The location and type of each water body identified in relation to the project location, and
 - iii) All distances mentioned in clause 31(1)
- 4) A summary of methods used to make observations for the purposes of the site investigation.
- 5) The name and qualifications of any person conducting the site investigation.
- 6) If an investigation was conducted by visiting the site:
 - i) The dates and times of the beginning and completion of the site investigation
 - ii) The duration of the site investigation
 - iii) The weather conditions during the site investigation
 - iv) Field notes kept by the person conducting the site investigation
- 7) If an alternative investigation of the site was conducted:
 - i) The dates of the generation of the data used in the site investigation
 - ii) An explanation of why the person who conducted the alternative investigation determined that it was not reasonable to conduct the site investigation by visiting the site.

A physical site visit was conducted on April 17th, 2012. The alternative site investigation approach was therefore not used and clause 7 of subsection 31 (4) does not apply to this project.

2.1 Lake Simcoe Region Conservation Authority

Ontario Regulation 179/06- Development, Interference with Wetlands and Alterations to Shorelines and Watercourses requires permits to be obtained from the LSRCA in cases where development, alteration or construction is proposed in hazard lands, floodplains, watercourses or wetlands.

Except where permitted under O. Reg 179/06, development is prohibited:

a) Adjacent or close to the shoreline of the Great Lake-St Lawrence River System or to inland lakes that may be affected by flooding, erosion or dynamic beaches, including the area from the furthest offshore extent of the Authority's boundary to the furthest landward extent of the aggregate of the following distances:

> i) the 100 year flood level, plus the appropriate allowance for wave uprush as calculated by the equations provided in the document entitled "Shoreline Flood Elevation Study, Lake Simcoe, Lake Couchiching", April 1981, which is available at or through the Authority at its head office located at 120 Bayview Parkway, Newmarket, Ontario, L3Y 4X1,

> *ii) the predicted long term stable slope projected from the existing stable toe of the slope or from the predicted location of the toe of the slope as that location may have shifted as a result of shoreline erosion over a 100 year period, and*

- *iii)* where a dynamic beach is associated with the waterfront lands, an allowance in metres inland, determined by the authority, to accommodate dynamic beach movement.
- b) River or stream valleys that have depressional features associated with a river or stream, whether or not they contain a watercourse, the limits of which are determined in accordance with the following rules:
 - *i)* Where the river or stream valley is apparent and has stable slopes, the valley extends from the stable top of bank, plus 15 meters, to a similar point on the opposite side,
 - *ii)* Where the river or stream valley is apparent and has unstable slopes, the valley extends from the predicted long term stable slope projected from the existing stable slope or, if the toe of the slope is unstable, from the predicted location of the toe of the slope as a result of stream erosion over a projected 100-year period, plus 15 meters, to a similar point on the opposite side,

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- *iii)* Where the river or stream valley is not apparent, the valley extends the greater of,
 - A) The distance from a point outside the edge of the maximum extend of the flood plain under the applicable flood event standard, plus 15 meters, to a similar point on the opposite side, and
 - B) The distance from the predicted meander belt of a watercourse, expanded as a required to convey the flood flows under the applicable flood event standard, plus 15 meters, to a similar point on the opposite side;
- c) Hazardous lands;
- d) Wetlands; or
- e) Other areas where development could interfere with the hydrologic function of a wetland, including areas within 120 meters of all provincially significant wetlands, and areas within 30 meters of all other wetlands, but not including those where development has been approved pursuant to an application made under the Planning Act or other public planning or regulatory process.

In addition to the above Lake Simcoe Region Conservation Authority has a level III agreement with the Department of Fisheries and Oceans Canada (DFO). This signed agreement with Fisheries and Oceans Canada and Lake Simcoe Region Conservation Authority deals with the management and protection of fish habitat, there are three levels of agreement. Level III, the highest obtained, determined by Fisheries and Oceans Canada (2005) includes the following:

- The local Conservation Authority conducts the initial review of the project to identify any impacts to fish and fish habitat. If there are potential impacts to fish and fish habitat, the project is forwarded to the local DFO office for further review.
- The Conservation Authority determines how the proponent can mitigate any potential impacts to fish and fish habitat. If impacts to fish and fish habitat can be mitigated, then the Conservation Authority issues a letter of advice. If impacts to fish and fish habitat cannot be fully mitigated, the project is forwarded to the local DFO office for further review.
- The Conservation Authority works with the proponent and DFO to prepare a fish habitat compensation plan. The project is then forwarded to the local DFO office for authorization under the Fisheries Act.

6

3.0 Summary of Records Review Results

Table 1 below outlines the findings based on the Records Review (NEA, 2012).

Table 1.	Records Review Summary of water	body features within 1km of the Project
Location	1.	

Questions to be asked	YES/NO	Description
Is the project location in a	No	No water bodies were
water body?		identified on or within 120m
		of the project location
Is the project location within	No	No lakes were identified on or
120 m of the average annual		within 120m of the project
high water mark of a lake,		location.
other than a lake trout lake		
that is at or above		
development capacity?		
Is the project location within	No	No lake trout lakes were
300m of the average annual		identified within 300m of the
high water mark of a lake trout		project location
lake that is at or above		
development capacity?		
Is the project location within	No	No streams were identified
120m of the average annual		within 120m of the project
high water mark of a		location.
permanent or intermittent		
stream?		
Is the project location within	No	No seepage areas were
120m of a seepage area?		identified on or within 120m
		of the project location

As a result of the Records Review (NEA, 2012) it was found that the project location is not found within 120m any water body features. A site investigation is required in order to field verify the findings from the Records Review. In addition, the site visit will also determine whether there are other water body features within the 120m of the Project Location that were not identified in the Records Review.

4.0 Site Investigation Details

A site investigation was conducted on April 17th, 2012. One site investigation was conducted on the project location and the adjacent area to ground truth the water body features found in the Records Review. The site investigation was carried out in accordance with section 31 of the REA regulations.

Table 2. Field Inv	estigation Details
--------------------	--------------------

Date:	April 17 th , 2012
Start Time:	1:30pm
Completion Time:	2:30pm
Duration:	1 hour
Weather Conditions:	Partially Cloudy with
	moderate wind

Field notes can be found in Appendix I.

4.1 Qualifications of Investigators

The site investigation was conducted by Chris Ellingwood, President and Sr. Terrestrial and wetland biologist and Katherine Ryan, Terrestrial and Wetland Biologist.

Chris Ellingwood has over 15 years of experience in the consulting business. Currently the President and Senior Terrestrial and Wetland Biologist at Niblett Environmental Associates, Mr. Ellingwood has conducted over 900 environmental impact studies and biophysical projects. He is a certified wetland evaluator and is trained in the Southern Ontario Ecological Land Classification (ELC). His specialties include botany, bird identification, wetlands, the Oak Ridges Moraine (ORM), federal and provincial environmental assessments and species at risk.

With a background in Environmental Science (BSc) and Ecosystem Management (Diploma) Katherine worked at Otonabee Region Conservation Authority as a Water Resource Technician. Katherine specifically conducted assessments on stream velocity and water quality. Ms. Ryan has worked as a terrestrial and wetland biologist for NEA for almost two years. At NEA, working on projects all over Ontario Katherine conducts site assessments including wetland delineation, biological inventories (birds, amphibians, terrestrial and wetland plants etc.) and environmental monitoring.

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4.2 Site investigation Methodology

Information from the Records Review (NEA, 2012) was used to locate potential water body features, as identified by the literature reviewed. Features identified on or within 120 meters from the Project Location were located. Physical site investigations ground truthed the water body features. The entire project area was searched, in addition to lands within 120 meters from the project location boundary that were located on the property or visible by road. Photographs were taken to confirm the presence or absence of water body features.

Locations were documented and marked using a handheld Global Positioning System (GPS) device. The plant and animal composition as well as the ecosystem of the land and water investigated was also documented. The type of water body found was documented (lake, permanent watercourse, intermittent watercourse, seep).

5.0 Results of the Site Investigation

The records review identified one water body feature (stream) identified south east of the project location boundary. Site investigations identified no water body features within the 120 meter area surrounding the project location boundary.

5.1 Site Description

The project location is in the Pefferlaw Brook sub-watershed. The landscape is made up of agricultural fields, wetland and wooded areas. The project location is bound by Concession Road 4 to the east and is surrounded by private farming properties with a quarry to the north. Agricultural fields made up most of the subject property. The site was generally flat in nature with an upward slope to the north, small rolling hills occurred to the south of the property.

No water body features existed within the 1 km radius containing the project location. In addition, no water body features existed within 120 m of the project location, as confirmed in the site investigation.

5.2 Water Body Features

Water body features as identified in subsection 1 (1) of the REA regulation, includes " a lake, a permanent stream, an intermittent stream and a seepage area" (0. Reg. 359/09) (Section 1.3). The site investigation was conducted to confirm the presence or absence of water body features identified and to identify any new features that may exist within the

120 meters surrounding the project location. The results of the field investigation can be found below.

5.2.1 <u>Permanent Streams</u>

A permanent stream can be defined within subsection 1(1) of the REA regulation as " a stream that continually flows in an average year" (0. Reg. 359/09).

The site investigation confirmed the absence of any permanent stream within the 120 meters surrounding the project location.

5.2.2 Intermittent Streams

An intermittent stream can be defined in subsection 1(1) of the REA regulation as a "natural or artificial channel, other than a dam, that carries water intermittently and does not have established vegetation within the bed of the channel, except vegetation dominated by plant communities that require or prefer the continuous presence of water or continuously saturated soil for their survival" (O. Reg 359/09).

The Records Review results were confirmed in the field investigation. There were no intermittent streams identified within 120 m of the project location.

5.2.3 <u>Lakes</u>

Kettle lakes are defined as "a depression formed by glacial action and permanently filled with water", a lake trout lake can be defined as "a lake that has been designated by the Ministry of Natural Resources for lake trout management, as set out in records maintained by and available from the Ministry" (O. Reg. 359/09).

The Records Review (NEA, 2012) identified no lakes within 120 m of the project location. The results from the Records Review were confirmed in the field. No lakes as found under the definitions above were located within 120 m from the project location.

5.2.4 Seepage Areas

Subsection 1(1) of the REA regulation identified seepage areas as "a site of emergence of ground water where the water table is present at the ground surface, including as spring" (O. Reg. 359/09).

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The Records Review (NEA, 2012) identified no seepage areas within the 120 m surrounding the project location. This was confirmed in the site investigation. No seepage areas were identified during the site investigation found within 120 m of the project location.

5.2.5 Other Water Features

No other water features were identified within 120m of the project location.

6.0 Conclusions

Table 3. Summary of Site Investigation Results

Results to required determinations and any Corrections to the Records Review Report (NEA, 2012)			
Is the project location in a water body	No	No corrections are required to the Water Body Records Review Report (NEA, 2012). The site investigation	
		confirmed the project location was not in a water body.	
Is the project location within 120 m of the average annual high water mark of a lake, other than a lake trout lake that is at or above development capacity	No	No corrections are required to the Water Body Records Review Report (NEA, 2012). The site investigation confirmed the project location was not within 120 m of the average annual high water mark of a lake, other than a lake trout lake that is at or above development capacity.	
Is the project location within 300 m of the average annual high water make of a lake trout lake that is at or above development capacity	No	No corrections are required to the Water Body Records Review Report (NEA, 2012). The site investigation confirmed the project location was not within 300 m of the average annual high water mark of a lake trout lake that is at or above development.	

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Is the project location within	No	No corrections are required to the Water Body Records
high water mark of a permanent or intermittent stream		Review Report (NEA, 2012). The site investigation confirmed the project location
		was not within 120 m of the average annual high water mark of a permanent or intermittent stream.
Is the project location within 120 m of a seepage area	No	No corrections are required to the Water Body Records Review Report (NEA, 2012). The site investigation confirmed the project location was not within 120 m of a seepage area.

The Site Investigation Report confirmed that no water body features were found on or within 120m of the project location. As a result a Water Bodies Report is not required.

7.0 References

- Fisheries and Oceans Canada. 2007. Definition of Levels of Agreement with Conservation Authorities in Ontario. Available on-line at: <u>http://www.dfo-</u> <u>mpo.gc.ca/regions/central/pub/municipal-class-niveaux-minicipaux-on/section8-</u> <u>eng.htm</u>.
- Government of Ontario. 2006. Ontario Regulation 179/06 made under the Conservation Authorities Act 1990. Available online at <u>http://www.e-</u> <u>laws.gov.on.ca/html/source/regs/english/2006/elaws_src_regs_r06179_e.htm</u>. Accessed April 15, 2012.
- Government of Ontario. 2009. Ontario Regulation 359/09 made under the Environmental Protection Act 2007, Renewable Energy Approvals under Part V.0.1 of the Act. September 8, 2009 version. Printed in the Ontario Gazette: October 10, 2009. Available on-line at <u>Http://www.e-</u> <u>laws.gove.on.ca/htym/source/regs/english/2009/elaws src regs r09359)e.htm</u>
- Government of Ontario. 2010. Ontario Regulation 521/10 made under the Environmental Protection Act, Renewable Energy Approvals under Part V.01 of the Act. December 15, 2010 version. Printed in the Ontario Gazette: January 8, 2011. Available on-line at: <u>http://www.e-</u> haws gov on so (html /source (rogs (anglish /2010 (alaus, srg rogs r10521 o htm

<u>laws.gov.on.ca/html/source/regs/english/2010/elaws_src_regs_r10521_e.htm</u>. Accessed April 15, 2012

Niblett Environmental Associates. 2012. Water bodies Records Review Report- Prepared for Penn Energy Renewables Ltd. Bala Cynwyd, PA.

APPENDIX I

Site Investigation Field Notes

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