

RENEWABLE ENERGY APPROVAL DOCUMENTS

RE Ingersoll 1 Solar Project
Executive Summary

September 2, 2011

RECURRENT
ENERGY



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RE Ingersoll 1 Project Site



Butterfly spotted near Gould Drain

Disclaimer

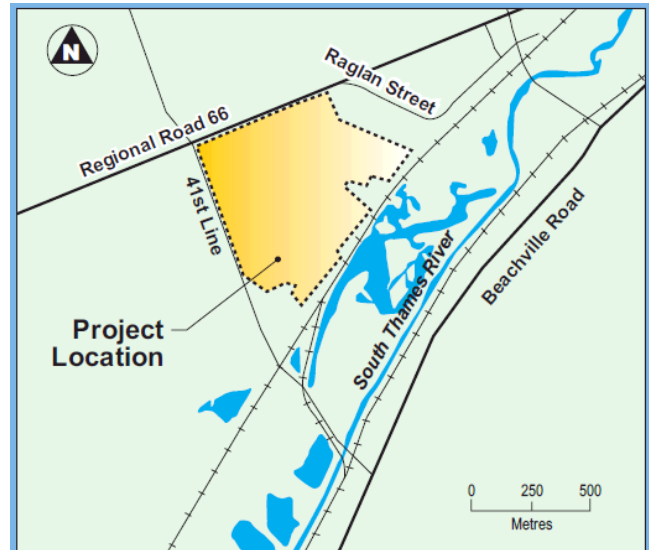
This report has been prepared by or on behalf of RE Ingersoll 1 ULC for submission to the Ontario Ministry of the Environment as part of the Renewable Energy Approval process. The content of this report is not intended for the use of, nor is it intended to be relied upon by, any other person. Neither RE Ingersoll 1 ULC nor any of its directors, officers, employees, agents or consultants has any liability whatsoever for any loss, damage or injury suffered by any third party arising out of, or in connection with, their use of this report.

Section 1: Project Introduction

1.1: Project Location

RE Ingersoll 1 ULC is proposing to develop a 9.5-megawatt (MW) solar photovoltaic (Solar PV) facility, on an approximately 40-hectare (ha) parcel of land. This proposed facility is referred to as “RE Ingersoll 1” and is also referred to as the “Project.”

RE Ingersoll 1 is located in the Township of South-west Oxford and the Township of Zorra, within the County of Oxford, approximately 6 km northeast of the City of Ingersoll and next to the Town of Beachville.



Project Property

1.2: Project Proponent

The RE Ingersoll 1 Project is being proposed by **RE Ingersoll 1 ULC**, a Nova Scotia Unlimited Liability Company owned by Recurrent Energy, LLC through its subsidiaries. Recurrent Energy is an independent power producer and a leading developer of distributed solar projects for utilities, government, and commercial customers.

The company develops, builds, and operates distributed solar power systems – typically 2 to 20 MW each – connected to the existing distribution grid. Its vision is to use proven solar technology to meet rising energy demand with a fleet of clean power plants located right where they are needed most.

RE Ingersoll 1 ULC has retained Hatch Ltd. to coordinate the completion of the Renewable Energy Approval (REA) process. All comments or questions in relation to the REA documents provided herein should be directed to Hatch, at the contact information provided below.



Examples of Comparable Solar Arrays

Contact Information	
<p>Primary Contact</p> <p>Sean Male, M.Sc. Environmental Coordinator Hatch Ltd. 4342 Queen Street, Suite 500 Niagara Falls, ON, Canada L2E 7J7 Tel: 905-374-0701 ext. 5280 Email: smale@hatch.ca</p>	
<p>Project Contact</p> <p>RE Ingersoll 1 ULC c/o Recurrent Energy 300 California Street, 8th Floor San Francisco, CA 94104 Tel: 415-675-1500 Fax: 415-675-1501 www.ontariosolarfuture.ca</p>	<p>Secondary Contact</p> <p>David Brochu RE Ingersoll 1 ULC 300 California Street, 8th Floor San Francisco, CA 94104 Tel: 630-333-7602 Email: david.brochu@recurrentenergy.com</p>

1.3: Project Description

The Project will consist of solar photovoltaic panels that generate direct current (DC) electricity when exposed to sunlight. The panels will be stationary, arranged in rows mounted off the ground and tilted to the south to catch the sun’s rays. Electricity generated by the rows of panels is collected through underground cabling by inverters which convert the DC electricity to alternating current (AC). The AC current then continues from the inverters through underground cabling to a single main facility substation. At this substation, a transformer increases the voltage to the level of voltage of the electricity distribution grid. The Project will provide electricity to the grid by interconnecting with the existing distribution line on 41st Line immediately west of the Project site. Other Project components include a small parking area, control house and internal access road network. The proposed site plan layout is provided in Figure 1.

Construction of the Project is scheduled to commence in August 2012, subject to receipt of the REA and any other permits or approvals that may be required. Construction will last for approximately 6-10 months, with the earliest possible commissioning of the facility scheduled for March 2013. The commercial operation date and associated construction schedules proposed herein are currently estimates based on a number of variables. The start of construction and operations dates for the project may be significantly changed, either accelerated or delayed, due to changes in expected timeframes for regulatory approval, equipment procurement, and/or project scheduling optimization.

The commercial operation date and associated construction schedules proposed herein are currently estimates based on a number of variables. The start of construction and operations dates for the project may be significantly changed, either accelerated or delayed, due to changes in expected timeframes for regulatory approval, equipment procurement, and/or project scheduling optimization.

Commissioning is the process of assuring that all systems and components of the Project are installed, tested, and operating safely and according to its operational requirements. The main construction activities will include site preparation (road and parking area construction, minor vegetation removal and grading), installation of facilities (racking structures, solar panels, underground cabling, inverters and substation components), testing and commissioning and site restoration.

The facility is expected to operate for 30 years prior to decommissioning. Upon decommission the site, all Project components will be removed and the site will be restored to its previous agricultural use.

1.4: Project Benefits

The proposed Project will result in a number of social and environmental benefits, both at a local level and throughout the Province of Ontario.

Social Benefits

Operation of the Project will result in production of approximately 12.7 million kWh of electricity per year, enough to power approximately 1300 average homes. Construction and operation of the Project will result in the creation of jobs for the people of Ontario throughout the life of the Project – from initial development, design and manufacture, to construction and ongoing maintenance. At least 60% of the materials for the Project will be made or sourced from Ontario. This will help contribute to the Province’s goal of creating 50,000 jobs in the green energy industry. The Project will also result in benefits for the local landowner of the Project.

Environmental Benefits

Solar PV is among the safest and cleanest sources of energy generation. It uses using only the sun, a completely renewable energy source, as its fuel, with no harmful pollutants emitted due to electricity generation. The Project will help Ontario to meet its goal of increasing the amount of energy generated from green renewable sources in the Province. This will assist in helping the Province phase out heavily polluting, non-renewable coal generation by 2014, therefore greatly reducing emissions associated with power generation. Further, operation of the facility will result in minimal waste generation and very limited use of raw materials (e.g., minimal water requirements for cleaning purposes), limiting the long-term environmental impacts associated with power generation.

Benefits to Ontario

The Project will help Ontario to meet its goal of doubling the amount of energy generated from renewable sources by 2025.

This will allow the Province to phase out existing coal generating facilities by 2014, which will substantially reduce air emissions due to power generation activities.

The RE Ingersoll 1 Project will assist the Province in meeting these important goals.

1.5: Renewable Energy Approval Process

The environmental approval for renewable energy projects is called the **Renewable Energy Approval (REA)**. It is regulated by the Ministry of the Environment (MOE) and the Ministry of Natural Resources (MNR). To obtain a Renewable Energy Approval, the Project is subject to the requirements of Ontario Regulation (O. Reg.) 359/09 – *Renewable Energy Approvals Under Part V.0.1 of the Act*, (herein referred to as the REA Regulation) created under the *Environmental Protection Act*. The REA Regulation identifies a process to engage and receive feedback from the public, Aboriginal communities, municipal and regulatory agencies. As part of the REA Regulation, RE Ingersoll 1 ULC is required to prepare a number of documents to describe the Project and identify potential adverse effects. Any adverse effects will be prevented or minimized through mitigation measures and monitoring commitments. These documents are required to be made available for public, Aboriginal, municipal and agency review and comment prior to submission of the REA Application to the MOE. The documents that are included in this package for review include:

- Project Description Report
- Construction Plan Report
- Design and Operations Report
- Decommissioning Plan Report
- Natural Heritage Records Review, Site Investigation, Evaluation of Significance and Environmental Impact Study (EIS) Reports
- Water Body Records Review, Site Investigation and EIS Reports
- Stage 1 & 2 Archaeological Assessment Reports
- Noise Assessment Study

The Natural Heritage and Water Body Reports identified several environmental features within 120 m of the Project site including a number of drains flowing into the South Thames River, two significant woodlands, significant animal movement corridors and significant valleylands. Mitigation measures have been specified to prevent and/or minimize adverse effects on these features due to construction, operation and eventual decommissioning of the facility. A letter from the Ontario Ministry of Natural Resources confirming that the Natural Heritage Assessment satisfies the REA Regulation criteria is provided in Appendix 9.

Stage 1 & 2 Archaeological Assessments were conducted on the Project site to assess the potential for presence of archaeological features that could be disturbed due to construction. These assessments identified the potential presence of a small, but potentially significant Aboriginal camp site, located outside of the area proposed for panel installation. A Stage 3 Archaeological Assessment will be undertaken to further assess the size and significance

Benefits to Ontario

Power 1,300 homes with clean, sustainable energy.

60% of materials made or sourced from Ontario.

Contribute to the goal of creating 50,000 jobs in the Province's renewable energy industry through the Feed-In Tariff program.

of this feature and any mitigation requirements. The proposed site layout has avoided the location of this feature to prevent adverse effects. A letter from the Ministry of Tourism and Culture confirming that the Stage 1 and 2 Archaeological Assessment is acceptable is provided in Appendix 14.

A Heritage Checklist was completed to determine if a heritage resource was located on the property. The results indicated that a heritage resource was not located on the property and therefore a heritage assessment was not required. For further information relating to protected properties and heritage resources please refer to Appendix 15.

A noise study was undertaken to assess noise emissions from the inverters and transformer. The solar panels themselves do not emit noise. Mitigation measures (e.g., sound enclosures over the transformer) will be applied as necessary to ensure the Project meets MOE requirements with respect to noise levels in rural environments.

Summaries of each of these reports are provided in Appendix A.

1.6: Guide to Reviewing Project Reports

The REA Regulation requires that the reports discussed in Section 1.5 be made available for Aboriginal and public review at least 60 days in advance of the second public information centre for the Project. This section of the Executive Summary has been prepared to use as a guide when reviewing and commenting on these reports.

Figure 2 identifies the Project reports that are available for review, summarizes the purpose of each report and identifies a logical progression in which reports should be read to form a complete understanding of the Project and its potential environmental implications. If read in this sequence, the first reports provide information on Project construction, operation and decommissioning plans. Next, the reports identify the existing environmental features on or near the site. Finally, the remaining reports assess the potential adverse effects based on the interactions of the Project components and activities with the environmental features.

If you have any questions or require clarification on any of the information contained within these reports, you may contact Mr. Male by phone. However, all comments on the Project should be submitted in writing by letter, fax or email.

Once all comments have been received, they will be compiled and reviewed by RE Ingersoll 1 ULC and Hatch. A Consultation Report will be prepared identifying all comments received and how each comment has been addressed, and where necessary, how reports have been changed as a result.

Once all comments have been addressed, the complete REA application package, including the application form and all of the Project reports, will be submitted to the MOE for review. The MOE will

Submitting Comments

Comments on these reports should be submitted, in writing, no later than 2 weeks following the final public meeting, to the attention of:

Sean Male, M.Sc.
Environmental Coordinator
Hatch Ltd.
4342 Queen St., Suite 500
Niagara Falls, ON L2E 7J7
Phone: 905-374-0701
Fax: 905-374-1157
Email: smale@hatch.ca

then have 6 months to review the application and make a decision on the Project. The MOE's decision will be posted for a 15-day comment period on the Environmental Bill of Rights (EBR) Registry. Provided no appeal requests are received, the Project could commence, subject to receipt of any other permits and approvals that may be required.

Figure 1: Site Layout



Figure 2: Project Reports

Report Name	Purpose
Project Description Report	Summarizes Project location, construction and operational activities, potential environmental effects and mitigation, and social and environmental benefits.
Construction Plan Report	Summarizes construction activities, timelines, materials, temporary uses of land and waste materials generated and environmental effects, mitigation and monitoring during construction.
Design and Operations Report	Summarizes the site layout plan, Project components, operations and maintenance activities, communications and emergency response plan, and environmental effects monitoring plan.
Decommissioning Plan Report	Summarizes activities undertaken to decommission and restore the Project site.
Natural Heritage Records Review Report	Summarizes existing information on natural heritage features including woodlots, valleylands, wetlands, Areas of Natural and Scientific Interest and wildlife habitat.
Natural Heritage Site Investigations Report	Documents the results of the site investigations to identify and confirm natural heritage features on and within 120 m of the Project.
Natural Heritage Evaluation of Significance Report	Evaluates the significance of any natural heritage features located within 120 m of the Project.
Natural Heritage Environmental Impact Study	Identifies potential adverse environmental effects on significant natural heritage features, mitigation measures to prevent or minimize adverse effects and monitoring requirements.
Water Body Records Review Report	Summarizes existing information on waterbodies including lakes, permanent and intermittent streams and groundwater seepage areas.
Water Body Site Investigation Report	Documents the results of the site investigations to identify and confirm water body features on and within 120 m of the Project.
Water Body Environmental Impact Study	Identifies potential adverse environmental effects on waterbodies, mitigation measures to prevent or minimize adverse effects and monitoring requirements.
Stage 1 & 2 Archaeological Assessment Report	Documents the results of the desktop Stage 1 study to identify archaeological potential and the Stage 2 site investigations to confirm if archaeological artefacts are present on the site.
Heritage Resources	Documents the results of the assessment of potential effects on protected properties and heritage resources.
Noise Assessment Study	Documents the results of noise modeling to identify noise emissions levels at nearby sensitive receptors and mitigation requirements to meet MOE noise emissions guidelines.

Appendix A: Project Report Summaries

- Appendix A1 – Project Description Report Summary
- Appendix A2 – Construction Plan Report Summary
- Appendix A3 – Design and Operations Report Summary
- Appendix A4 – Decommissioning Plan Report Summary
- Appendix A5 – Natural Heritage Records Review Report Summary
- Appendix A6 – Natural Heritage Site Investigation Report Summary
- Appendix A7 – Natural Heritage Evaluation of Significance Report Summary
- Appendix A8 – Natural Heritage Environmental Impact Study Summary
- Appendix A9 – MNR Confirmation Letter
- Appendix A10 – Water Body Records Review Report Summary
- Appendix A11 – Water Body Site Investigation Report Summary
- Appendix A12 – Waterbodies Environmental Impact Study Summary
- Appendix A13 – Stage 1 & 2 Archaeological Assessment Report Summary
- Appendix A14 – MTC Confirmation Letter
- Appendix A15 – Protected Properties and Heritage Resources
- Appendix A16 – Noise Assessment Study Report Summary

Appendix A1
Project Description
Report Summary

RE Ingersoll 1 ULC RE Ingersoll 1 Solar Project

Summary

Project Description Report

1. Introduction

As per Section 17 of the Renewable Energy Approvals Regulation (O. Reg. 359/09) under Part V.0.1 of the *Environmental Protection Act*, the following is a summary of the Project Description Report for the RE Ingersoll 1 Solar Project.

RE Ingersoll 1 ULC is proposing to develop and operate a 9.5-megawatt (MW) solar photovoltaic (Solar PV) facility, on an approximately 40-hectare (ha) parcel of land located in the Township of Zorra and the Township of South-west Oxford, County of Oxford, and is situated approximately 6 km northeast of the City of Ingersoll (herein referred to as "RE Ingersoll 1" or the "Project").

Table 1 of the REA Regulation requires proponents of Class 3 solar projects to prepare a Project Description Report (PDR). The PDR is prepared as one of the first Project documents once the REA process commences and is made available for public review prior to the first public meeting. The purpose of the PDR is to provide preliminary information regarding the Project to members of the public, Aboriginal groups, municipalities and other government agencies. The contents of the PDR are summarized in the following sections.

2. Project Proponent

The RE Ingersoll 1 Project is being proposed by RE Ingersoll 1 ULC, a Nova Scotia Unlimited Liability Company owned by Recurrent Energy, LLC through its subsidiaries.

Recurrent Energy has retained Hatch Ltd., an Ontario-based environmental and engineering consulting company, to undertake the REA process.

3. Summary of Project

The proposed Project consists of a 9.5 MW Class 3 solar facility, constructed on privately owned land in the Townships of Zorra and South-west Oxford. RE Ingersoll 1 ULC has entered into a lease agreement with the private landowner for a lease term of 30 years. RE Ingersoll 1 ULC has obtained a contract from the Ontario Power Authority (OPA) to buy the power produced by the proposed facility under the Feed-In Tariff (FIT) program for a period of 20 years. The milestone commercial operation date is March 16, 2013. Decommissioning of the facility would likely not occur until around 2043.

Construction of the proposed facility would occur over a 6 to 10 month period with major construction activities including site preparation, access road construction, installation of solar panels (including footings, support structures and panels), installation of inverters and transformer and all electrical cabling and site rehabilitation following construction.

The facility would operate 365 d/yr, generating electricity when sufficient solar irradiation conditions exist. Inspection and maintenance activities would be conducted periodically throughout the year, with primary activities including inspection of components, replacement of air filters and panel washing (approximately three times per year). The proposed facility would not consume any fuels nor produce any waste as a result of generation activities.

4. Potential Environmental Effects

The PDR summarized the existing environmental features on the Project location. The site primarily consists of agricultural land with three watercourses running through narrow vegetated corridors on the Project location. The South Thames River and significant valleyland are situated south of the Project area. There are two significant woodlands within 120 m of the proposed development area.

The PDR also identified preliminary potential environmental effects of the Project including

- potential erosion and sedimentation due to construction activities
- temporary loss of Class 3 and 4 agricultural lands due to facility installation and operation
- minor removal of tree species in hedgerows
- noise emissions from the inverters and transformer.

Mitigation measures were identified to prevent or eliminate those effects. Potential effects and mitigation measures were assessed in more detail in other Project reports.

5. Outline of REA Process

The PDR provided a point form outline of the REA process including the main points of Aboriginal, public and agency consultation and reporting and assessment requirements, including identification of the Project reports required to be prepared under the REA Regulation.

6. Project's Social and Environmental Benefits

Benefits provided by the Project include

- increasing diversity, reliability, public health and environmental benefits of energy mix
- promoting stable electricity prices
- protecting public health and improving environmental quality
- ameliorating air quality problems
- improving public health by reducing the burning of fossil fuels
- enhancing energy resource diversity.

Appendix A2
Construction Plan
Report Summary

September 2, 2011

RE_Ingersoll 1_CPR_Summary_Rev_1

RE INGERSOLL 1 PROJECT SUMMARY: CONSTRUCTION PLAN

Introduction:

RE Ingersoll 1 (the "Project") is made by RE Ingersoll1 ULC. As per the March 1, 2010 draft of *Technical bulletin three: Guidance for preparing the Construction Plan Report as part of an application under O.Reg.359/09 PIBS 7438e* made under the Renewable Energy Approvals, the following is a summary of the reporting completed for the DRAFT Construction Plan for the RE Ingersoll 1 Solar Project.

RE Ingersoll1 ULC is proposing to develop and operate a 9.5 megawatt (MW) facility on a parcel of agricultural land totalling approximately 40 hectares located about 6 km northeast of Ingersoll, in the Township of Zorra and the Township of South-West Oxford in Oxford County, Province of Ontario (herein referred to as RE Ingersoll 1 project). The project will occupy approximately 16 hectares of the site in order to avoid Class 1 and 2 agricultural lands.

The Project will consist of solar photovoltaic panels that generate direct current (DC) electricity when exposed to sunlight. This project will use 230W – 280W crystalline photovoltaic modules to form the solar panel arrays. The panels will be stationary, arranged in rows mounted off the ground with a fixed tilt angle to the south to catch the sun's rays. Electricity generated by the rows of panels is collected through underground cabling by inverter/transformer pairs which convert the DC electricity to alternating current (AC) at a specified voltage. The AC current then continues from the inverters through underground cabling to a single main facility substation. At this substation, the main power transformer increases the voltage to the level of voltage of the electricity distribution grid. The power passes through protective relays (SEL - 351) and fault - breaking switches before being delivered to Hydro One's electrical network. The total installed capacity of the Project is 9.5 MW AC.

Construction:

The construction of the facility will be conducted in three phases:

- Phase 1: Site preparation
- Phase 2: Construction and Installation
- Phase 3: Post-installation

Construction of the facility is scheduled to begin in August 2012 and be complete by March 2013. The commercial operation date and associated construction schedules proposed

herein are currently estimates based on a number of variables. The start of construction and operations dates for the project maybe significantly changes, either accelerated or delayed, due to changes in expected timeframes for regulatory approval, equipment procurement, and/or project scheduling optimization.

Phase 1 – Site Preparation

Site preparation activities include: connecting a power supply, site survey and staking, road and parking area construction, water well installation; preparation of site including, removal of vegetation and topsoil and compaction of sub-grade; land preparation for construction of substation and control house, shaping of ditches and swales and; installation of a perimeter security fence.

Schedule: August 27, 2012 to January 4, 2013

Phase 2 – Construction and Installation

Construction and installation activities includes: excavation of substation area for footings, foundations and oil containment area; construction of substation and control house; installation of culverts across ditches to the public roadways and; installation of panels, transformers, inverters, cable and other equipment.

Schedule: November 9, 2012 – March 15, 2013

Phase 3 – Post-installation

Post-installation activities include: re-seeding/re-vegetating the site including ditches and swales as testing of systems prior to commencement of operations known as commissioning and commissioning of the interconnection.

Schedule: February 28, 2013 – March 16, 2013

Re-seeding/re-vegetating the site including ditches and swales will occur in the spring of 2013 when weather conditions allow. A non-invasive, native, low-maintenance plant species will be spread in order to reduce soil erosion.

Communications and Emergency Response:

Outlined in the report is a general plan for emergency communications and response at the site, including a listing of applicable local contacts for each type of emergency. A response plan to deal with general inquiries is also included in the report. A detailed emergency response plan will be developed in consultation with the local municipal authorities and emergency response agencies prior to the commencement of the construction.

Appendix A3
Design and Operations
Report Summary

RE INGERSOLL 1 PROJECT SUMMARY: DESIGN & OPERATIONS

Introduction:

RE Ingersoll 1 (the "Project") is made by RE Ingersoll 1 ULC. As per the March 1, 2010 draft of *Technical bulletin two: Guidance for preparing the Design and Operations Report as part of an application under O.Reg.359/09 PIBS 7437e* made under the Renewable Energy Approvals, the following is a summary of the reporting completed for the DRAFT Design and Operations of the RE Ingersoll 1 Solar Project.

RE Ingersoll 1 ULC is proposing to develop and operate a 9.5 megawatt (MW) facility on a parcel of agricultural land totalling approximately 40 hectares located about 6 km northeast of Ingersoll, in the Township of Zorra and the Township of South-West Oxford in Oxford County, Province of Ontario (herein referred to as RE Ingersoll 1 project). The project will occupy approximately 16 hectares of the site in order to avoid Class 1 and 2 agricultural lands.

The Project will consist of solar photovoltaic panels that generate direct current (DC) electricity when exposed to sunlight. This project will use 230W – 280W crystalline photovoltaic modules to form the solar panel arrays. The panels will be stationary, arranged in rows mounted off the ground with a fixed tilt angle to the south to catch the sun's rays. Electricity generated by the rows of panels is collected through underground cabling by inverter/transformer pairs which convert the DC electricity to alternating current (AC) at a specified voltage. The AC current then continues from the inverters through underground cabling to a single main facility substation. At this substation, the main power transformer increases the voltage to the level of voltage of the electricity distribution grid. The power passes through protective relays (SEL - 351) and fault - breaking switches before being delivered to Hydro One's electrical network. The total installed capacity of the Project is 9.5 MW AC.

Structures:

In addition to the PV panels, the facility will consist of a substation with a power transformer, control house, and internal access roadways.

Structural components in the substation area will include:

- Footings and oil containment system for the power transformer;
- Footings for the control house; and
- A pre-fabricated control house to enclose the protection and control equipment.

The internal road system will consist of approximately 2,720 m of granular roadways with widths varying from 3.5 to 5.0 m and varying depths of granular pavement structure depending on the type of subsoils encountered on the site.

Stormwater:

In general, the development will follow the existing topography of the site to the greatest extent possible in order to minimize the extent of re-grading required and to maintain existing drainage patterns. A system of swales, ditches and culverts will be constructed to collect and transport stormwater runoff through the site to existing drainage outlets. These swales and ditches will generally be installed adjacent to the proposed internal roadways and will be lined with vegetation to minimize the potential for erosion.

Maintenance:

Maintenance will include panel repairs, panel washing, maintenance to transformers, inverters and other electrical equipment as needed, maintenance to the oil/water separator system and road and fence repairs. Inspections will occur monthly and all items will be documented and repairs will take place accordingly, as required.

Visual inspections of the transformers and the oil/water separator system will be completed monthly. A record of the inspection will be kept at the site.

As part of maintenance to the property, vegetation onsite will be managed appropriately. Control of the vegetation will be satisfied to allow access to all areas of the site, as well as maintaining good aesthetics.

A water well will be installed during the construction phase of the project. The water will be used for panel washing and dust control (when required). Panels will be washed as needed, current plans are for three times per year. It is estimated that approximately 25,700 L of water would be drawn from the well over four to five days for each panel washing maintenance cycle.

The facility electrical operations will be monitored remotely with a SCADA system. The facility will be monitored by security cameras installed around the facility.

Communications and Emergency Response:

Outlined in the report is a general plan for emergency communications and response at the site, including a listing of applicable local contacts for each type of emergency. A response plan to deal with general inquiries is also included in the report. A detailed emergency response plan will be developed in consultation with the local municipal authorities and emergency response agencies prior to the commencement of the construction.

Appendix A4
Decommissioning Plan
Report Summary

RE INGERSOLL 1 PROJECT SUMMARY: DECOMMISSIONING

Introduction:

RE Ingersoll 1 (the "Project") is made by RE Ingersoll 1 ULC. As per the March 1, 2010 draft of *Technical bulletin four: Guidance for preparing the Decommissioning Plan Report as part of an application under O.Reg.359/09 PIBS 7439e* made under the Renewable Energy Approvals, the following is a summary of the reporting completed for the DRAFT Decommissioning Plan for the RE Ingersoll 1 Solar Project.

Decommissioning includes details for the Ingersoll 1 facility at the cease of operations, or if the facility is abandoned before completion. The area is currently farm land and the intent of the decommissioning process will be to return the location to as close to the baseline conditions established in 2009 as possible.

RE Ingersoll 1 ULC is proposing to develop and operate a 9.5 megawatt (MW) facility on a parcel of agricultural land totalling approximately 40 hectares located about 6 km northeast of Ingersoll, in the Township of Zorra and the Township of South-West Oxford in Oxford County, Province of Ontario (herein referred to as RE Ingersoll 1 project). The project will occupy approximately 16 hectares of the site in order to avoid Class 1 and 2 agricultural lands.

The Project will consist of solar photovoltaic panels that generate direct current (DC) electricity when exposed to sunlight. This project will use 230W – 280W crystalline photovoltaic modules to form the solar panel arrays. The panels will be stationary, arranged in rows mounted off the ground with a fixed tilt angle to the south to catch the sun's rays. Electricity generated by the rows of panels is collected through underground cabling by inverter/transformer pairs which convert the DC electricity to alternating current (AC). The AC current then continues from the inverters through underground cabling to a single main facility substation. At this substation, the main power transformer increases the voltage to the level of voltage of the electricity distribution grid. The power passes through protective relays (SEL - 351) and fault - breaking switches before being delivered to Hydro One's electrical network. The total installed capacity of the Project is 9.5 MW AC.

Removal of Equipment:

The decommissioning and restoration process comprises removal of above ground structures; removal of below ground structures; and restoration of topsoil, re-vegetation and seeding.

It is anticipated that structures will be fully removed from the ground. In the event that a structure breaks off below 1.2 m (4 feet) below the ground surface, the remaining section

will be left in place. If the structure breaks off in the upper 1.2 m (4 feet) of soil, it will be excavated and removed.

Removal of the above ground equipment includes electrical wiring, the equipment on the inverter pads and the interconnection transformer pad and associated equipment. The equipment will be de-energized prior to removal, salvaged (where possible), placed in appropriate shipping containers and secured in a truck transport trailer for shipment off-site.

Removal of the solar modules includes removing the racks which the solar panels are attached and placed in secure transport crates and into a trailer for storage for ultimate transportation to another facility. The bolts and reusable fasteners, attaching each module to the racks, will be removed will be saved for re-use, where possible. Once the solar modules have been removed, the racks will be disassembled and the structures supporting the racks will be removed. These components will be scraped and sold for salvage value.

All other associated site infrastructure will be removed which includes roads, fences, awnings, concrete pads that supported the inverters, transformers and related equipment, and the underground electrical wiring. The fence and gate shall be removed and all materials recycled to the greatest extent possible. The culvert crossing will be removed if requested by the landowner and approved by the applicable authorities.

Site Restoration:

All roads and other areas compacted during original construction or by equipment used in the decommissioning, shall be tilled in a manner adequate to restore the sub-grade material to the proper density and depth consistent with the surrounding fields. Low areas will be filled with clean, compatible sub-grade material. After proper sub-grade depth is established, topsoil will be placed to a depth and density consistent with the surrounding field. Compost will be applied to the topsoil spread and then the entire site will be tilled to further loosen the soil and blend in the compost.

Finally, an appropriate seed mixture, in accordance with the lease agreement with the landowner, subject to guidelines of local and provincial authorities, will be broadcast or drilled across the site and weed-free mulch spread will be crimped in to stabilize the soil until germination takes place and the young plants are established to facilitate moisture retention in the soil which, helps improve germination and survival of the seedlings.

Communications and Emergency Response:

Outlined in the report is a general plan for emergency communications and response at the site, including a listing of applicable local contacts for each type of emergency. A response plan to deal with general inquiries is also included in the report. A detailed emergency response plan will be developed in consultation with the local municipal authorities and emergency response agencies prior to the commencement of the decommissioning.

Appendix A5
Natural Heritage
Records Review Report Summary

RE Ingersoll 1 ULC RE Ingersoll 1 Solar Project

Summary

Natural Heritage Records Review Report

1. Introduction

As per Section 17 of the Renewable Energy Approvals (REA) Regulation (O. Reg. 359/09) under Part V.0.1 of the *Environmental Protection Act*, the following is a summary of the Natural Heritage Records Review Report for the RE Ingersoll 1 Solar Project.

RE Ingersoll 1 ULC is proposing to develop and operate a 9.5-megawatt (MW) solar photovoltaic (Solar PV) facility, on an approximately 40-hectare (ha) parcel of land, located in the Townships of South-west Oxford and Zorra, County of Oxford, approximately 6 km northeast of the City of Ingersoll; herein referred to as "RE Ingersoll 1" or the "Project".

Section 25 of the REA Regulation requires proponents of Class 3 solar projects to undertake a Natural Heritage Records Review. Records were searched within a minimum distance of 1 km from the Project location from Ministry of Natural Resources (MNR), federal government, Upper Thames River Conservation Authority (UTRCA), County of Oxford, Township of Zorra, Township of South-west Oxford and other relevant sources.

2. Results

Key natural features and points of interest identified during the records review include the following:

- A small non-provincially significant wetland was identified approximately 230 m east of the Project location; no wetlands occur on or within 120 m of the Project location.
- The South Thames River flows within a valley past the Project location, which abuts the southeastern portion of the Project location.
- There are woodlands identified within 120 m of the Project location.
- There are no ANSIs identified on or within 120 m of the Project location.
- No Crown land, and therefore Crown Forest Resources were identified in the vicinity of the Project location.
- No provincial parks or conservation reserves on or within 120 m of the Project location.
- No specific wildlife habitat features were identified during the records review; however, the identified and woodlands may provide wildlife habitat functions.
- The Natural Heritage Information Centre (NHIC) did identify an occurrence of Milksnake (*Lampropeltis triangulum*) within 1 km of the Project location.

- The Ontario Herpetofaunal Summary Atlas identified several species of reptile and amphibian whose ranges may include the Project location including Milksnake, a species of conservation concern.
- Information provided by the UTRCA shows that there are flood hazard lands present on and adjacent to the Project location.
- County of Middlesex Official Plan identified that the woodlot within the South Thames River valley is classified as significant woodlot while the woodlot located adjacent to the Project location is not classified as significant.
- In the Ontario Breeding Bird Atlas, two species at risk were identified within the vicinity of the Project: Red-headed Woodpecker (*Melanerpes erythrocephalus*).

3. Conclusions

Table 3.1 summarizes the results of the records review.

Table 3.1 Summary of Records Review Determinations

Determination to be Made	Yes/No	Description
Is the Project in or within 120 m of a provincial park or conservation reserve?	No	
Is the Project in a natural feature?	Yes	A portion of Gould Drain Branch A, which may provide wildlife movement corridor functions is located on the Project location.
Is the Project within 50 m of an ANSI (earth science)?	No	The nearest earth science ANSI is located several kilometres from the Project location.
Is the Project within 120 m of a natural feature that is not an ANSI (earth science)?	Yes	The Project is located within 120 m of a valleyland and woodlands, as well as other drains which may provide wildlife movement corridor functions.

Therefore, depending on the layout of the proposed Project, some components of the Project could potentially be located within 120 m of a natural feature. As per Section 26 of the REA Regulation, a site investigation will be required to confirm the features identified during this records review. The site investigation will (i) identify if any corrections to the information presented herein are required, (ii) determine whether any additional natural features exist on or adjacent to the Project location, (iii) confirm the boundaries of the natural features within 120 m of the Project, and (iv) determine the distance from the Project to the natural feature boundary. In addition, the potential for species at risk identified will be considered during the site investigation. However, it was noted by MNR that the Project, as currently proposed, will likely not have an impact on endangered or threatened species on the *Endangered Species Act, 2007*

Appendix A6
Natural Heritage
Site Investigation Report Summary

RE Ingersoll 1 ULC RE Ingersoll 1 Solar Project

Summary

Natural Heritage Site Investigations Report

1. Introduction

As per Section 17 of the Renewable Energy Approvals (REA) Regulation (O. Reg. 359/09) under Part V.0.1 of the *Environmental Protection Act*, the following is a summary of the Natural Heritage Site Investigations Report for the RE Ingersoll 1 Solar Project.

RE Ingersoll 1 ULC is proposing to develop and operate a 9.5-megawatt (MW) solar photovoltaic (Solar PV) facility, on an approximately 40-hectare (ha) parcel of land located in the Township of Zorra and the Township of South-west Oxford, County of Oxford, and is situated approximately 6 km northeast of the City of Ingersoll (herein referred to as "RE Ingersoll 1" or the "Project").

Section 26 of the REA Regulation requires proponents of Class 3 solar projects to undertake a Natural Heritage Site Investigation for the purpose of determining if the information provided in the Natural Heritage Records Review Report is correct, if any additional natural heritage features are present within 120 m of the Project, and if the borders and distance of the natural heritage features from the Project location are correct. To obtain this information a site visit was completed. If any features are located within the specified setbacks an Evaluation of Significance is required.

2. Results

Several watercourses within vegetated riparian corridors run through the Project location. Fields were a mixture of corn, hayfield, and pasturelands. The Thames River flows approximately 400 m south of the Project location in an adjacent valleyland. The Project location and the surrounding areas would be classified as wildlife habitat. Several woodlands are present within 120 m of the Project location.

2.1 Habitats of Seasonal Concentrations of Animals

The Project location and surrounding 120 m was searched for winter deer yards/moose late winter habitat, colonial bird nesting sites, waterfowl stopover and staging areas, waterfowl nesting, shorebird/landbird migratory stopover areas, raptor winter feeding and roosting sites, wild turkey winter range, turkey vulture summer roosting areas, reptile hibernacula, bat hibernacula, bullfrog concentration areas, and migratory butterfly stopover areas. None of the twelve habitat types were identified on or within 120 m of the Project location.

2.2 Rare Vegetation Communities or Specialized Habitat for Wildlife

Vegetation communities and specialized habitat for wildlife were searched on and within 120 m of the Project location. Rare vegetation communities include alvars, tall-grass prairies, savannahs, rare

forest types, talus slopes, rock barrens, sand barrens and Great Lakes dunes. None of these vegetation communities were identified during the site investigation.

Specialized wildlife habitats include habitat for area sensitive species, forest providing a high diversity of habitats, old-growth or mature growth stands, foraging areas with abundant mast, woodlands supporting amphibian breeding ponds, turtle-nesting habitat, specialized raptor-nesting habitat, mink, otter, marten and fisher denning sites, highly diverse areas, cliffs and caves and seeps and springs. No rare vegetation communities or specialized wildlife habitat was identified on or within 120 m of the Project location.

2.3 Habitat of Species of Conservation Concern

Habitat for Red-headed Woodpecker, Red-headed Woodpecker and Milksnake was searched for on and within 120 m of the Project location. Based on the results of the site investigations, there are no habitats for species of conservation concern on or within 120 m of the Project location.

2.4 Animal Movement Corridors

The valleyland south of the Project location which connects the Thames River, Gould Drain Branch A, Hendry Drain, and Hedgerow D, along the railway corridor, are candidate significant animal movement corridors and will be carried forward to the Evaluation of Significance Report.

2.5 Valleyland

The Thames River flows approximately 400 m south of the Project location, though associated lowlands are located within 120 m of the southern boundary of the Project location. The border of the valleyland is denoted by the edge of the natural vegetation communities. The valleyland is a candidate significant valleyland and will be carried forward to the Evaluation of Significance.

2.6 Woodland

There are several woodlands present within 120 m of the Project location. Woodlands were all described as deciduous forest (FOD) communities. The woodlands are candidate significant woodlands and will be carried forward to the Evaluation of Significance.

3. Conclusions

There are several features present within the vicinity of the Project location that will require an Evaluation of Significance in order to determine whether Environmental Impact Studies are required. These include the following three categories requiring Evaluation of Significance:

- habitat for seasonal concentrations of animals
- rare or specialized habitats for wildlife
- habitat for species of conservation concern
- wildlife movement corridors.

Therefore, some components of the Project are located within 120 m of a natural feature. As per Section 27 of the REA Regulation, an Evaluation of Significance is required to determine if the natural features are significant.

Appendix A7
Natural Heritage
Evaluation of Significance
Report Summary

**RE Ingersoll 1 ULC
RE Ingersoll 1 Solar Project****Summary****Natural Heritage Evaluation of Significance****1. Introduction**

As per Section 17 of the Renewable Energy Approvals (REA) Regulation (O. Reg. 359/09) under Part V.0.1 of the *Environmental Protection Act*, the following is a summary of the Natural Heritage Evaluation of Significance for the RE Ingersoll 1 Solar Project.

RE Ingersoll 1 ULC is proposing to develop and operate a 9.5-megawatt (MW) solar photovoltaic (Solar PV) facility, on an approximately 40-hectare (ha) parcel of land located in the Township of Zorra and the Township of South-west Oxford, County of Oxford, and is situated approximately 6 km northeast of the City of Ingersoll (herein referred to as "RE Ingersoll 1" or the "Project").

Section 24 of the REA Regulation requires proponents of Class 3 solar projects to undertake an Evaluation of Significance for each natural heritage feature identified in the records review and site investigations reports within 120 m of the Project. These reports identified the need to complete an Evaluation of Significance for

- animal movement corridors associated with Branch A of Gould Drain, and Hendry Drain
- woodlands within 120 m of the Project location
- valleyland, and associated animal movement corridor.

2. Results**2.1 Wildlife Habitat**

The criteria and processes outlined in the Ministry of Natural Resources Natural Heritage Reference Manual (NHRM) and Significant Wildlife Habitat Technical Guide (SWHTG) were used to evaluate the significance of wildlife habitat. These resources identify four main types of wildlife habitat that are considered to be significant. These include: seasonal concentrations of animals, rare or specialized habitats for wildlife, habitat for species of conservation concern and wildlife movement corridors.

The animal movement corridor within the woodlands on and within 120 m of the Project location was evaluated on the criteria of importance of areas linked by corridor, importance of corridor to survival of target species, dimensions of corridor, continuity of corridor, habitat and habitat structure of corridor, species found in corridor or presumed to be using corridor, risk of mortality for species using corridor, opportunity for protection, and provision for other related values.

Branch A of Gould Drain was determined to be a significant animal movement corridor as it met the criteria for linkage from shelter to foraging, opportunities for protection, water quality and erosion protection. The Hendry Drain was determined to be a significant animal movement corridor as it met the criteria for linkage from shelter to breeding habitat, opportunities for protection, water quality and erosion protection. Hedgerow D was determined to be a significant animal movement corridor as it met the criteria for linkage between significant corridors. The Thames River Valleyland was determined to be a significant animal movement corridor as it represents a critical animal movement corridor for semi-aquatic species such as turtles and frogs.

2.2 Woodlands

All the woodlands were initially assessed as part of the Oxford Natural Heritage Study (ONHS). The criteria for terrestrial patches include the following:

- Ecological Function
 - ◆ patches that contain rare species
 - ◆ patches that contain habitat designated in the Official Plans of the County of Oxford
 - ◆ patches within 150 m of designated, non-wetland habitats in the Official Plans (e.g., Life Science ANSIs, Environmentally Sensitive Areas, and other protected areas) or within 750 m of designated wetland habitats in the Official Plan (e.g., Provincially and Locally Significant Wetlands)
 - ◆ patches > 10 ha in size
 - ◆ patches with interior habitat
 - ◆ patches that occur within well-head capture zones or intrinsic groundwater susceptibility areas
 - ◆ patches that contain an open watercourse or are within 50 m of an open watercourse.
- Representation
 - ◆ patches with the largest amount of area on each landform and soil type in the County of Oxford and all patches that occur on valley lands
 - ◆ patches that contain large amounts of each natural vegetation community type: wet conifer > 4 ha, wet mixed > 60 ha, shrub > 4 ha, wet deciduous > 45 ha, conifer > 15 ha and mixed > 45 ha, open wetland > 10 ha and deciduous > 20 ha.

The criteria for establishing woodland significance identified within Section 7 of the Natural Heritage Reference Manual (MNR, 2010). These criteria include

- woodland size (woodlands greater than 50 ha are significant)
- ecological function
 - ◆ woodland interior (woodlands with greater than 8 ha of forest interior)
 - ◆ proximity to other woodlands or other habitats (woodlands within 30 m of a significant natural feature receiving ecological benefit from the woodland)
 - ◆ linkages (woodlands providing a connecting link between two other significant features)
 - ◆ water protection (woodlands within 50 m of water features)

- ♦ woodland diversity (a high native diversity through a combination of composition and terrain)
- uncommon characteristics (i.e., old-growth, rare vegetation communities)
- economic and social functional values (high economic or special services value).

Woodland 1 and 2 met none of the criteria for significance identified within the ONHS, however, Woodland 1 and 2 were determined to be significant woodlands based on MNR Natural Heritage Evaluation as they met the criteria for linkages. Woodland 3 was identified as significant in the ONHS as it met the criteria for size, forest interior, occurring within a well-head capture zone or intrinsic groundwater susceptibility areas and occurs within a valleyland. Woodland 4 met none of the criteria for significance identified within the ONHS, however, Woodland 4 was determined to be a significant woodland as it met the criteria for linkages. Woodland 5 was identified as significant in the ONHS as it met the criteria for occurring within a well-head capture zones or intrinsic groundwater susceptibility areas.

2.3 Valleyland

The criteria used to establish valleylands was established by the County of Oxford. The County of Oxford considered a valleyland to be significant, as defined in Section 3.4.2.4 of the Official Plan, when it was within the outer limits of the Regulatory Flood Plain or erosion hazard lands as identified by the Upper Thames River Conservation Authority. The valleyland met the criteria of significance and therefore there is a significant valleyland within 120 m of the Project location.

3. Conclusions

Table 3.1 summarizes the results of the evaluation of significance report.

Table 3.1 Significant Natural Features on and within 120 m of the Project Location

Natural Feature		Subject Lands	Adjacent Lands (within 120 m)	Notes
SIGNIFICANT	Woodland	No	Yes	There are five significant woodlands within 120 m of the Project location.
	Wildlife Habitat	Yes	Yes	Significant animal movement corridors are found on and within 120 m of the Project location.
	Valleyland	No	Yes	
PROVINCIALY SIGNIFICANT	Wetland	No	No	
	Earth Science ANSI	No	No	
	Life Science ANSI	No	No	

Therefore, of the natural heritage features evaluated, the valleyland and three woodlands met the criteria of significance. These four significant natural features require an Environmental Impact Study as per Section 38 of the REA Regulation.

Appendix A8
Natural Heritage
Environmental Impact
Study Summary

**RE Ingersoll 1 ULC
RE Ingersoll 1 Solar Project****Summary****Natural Heritage Environmental Impact Study****1. Introduction**

As per Section 17 of the Renewable Energy Approvals (REA) Regulation (O. Reg. 359/09) under Part V.0.1 of the *Environmental Protection Act*, the following is a summary of the Natural Heritage Environmental Impact Study for the RE Ingersoll 1 Solar Project.

RE Ingersoll 1 ULC is proposing to develop and operate a 9.5-megawatt (MW) solar photovoltaic (Solar PV) facility, on an approximately 40- hectare (ha) parcel of land located in the Township of Zorra and the Township of South-west Oxford, County of Oxford, and is situated approximately 6 km northeast of the City of Ingersoll (herein referred to as “RE Ingersoll 1” or the “Project”).

Section 38 of the REA Regulation requires proponents of Class 3 solar projects to complete an Environmental Impact Study (EIS) for all significant natural heritage features determined to be within a specified setback in order to obtain a REA. The EIS is required in order to determine (i) any potential negative environmental effects on the natural features (ii) identify mitigation measures (iii) describe how the environmental effects monitoring plan in the Design and Operations Report addresses any negative environmental effects and (iv) describe how the Construction Plan Report addresses any negative environmental effects.

Three woodlands and a valleyland within 120 m of the Project were identified as significant and therefore an EIS was completed. The EIS concluded there would be no significant adverse effects on these features as a result of the Project.

2. Results

The results of the EIS on the three woodlands and a valleyland are summarized in Table 2.1.

Table 2.1 Summary of Negative Environmental Effects and Proposed Mitigation

Project Phase	Potential Negative Environmental Effect	Proposed Mitigation Measure
Vegetation Communities/Wildlife Habitat		
Construction	Removal of vegetation due to direct encroachment on the natural features	No direct encroachment will occur within the significant animal movement corridors associated with Hendry Drain, Hedgerow D, and the valleyland, or the significant woodlands. Work areas in proximity to the woodlands animal movement corridors and valleyland to be marked, workers to be made aware not to enter the woodlands and valleyland. Some trees may be cleared from the animal movement corridor associated with Gould Drain – Branch A.
Construction/ Decommissioning	Heavy dust may impact photosynthesis due to fugitive dust generation	Use of dust suppressant, phased construction and decommissioning, stockpiles to be stabilized and/or covered, hard surfaces for access roads, and avoid earthworks during windy days.
Construction	Increase in surface water runoff rate and alter surface water pattern and therefore effect vegetation due to land grading and ditching, soil compaction, and vegetation removal	Minor grading will occur and take into consideration current land grade to replicate present stormwater flow pattern. Discing or other soil loosening methods will be used on compacted areas. Long-term ground cover will be planted.
Operations	Alterations to surface water runoff and therefore vegetation communities due to changes in grading and ditching, impervious or less pervious surfaces and changes in vegetation	Minor grading will occur and take into consideration current land grade to replicate present stormwater flow pattern. Long-term ground cover will be planted. Impervious and less pervious soils drain into ditches or localized areas; therefore no appreciable impact to local drainage patterns.
Decommissioning	Alterations to surface water runoff due to changes in grading and changes in vegetation.	All infrastructure will be removed, including access roads and drainage ditches, thereby bringing the site back to pre-construction conditions.
Wildlife Communities		
Construction/ Decommissioning	<p>Auditory and visual disturbance of local wildlife populations may result in a short-term reduction of resident populations.</p> <p>Potential for incidental take of wildlife.</p>	Clearing may occur within an animal movement corridor however they will be timed for the winter months. A 10-m setback from the narrowest point of the animal movement corridor will be applied. Vehicular speeds on access roads will be restricted. Construction workforce will be made aware of the potential for wildlife occurring on the Project location and to avoid wildlife wherever possible. After the installation of the fence a visual wildlife survey will be conducted and appropriate wildlife encounter protocols will be followed. Known occurrences of incidental take will be reported and species impacted will be documented. If the species is determined to be a species of conservation concern, work within the area will be ceased immediately, and the MNR/EC will be contacted to make them aware of the occurrence. Work in the area will remain ceased

Project Phase	Potential Negative Environmental Effect	Proposed Mitigation Measure
		until a survey is conducted by a trained biologist to ensure that there are no further species of conservation concern present in the area.
Operations	Auditory and visual disturbance of local wildlife populations may result in a short-term reduction of resident populations.	Maintenance workforce will be provided with observation/response protocols to deal with wildlife encounters. Maintenance of the inter-facility connection line may occur every few years within the animal movement corridor. In order to mitigate potential impacts to wildlife movement, tree removal activities will occur in the late fall to minimize impacts on animal movement.

Table 5.1 in the EIS summarizes the proposed monitoring plan.

As discussed in the Design and Operations Report, environmental effects monitoring is proposed in respect of any negative environmental effects that may result from engaging in the Project. The monitoring plan in the Design and Operations Report identifies: performance objectives in respect of the negative environmental effects; mitigation measures to assist in achieving the performance objectives; and, a program for monitoring negative environmental effects for the duration of the time the Project is engaged in, including a contingency plan to be implemented if any mitigation measures fail.

In addition, the Construction Plan Report for the Project details the construction and installation activities, location and timing of construction and installation activities, any negative environmental effects that result from construction activities within 300 m of the Project and mitigation measures for the identified negative environmental effects.

3. Conclusions

The EIS has been prepared to identify potential negative environmental effects that all phases of the Project may have on these significant natural features. Mitigation measures have been proposed to prevent these effects from occurring or minimize the magnitude, extent, duration and frequency to an acceptable level in the event that they do occur. The primary mitigation measure that will prevent adverse effects on the natural features is avoidance of direct encroachment onto the majority of the features themselves. Monitoring measures have been proposed to confirm that mitigation measures are having the intended effect and that performance objectives are being met.

Appendix A9
MNR Confirmation Letter

June 3, 2011

**Sheldon Kimber
Recurrent Energy
300 California Street, 8th Floor
San Francisco, CA 94104**

Dear Sheldon Kimber:

**RE: Recurrent Energy's RE Ingersoll 1 Solar Project Natural Heritage
Assessment and Environmental Impact Study**

In accordance with the Ministry of the Environment's (MOE's) Renewable Energy Approvals (REA) Regulation (O.Reg.359/09), the Ministry of Natural Resources (MNR) has reviewed the natural heritage assessment (NHA) and environmental impact study for RE Ingersoll 1 Solar Project in the Townships of Zorra and Southwest Oxford, in the County of Oxford, submitted by Recurrent Energy on June 1, 2011.

In accordance with Section 28(2) and 38(2)(b) of the REA regulation, MNR provides the following confirmations following review of the NHA:

1. The MNR confirms that the determination of the existence of natural features and the boundaries of natural features was made using applicable evaluation criteria or procedures established or accepted by MNR.
2. The MNR confirms that the site investigation and records review were conducted using applicable evaluation criteria or procedures established or accepted by MNR, if no natural features were identified.
3. The MNR confirms that the evaluation of the significance or provincial significance of the natural features was conducted using applicable evaluation criteria or procedures established or accepted by MNR.
4. The MNR confirms that the project location is not in a provincial park or conservation reserve.
5. The MNR confirms that the environmental impact assessment report has been prepared in accordance with procedures established by the MNR.

This confirmation letter is valid for the project as proposed in the natural heritage assessment and environmental impact study, including those sections describing the Environmental Effects Monitoring Plan and Construction Plan Report. Should any changes be made to the proposed project that would alter the NHA, MNR may need to undertake additional review of the NHA.

Where specific commitments have been made by the applicant in the NHA with respect to project design, construction, rehabilitation, operation, mitigation, or monitoring, MNR expects that these commitments will be considered in MOE's Renewable Energy Approval decision and, if approved, be implemented by the applicant.

In accordance with Section 12(1) of the Renewable Energy Approvals Regulation, this letter must be included as part of your application submitted to the MOE for a Renewable Energy Approval.

If you wish to discuss any part of this confirmation, please contact Heather Riddell, A/Planning Ecologist at 519-773-4723 or at heather.riddell@ontario.ca.

Sincerely,



Mitch Wilson
District Manager
Aylmer District MNR

cc. Jim Beal (MNR)
Andrea Fleischhauer (MNR)
Narren Santos (MOE)
Sean Caffyn (Recurrent Energy)
Bob Leah (Recurrent Energy)
Sean Male (Hatch)

Encl.

Appendix A10
Water Body
Records Review Report Summary

**RE Ingersoll 1 ULC
RE Ingersoll 1 Solar Project****Summary****Water Body Records Review Report****1. Introduction**

As per Section 17 of the Renewable Energy Approvals (REA) Regulation (O. Reg. 359/09) under Part V.0.1 of the *Environmental Protection Act*, the following is a summary of the Water Body Records Review Report for the RE Ingersoll 1 Solar Project.

RE Ingersoll 1 ULC is proposing to develop and operate a 9.5-megawatt (MW) solar photovoltaic (Solar PV) facility, on an approximately 40-hectare (ha) parcel of land located in the Township of Zorra and the Township of South-west Oxford, County of Oxford, and is situated approximately 6 km northeast of the City of Ingersoll (herein referred to as "RE Ingersoll 1" or the "Project").

Section 30 of the REA Regulation requires proponents of Class 3 solar projects to undertake a Water Body Records Review. The focus of the assessment was on identifying whether or not the Project was located within or adjacent to any of the specified water features (e.g., within 120 m of the average annual high water mark of a permanent or intermittent stream). Records were searched from the Ministry of Natural Resources (MNR), Ontario Ministry of Agriculture, Food and Rural Affairs, federal government, Upper Thames River Conservation Authority (UTRCA), County of Oxford, Township of Zorra, Township of South-west Oxford and other relevant sources.

2. Results

Key water body features and points of interest identified during the records review include

- two small watercourses (Branch A and B of the Gould Drain) cross the Project location in a general northwest-southeast direction while another watercourse (Hendry Drain) runs adjacent to the southwest Project location boundary
- all three watercourses run through culverts beneath the rail tracks immediately south of the Project location where they drain into a larger pond south of the Project location
- the South Thames River, which is located immediately south and east of the pond, approximately 400 m from the Project location boundary does not appear to be directly connected to the adjacent pond.

3. Conclusions

Table 3.1 summarizes the results of the records review.

Table 3.1 Summary of Records Review Determinations

Determination to be Made	Yes/No	Description
Is the Project in a water body?	Yes	An access road water crossing may be required on Branch B of the Gould Drain
Is the Project 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 lakes are present on or within 120 m of the Project location.
Is the Project within 300 m of the average annual high water mark of a lake trout lake that is at or above development capacity?	No	No lake trout lakes are present on or within 300 m of the Project location.
Is the Project within 120 m of the average annual high water mark of a permanent or intermittent stream?	Yes	Three small streams traverse the Project location and one small stream runs adjacent to the Project location. A pond is located south of the Project location.
Is the Project within 120 m of a seepage area?	No	A groundwater discharge area is located approximately 140 m away from the Project location.

A site investigation, as required in Section 31 of the REA Regulation will be completed to (i) confirm the features identified during this records review, (ii) identify if any corrections to the information presented herein are required, (iii) determine whether any additional waterbodies exist in the Project area, (iv) confirm the boundaries of any water feature within 120 m of the Project and (v) determine the distance from the Project to the water boundary.

Appendix A11

Water Body Site Investigation Report Summary

RE Ingersoll 1 ULC RE Ingersoll 1 Solar Project

Summary

Water Body Site Investigations Report

1. Introduction

As per Section 17 of the Renewable Energy Approvals (REA) Regulation (O. Reg. 359/09) under Part V.0.1 of the *Environmental Protection Act*, the following is a summary of the Water Body Site Investigations Report for the RE Ingersoll 1 Solar Project.

RE Ingersoll 1 ULC is proposing to develop and operate a 9.5-megawatt (MW) solar photovoltaic (Solar PV) facility, on an approximately 40-hectare (ha) parcel of land, located in the Township of Zorra and the Township of South-west Oxford, County of Oxford, approximately 6 km northeast of the City of Ingersoll (herein referred to as "RE Ingersoll 1" or the "Project").

Section 31 of the REA Regulation requires proponents of Class 3 solar projects to undertake Water Body Site Investigations for the purpose of determining if the information provided in the Water Body Records Review Report is correct, if any additional waterbodies are present within 120 m of the Project, and if the borders and distance of the waterbodies from the Project location are correct. To obtain this information a site visit was completed. If any waterbodies are located within the specified setbacks an Environmental Impact Study is required.

2. Results

Five waterbodies were noted during the site investigation. They are described as follows.

Gould Drain Branch A

- This drain is considered to be intermittent and classified as a water body as per the REA Regulation.
- Originates north of the Project location and flows south and then through a culvert beneath Regional Road 66.
- Emerges on the Project location and flows in a general northwest-southeast direction.
- Flows through a culvert under the railway tracks, where it drains into a large pond/side channel adjacent to the South Thames River.
- The portion of the drain south of Regional Road 66 is located within the UTRCA's Regulated Area and a flood hazard is noted as being present.

Gould Drain Branch B

- This drain is considered to be intermittent and classified as a water body as per the REA Regulation.
- Originates on the proposed Project location, and flows in a southeasterly direction and draining into the adjacent pond on the other side of the tracks.
- On the Project location drain runs through a vegetated corridor.
- The entire length of the drain is located within the UTRCA's Regulated Area and a flood hazard is noted as being present.

Unnamed Drain

- This drain is considered to be intermittent and classified as a water body as per the REA Regulation.
- Runs through the southwestern portion of the Project location.

Hendry Drain

- This drain had flowing water at the time of the site investigation and classified as a water body as per the REA Regulation.
- Located northwest of the Project location, and flows in a southeasterly direction and adjacent to the southwest corner of the Project location.
- Runs under the railway tracks and drains into the adjacent pond/South Thames River side channel.

South Thames River

- Identified as a System 1 watercourse and classified as a water body as per the REA Regulation.
- Located approximately 400 m south and east of the Project boundary.
- Not direct hydrological link between the river and large pond to the south of the Project location.

A groundwater seepage area was also identified but based on groundwater mapping tools the closest boundary of the groundwater discharge zone within the large pond area is approximately 140 m away from the Project location.

3. Conclusions

The two Gould Drain branches, Hendry Drain, Unnamed Drain and the South Thames River will all require an Environmental Impact Study as per Sections 39 and 40 of the REA Regulation in order to determine (i) any potential negative environmental effects on the natural features (ii) identify mitigation measures (iii) describe how the environmental effects monitoring plan in the Design and Operations Report addresses any negative environmental effects and (iv) describe how the Construction Plan Report addresses any negative environmental effects.

Appendix A12
Waterbodies
Environmental Impact
Study Summary

**RE Ingersoll 1 ULC
RE Ingersoll 1 Solar Project****Summary****Waterbodies Environmental Impact Study****1. Introduction**

As per Section 17 of the Renewable Energy Approvals Regulation (O. Reg. 359/09) under Part V.0.1 of the *Environmental Protection Act*, the following is a summary of the Waterbodies Environmental Impact Study for the RE Ingersoll 1 Solar Project.

RE Ingersoll 1 ULC is proposing to develop and operate a 9.5-megawatt (MW) solar photovoltaic (Solar PV) facility, on an approximately 40-hectare (ha) parcel of land, located in the Townships of South-west Oxford and Zorra, County of Oxford, approximately 6 km northeast of the City of Ingersoll; herein referred to as "RE Ingersoll 1" or the "Project".

Sections 39 and 40 of the REA Regulation require proponents of Class 3 solar projects to complete an Environmental Impact Study (EIS) for all waterbodies determined to be within a specified setback in order to obtain a REA. The EIS is required in order to determine (i) any potential negative environmental effects on the natural features (ii) identify mitigation measures (iii) describe how the environmental effects monitoring plan in the Design and Operations Report addresses any negative environmental effects and (iv) describe how the Construction Plan Report addresses any negative environmental effects.

This EIS was completed on the two Gould Drain branches, Hendry Drain, Unnamed Drain and the South Thames River. It has been determined that there are no significant environmental impacts to these waterbodies as a result of the Project.

2. Results

The results of the EIS on the five waterbodies are summarized in Table 2.1.

Table 2.1 Summary of Potential Negative Environmental Effects and Proposed Mitigation

Project Phase	Potential Negative Environmental Effect	Proposed Mitigation Measure
Surface Water Runoff		
Construction	Altered surface water runoff pattern and rate causing an increase in surface water runoff to the receiving water bodies due to land grading and ditching, soil compaction, and vegetation removal.	Install flow dissipation measures near the 30-m setback from the waterbodies. Ditches will be vegetated with appropriate grass species to aid in flow dissipation and water uptake. Enhanced vegetated swales and filter strips will be utilized where appropriate. Rock flow check dams and/or straw bale flow checks will be used in ditches to promote minor ponding in order to decrease turbidity and increase water retention. Discing or other soil loosening methods will be used on compacted areas. Long-term ground cover will be planted.
Operations	Altered surface water runoff pattern and rate causing an increase in surface water runoff to the receiving water bodies due to land grading and ditching, impervious and less pervious soils, and changes in vegetation.	Minor grading will occur and take into consideration current land grade to replicate present stormwater flow pattern. Long-term ground cover will be planted. Impervious and less pervious soils will allow runoff into ditches or localize points and discharge into vegetation to allow flow dissipation. It is estimated that peak flow will increase by 9.8% and the stormwater 7.5%.
Decommissioning	Altered surface water runoff pattern and rate causing an increase in surface water runoff to the receiving waterbodies if land grading and ditching are left in place after decommissioning.	All infrastructure will be removed, including access roads and drainage ditches, thereby bringing the site back to pre-construction conditions.
Surface Water Quality		
Construction	Increase soil erosion and sedimentation may cause an increase in turbidity in the receiving waterbodies due to land grading and ditching, soil compaction, and vegetation removal.	Erosion and Sediment Control plan to be created and implemented. Examples of key components of the plan are: minimize size of cleared and disturbed areas, phase construction to minimize time of exposed soils, adequate supply of erosion and sediment control measures (e.g., silt fences), divert runoff through vegetated areas, install flow velocity control measures in drainage ditches, revegetate and stabilize exposed soils, grade stockpiles to stable angle, stockpiles placed in suitable areas away from the receiving waterbodies.
Construction/ Decommissioning	Heavy dust may impact surface water quality.	Use of dust suppressant (water or other materials that will not adversely affect water quality or vegetation growth), phased construction and decommissioning, stockpiles to be stabilized and/or covered, hard surfaces for access roads, and avoid earthworks during windy days
Construction/ Operations/ Decommissioning	Accidental spills contaminating surface water.	Fuelling stations and hazardous materials storage to be located outside of the 1:250-yr Flood Hazard. Emergency spill kit on site at all times and the spill kit will have adequate materials/equipment for spill response. Machinery arriving on site to be clean and free of leaks. Contractor to have spill response procedure and all workers will be properly trained on the procedure. No cement products to be placed into any watercourse. Concrete truck rinsing station at least

Project Phase	Potential Negative Environmental Effect	Proposed Mitigation Measure
		120 m away from any known watercourse. Cement storage to be raised and placed in a waterproof shelter.
Operations	Increase soil erosion and sedimentation may cause an increase in turbidity in the receiving waterbodies due to land grading and ditching, and changes in vegetation.	Stormwater flow patterns will be replicated. Long-term ground cover will be planted. Impervious and less pervious soils will allow runoff into ditches or localize points and discharge into vegetation to allow flow dissipation; therefore no appreciable impact to local drainage patterns
Operations	Water used in maintenance activities to be released on site may affect surface water quality.	Panel washing will use approximately 25,700 L over a 4 to 5 day period. No cleaning agents will be used and therefore no impacts to surface water quality is anticipated.
Decommissioning	Increase soil erosion and sedimentation may cause an increased in turbidity in the receiving waterbodies due to land grading and ditching, and changes in vegetation.	All infrastructure will be removed, including access roads and drainage ditches, thereby bringing the site back to pre-construction conditions.
Aquatic Biota and Habitat		
Construction	Impacts to aquatic biota and habitat due to installation of overhead transmission lines required in-water work.	Install overhead lines when the waterbodies are frozen if possible. Install overhead lines perpendicular to waterbodies to minimize length of disruption. Prevent or minimize vegetation removal. No fording. No machinery will operate on the banks of the annual high water mark. Sediment and erosion controls will be in place prior to work commencing. Revegetate disturbed areas as soon as possible.
Construction/ Operation/ Decommissioning	Indirect effects to aquatic biota and habitat due to changes in surface water quality, surface water runoff rate and groundwater.	Proposed mitigation for surface water quality, surface water runoff and groundwater, as above, is anticipated to be sufficient.
Groundwater		
Construction	Groundwater levels may be affected if pumping from excavations is required.	Only the substation excavation may be deep enough to intersect groundwater table. Duration of pumping minimized to extent possible. Seepage to be controlled at source in excavation if significant pumping necessary.
Construction	Groundwater levels may be affected due to water takings from on-site well for construction purposes.	Groundwater takings anticipated to be around 10,000 L/d for majority of construction. If more water required, takings will be limited to 45,000 L/d to minimize local changes in groundwater
Operations	Groundwater resources potentially affected by well withdrawals for periodic maintenance purposes.	Panel washing will use up to ~ 25,700 L over a 4 to 5 day period approximately three times per year. Should other maintenance activities require more water, groundwater withdrawal will be limited to 45,000 L/d or less. This will have a minimal short-term effect on the local groundwater table around the well.
Construction/ Operations/ Decommissioning	Groundwater contamination due to accidental spills.	See mitigation measures above for accidental spills contaminating surface water.

Table 5.1 in the EIS summarizes the proposed monitoring plan.

As discussed in the Design and Operations Report, environmental effects monitoring is proposed in respect of any negative environmental effects that may result from engaging in the Project. The monitoring plan in the Design and Operations Report identifies: performance objectives in respect of the negative environmental effects; mitigation measures to assist in achieving the performance objectives; and, a program for monitoring negative environmental effects for the duration of the time the Project is engaged in, including a contingency plan to be implemented if any mitigation measures fail.

In addition, the Construction Plan Report for the Project details the construction and installation activities, location and timing of construction and installation activities, any negative environmental effects that result from construction activities within 300 m of the Project and mitigation measures for the identified negative environmental effects.

3. Conclusions

The EIS has been prepared to identify potential negative environmental effects that all phases of the Project may have on waterbodies. Mitigation measures have been proposed to prevent these effects from occurring or minimize the magnitude, extent, duration and frequency in the event that they do occur. The primary mitigation measure that will prevent adverse effects on the waterbodies is adherence to the 30-m setback requirement. Certain construction activities may have short-term minor impacts, but these would be temporary in nature. Operational activities are not anticipated to impact the waterbodies as the Project will be operated remotely and maintenance is only expected to occur periodically throughout the year. Decommissioning activities will be similar to construction activities and as such they may cause short-term minor impacts yet once the Project location has been restored to its previous condition no long-term impacts are anticipated.

Overall, while the Project will result in some changes to the natural environment, no negative effects on the waterbodies are anticipated to occur following implementation of the mitigation and monitoring measures proposed in this EIS.

Appendix A13

Stage 1 and 2 Archaeological Assessment Report Summary

**RE Ingersoll 1 ULC
RE Ingersoll 1 Solar Project****Summary****Stage 1 and 2 Archaeological Assessment Report****1. Introduction**

As per Section 17 of the Renewable Energy Approvals (REA) Regulation (O. Reg. 359/09) under Part V.0.1 of the *Environmental Protection Act*, the following is a summary of the Archaeological Assessment Report, prepared by D.R. Poulton & Associates for the RE Ingersoll 1 Solar Project.

RE Ingersoll 1 ULC is proposing to develop and operate a 9.5-megawatt (MW) solar photovoltaic (Solar PV) facility, on an approximately 40-hectare (ha) parcel of land, located in the Townships of Zorra and South-west Oxford, County of Oxford, approximately 6 km northeast of the City of Ingersoll (herein referred to as "RE Ingersoll 1").

Section 22 of the REA Regulation requires proponents of Class 3 solar projects to undertake an Archaeological Assessment where there is a concern that an undertaking could impact archaeological resources. The Ministry of Tourism and Culture must review and accept the Archaeological Assessment Report and provide an acceptance letter that will become part of the application for a REA. The purpose of the present assessment was to confirm the presence or absence of significant archaeological resources that could represent potential constraints for the proposed RE Ingersoll 1 Solar Generation Facility. The assessment included a Stage 1 background study of past archaeological investigations and known archaeological sites within a 2-km radius of the RE Ingersoll 1 Project site. It also included a systematic 5-m interval Stage 2 archaeological survey of all of the Leased Lands in the property.

2. Results

The background study determined that no previous archaeological fieldwork or discoveries had been documented within the RE Ingersoll 1 Project location or in close proximity to it and no archaeological sites had been registered or otherwise recorded within a 2-km radius of the property. The study also determined that the property had a moderate to high potential for as yet undiscovered sites. The survey resulted in the discovery of nine sites. Eight of the sites consisted of isolated First Nations findspots of unknown age and cultural affiliation. The ninth site, which was designated as the Downing Site, is located in the wooded valleyland south of the proposed development area and has been tentatively classified as a First Nations camp site.

3. Conclusions

The office of the Ministry of Tourism and Culture has reviewed the Archaeological Assessment Report in accordance with Part VI of the Ontario Heritage Act, R.S.O 1990, c 0.18, and accepted its finding. The eight isolated First Nations findspots do not represent significant archaeological resources or planning concerns for the proposed solar generation facility. However, the Downing Site is considered to represent a potentially significant archaeological resource and planning concern. A Stage 3 assessment has been recommended. After the completion of the Stage 3 assessment, a setback will be applied should the Downing Site be classified as a significant archaeological resource.

Appendix A14
MTC Confirmation Letter

Ministry of Tourism and Culture
Culture Programs Unit
Programs & Services Br.
900 Highbury Avenue
London, ON N5Y 1A4
Tel: 519-675-6898
Fax: 519-675-7777
e-mail: shari.prowse@ontario.ca
September 29, 2010

Ministre du Tourisme et de la Culture
Unité des programmes culturels
Direction des programmes et des services
900, av. Highbury
London, ON N5Y 1A4
Tél: 519-675-6898
Télé: 519-675-7777
e-mail: shari.prowse@ontario.ca



Ms. Kim Arnold
Manager, Environmental Services
Renewable Power
Hatch Ltd.
4342 Queen Street
Niagara Falls, Ontario
L2E 7J7

RE: RE Ingersoll 1 Solar Generation Facility, 414774 41st Line, North Oxford Geographic Township, Oxford County, Ontario, FIT-FHHJBPR, MTC File HD00489, PIF # P316-049-2010

Dear Proponent:

This letter constitutes the Ministry of Tourism and Culture's written comments as required by s. 22(3)(a) of O. Reg. 359/09 under the *Environmental Protection Act* regarding archaeological assessments undertaken for the above project.

Based on the information contained in the report you have submitted for this project, the Ministry believes the archaeological assessment complies with the *Ontario Heritage Act's* licensing requirements, including the licence terms and conditions and the Ministry's 1993 Archaeological Assessment Technical Guidelines. Please note that the Ministry makes no representation or warranty as to the completeness, accuracy or quality of the Report.*

The report recommends the following:

Stage 1-2 Report (P316-049-2010), June 25, 2010, Revised September 1, 2010

The Stage 1-2 archaeological assessment of the RE Ingersoll 1 property confirmed the presence of nine archaeological sites. All nine are First Nations sites. Eight of the sites are located in agricultural fields and have been classified as isolated findspots. The other site is designated the Downing site. It has tentatively been classified as a camp. None of the isolated findspots is considered to represent a potentially significant archaeological resource or planning concern. The Downing site is considered to represent a potentially significant archaeological resource and planning concern.

As previously described, the Downing site is located on the gentle upper slope of a wooded area in the eastern portion of the property. As illustrated in Figure 4, it is located within the Leased Lands but more than 35 metres outside of the proposed layout of the solar panels. In fact, the proposed solar panels will be set back from the edge of the forested lands so that no part of them will fall within the shade cast by the forest. Regardless, in response to a request from Shari Prowse of the Ministry of Tourism and Culture (letter of August 13, 2010 to Dana Poulton), it is recommended that manual Stage 3 test excavations be carried out at the Downing site.

If the Downing site is confirmed to represent a significant archaeological resource and planning concern, the Stage 3 report will include recommendations on measures to mitigate the Downing site. The two basic mitigative options are preservation by protection and avoidance and mitigation by the implementation of Stage 4 salvage excavations.

Further to the above, if preservation were to prove the preferred option, the Stage 3 report would include a recommendation that fencing be erected to form a physical barrier between the site and the proposed solar panel layout. In addition, prior to any earthmoving or construction an on-site meeting would be held between the consulting archaeologist and the contractor for the proposed development. The purpose of the meeting would be to confirm the proposed limits of the fencing and to confirm the contractor is aware that the fenced area that would contain the site would be a no go zone during the construction of the proposed RE Ingersoll 1 Solar Generation Facility. Figure 4 illustrates the suggested location of the fencing that would separate the Downing site from the proposed solar panel layout. The proposed location of this fencing provides a 30 metre buffer separating the site from the proposed solar panel layout.

The above conclude the property-specific recommendations of this report. Nevertheless, it should be emphasized that no archaeological assessment can be considered to totally negate the potential for deeply buried cultural remains, including human burials. In recognition of that fact, the archaeological assessment technical guidelines formulated by the Province of Ontario require that all reports on archaeological assessments include recommendations to address the possibility that deeply buried remains may be encountered during earthmoving and construction (MCTR 1993:12).

In accordance with the above, it is recommended that archaeological staff of the Ontario Ministry of Tourism and Culture be notified immediately if any deeply buried archaeological remains should be discovered during earthmoving or construction related to the proposed solar generation facility. In the event that human remains should be encountered, it is similarly recommended that the proponent immediately contact Shari Prowse, Archaeological Review Officer, Ontario Ministry of Tourism and Culture (email address Shari.Prowse@ontario.ca, telephone 519 675-6898) and Michael D'Mello, the Registrar of the Cemeteries Regulation Unit of the Ontario Ministry of Small Business and Consumer Services (telephone #416 326-8404; email address Michael.D'Mello@ontario.ca).

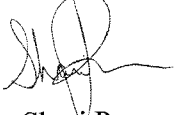
The Ministry is satisfied with these recommendations.

This letter does not waive any requirements which you may have under the *Ontario Heritage Act*. A separate letter addressing archaeological licensing obligations under the Act will be sent to the archaeologist who completed the assessment and will be copied to you.

This letter does not constitute approval of the renewable energy project. Approvals of the project may be required under other statutes and regulations. It is your responsibility to obtain any necessary approvals or licences.

Please feel free to contact me if you have questions or require additional information.

Sincerely,



Shari Prowse
Archaeology Review Officer

cc. Ms. Sherri Pearce, D.R. Poulton and Associates Ltd.
Mr. Bob Leah, Recurrent Energy

*In no way will the Ministry be liable for any harm, damages, costs, expenses, losses, claims or actions that may result: (a) if the Report(s) or its recommendations are discovered to be inaccurate, incomplete, misleading or fraudulent; or (b) from the issuance of this letter. Further measures may need to be taken in the event that additional artifacts or archaeological sites are identified or the Report(s) is otherwise found to be inaccurate, incomplete, misleading or fraudulent.

Appendix A15

Protected Properties and Heritage Resources

Project Report

September 2, 2011

RE Ingersoll 1 ULC
RE Ingersoll 1 Solar Project

Protected Properties and Heritage Resources

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1. Introduction

1.1 Project Description

RE Ingersoll 1 ULC is proposing to develop and operate a 9.5-megawatt (MW) solar photovoltaic (Solar PV) facility, on an approximately 40-hectare (ha) parcel of land located in the Township of Zorra and the Township of South-west Oxford, County of Oxford, and is situated approximately 6 km northeast of the City of Ingersoll (herein referred to as “RE Ingersoll 1” or the “Project”).

1.2 REA Legislative Requirements

Ontario Regulation (O. Reg.) 359/09 – *Renewable Energy Approvals Under Part V.0.1 of the Act*, (herein referred to as the REA Regulation) made under the *Environmental Protection Act* identifies the Renewable Energy Approval (REA) requirements for renewable energy projects in Ontario. As per Section 4 of the REA Regulation, ground mounted solar facilities with a name plate capacity greater than 10 kilowatts (kW) are classified as Class 3 solar facilities and do require an REA.

Section 19 of the REA Regulation requires proponents of Class 3 solar projects to determine whether the project location is on a property described in Column 1 of the Table to Section 19. Table 1.1 has been prepared to meet this requirement.

Section 23 of the REA requires that proponents of Class 3 solar projects, determine whether engaging in the renewable energy project may have an impact on a heritage resource described in Subsection 20 (1). Table 1.2: *The Ministry of Culture – Check Sheet for Environmental Assessments: Screening for Impacts to Built Heritage and Cultural Heritage Landscapes* has been completed to address the requirements described in Section 23.

2. Protected Properties

As discussed in Section 1.2, Table 1.1 has been prepared to address Section 19 of the REA Regulation.

3. Heritage Assessment

As discussed in Section 1.2, Table 1.2 has been prepared to address Section 23 of the REA Regulation.

4. Conclusion

Based on the information presented in Table 1.1 the proposed Project is not located on a Protected Property as described in Column 1 of the Table to Section 19. In addition, research and agency consultation undertaken as described within Table 1.2 has not identified the need for a heritage impact assessment under Section 23 of the REA Regulation.

Table 1.1 - Protected Properties Table
Under the Renewable Energy Approval: O. Reg. 359/09 Section 19

19. (1) A person who proposes to engage in a renewable energy project shall determine whether the project location is on a property described in Column 1 of the Table to this Section.

Property: Ingersoll 1

Address: 414774 41st Line, RR#3, Ingersoll I, ON, N5C 3J5

Township and County: Townships of Zorra and South-West Oxford, County of Oxford

Item	Description of Property	Reference
1	A property that is subject of an agreement, covenant or easement entered into under clause 10(1)(b) of the <i>Ontario Heritage Act</i> .	See MTC Check Sheet Step 2, Item 4. The property is not designated under clause 10(1)(b) of the <i>Ontario Heritage Act</i> .
2	A property in respect of which a notice of intention to designate the property to be of cultural heritage value or interest has been given in accordance with section 29 of the <i>Ontario Heritage Act</i> .	Consultation with the municipality, as per MTC Check Sheet Step 2, Item 8 has not determined that a notice of intention to designate has been given. In addition, The MTC Ontario Heritage Properties Database includes properties designated under Part IV of the <i>Ontario Heritage Act</i> . The Project is not proposed to be located on or adjacent to such a property.
3	A property designated by a municipal by-law made under section 29 of the <i>Ontario Heritage Act</i> as a property of cultural heritage value or interest.	Consultation with the municipality, as per MTC Check Sheet Step 2, Item 8 has not determined that the Project is located on a property designated by a municipal by-law. In addition, The MTC Ontario Heritage Properties Database includes properties designated under Part IV of the <i>Ontario Heritage Act</i> . The Project is not proposed to be located on or adjacent to such a property.
4	A property designated by order of the Minister of Tourism and Culture made under section 34.5 of the <i>Ontario Heritage Act</i> as a property of cultural heritage value or interest of provincial significance.	The MTC Ontario Heritage Properties Database includes properties designated under Part IV of the <i>Ontario Heritage Act</i> . The Project is not proposed to be located on or adjacent to such a property.
5	A property in respect of which a notice of intention to designate the property as property of cultural heritage value or interest of provincial significance has been given in accordance with section 34.6 of the <i>Ontario Heritage Act</i> .	The MTC Ontario Heritage Properties Database includes properties designated under Part IV of the <i>Ontario Heritage Act</i> . The Project is not proposed to be located on or adjacent to such a property.
6	A property that is subject of an easement or a covenant entered into under section 37 of the <i>Ontario Heritage Act</i> .	The MTC Ontario Heritage Properties Database includes properties designated under Part IV of the <i>Ontario Heritage Act</i> . The Project is not proposed to be located on or adjacent to such a property.

7	A property that is part of an area designated by a municipal by-law made under section 41 of the <i>Ontario Heritage Act</i> as a heritage conservation district.	The MTC Ontario Heritage Properties Database includes properties designated under Part V of the <i>Ontario Heritage Act</i> . The Project is not proposed to be located on or adjacent to such a property.
8	A property designated as a historic site under Regulation 880 of the Revised Regulations of Ontario, 1990 (Historic Sites) made under the <i>Ontario Heritage Act</i> .	The property is not designated a historic site under Regulation 880.

Table 1.2 - Ministry of Tourism and Culture – Check Sheet for Environmental Assessments Screening for Impacts to Built Heritage and Cultural Heritage Landscapes

This checklist will help identify potential cultural heritage resources, determine how important they are and indicate whether a heritage impact assessment is required.

Property: Ingersoll 1

Address: 414774 41st Line, RR#3, Ingersoll I, ON, N5C 3J5

Township and County: Townships of Zorra and South-West Oxford, County of Oxford

Step 1 – Screening Potential Resources			
		Built heritage resources	Comments
Yes	No	Does the property contain any built structures, such as:	The following resources were assessed using Google Earth 5.1.3533.1731 on February 10, 2010. All leased lands for this project appear to be on land cultivated for agricultural use.
	√	Residential structures (e.g. house, apartment building, trap line shelter)	
	√	Agriculture (e.g. barns, outbuildings, silos, windmills)	
	√	Industrial (e.g. factories, complexes)	
	√	Engineering works (e.g. bridges, roads, water/sewer systems)	
		Cultural heritage landscapes	
Yes	No	Does the property contain landscapes such as:	
	√	Burial sites and/or cemeteries	
	√	Parks	
	√	Quarries or mining operations	
	√	Canals	
√		Other human-made alterations to the natural landscape	Land has been cultivated for agricultural use. Drainage tile is likely installed below the surface.

Step 2 – Screening Potential Significance			
Yes	No	A property's heritage significance may be identified through the following:	Comments
			According to the MTC Ontario Heritage Properties Database there are no heritage properties located within the municipality (Website search: 10Feb10)

√	1. Is it designated or adjacent to a property designated under the Ontario Heritage Act?	See general comment above.
√	2. Is it listed on the municipal heritage register or provincial register (e.g. Ontario Heritage Bridge List)?	See general comment above.
√	3. Is it within or adjacent to a Heritage Conservation District?	None of Ontario's Heritage Conservation Districts are located within either Municipality according to the MTC's current list. (Research completed 19Feb10 http://www.culture.gov.on.ca/english/heritage/conservation/conservation_list.htm)
√	4. Does it have an Ontario Heritage Trust easement or is it adjacent to such a property?	According to the Ontario Heritage Trust website (www.heritagefdn.on.ca) no easement properties are located in the vicinity of the property. In addition, the Ontario Heritage Properties Database did not reveal any easement properties. (Research completed 10Feb10)
√	5. Is there a provincial or federal plaque?	There are no provincial plaques located in the vicinity of the Project location (Research completed 25Feb10 http://www.ontarioplaques.com/index.html). Federal plaques appear at National Historical Sites of Canada, none of which exist within the vicinity of the Project (See Item 6 below).
√	6. Is it a National Historic Site?	See general comment above. National Historic Sites are included within the Ontario Heritage Properties Database (Research completed 10Feb10). In addition, no sites within the vicinity of the Project are listed on the Canadian Register of Historic Places (Research completed 19Feb10 www.historicplaces.ca).
√	7. Does documentation exist to suggest built heritage or cultural heritage landscape potential? (e.g. research studies, heritage impact assessment reports, etc.)	
√	8. Was the municipality contacted regarding potential cultural heritage value?	The municipalities were contacted on February 25, 2010 (Township of Zorra) and March 1, 2010 (South-West Oxford). It was confirmed that there is no Municipal Heritage Committee within either municipality.
√	Were any concerns expressed?	
	9. What are the dates of construction?	N/A
√	Are the buildings and/or structures over 40 years old?	There are no buildings and/or structures on the lots where the Project will be located.
√	Is it within a Canadian Heritage River watershed?	Although the property is located within a Canadian Heritage River Watershed, the Upper Thames River Conservation Authority has confirmed that "the project is in close proximity to the heritage river. From a recreational perspective, the view for canoeists, hikers, etc. should not be impacted. For cultural heritage we would recommend that you contact the local municipality to get advice from their heritage planners / committees or people with

			archaeological knowledge to determine if any cultural values are impacted". The municipality has been contacted (See Item 8. above) and no such concerns have been expressed. Therefore, it has been determined that a Heritage Impact Assessment is not required based on the projects location within a Canadian Heritage River Watershed.
	√	10. Is a renowned architect or builder associated with the property?	N/A

Note: If you answer "yes" to any of the questions in Step 2, a heritage impact assessment is required.

Step 3 – Screening for Potential Impacts			
Yes	No		Comments
	√	Destruction of any, or part of any, significant heritage attribute or feature.	
	√	Alteration that is not sympathetic, or is incompatible, with the historic fabric or appearance.	
	√	Shadows created that alter the appearance of a heritage attribute or change the visibility of a natural feature or plantings, such as a garden.	
	√	Isolation of a heritage attribute from its surrounding environment, context or a significant relationship.	
	√	Direct or indirect obstruction of significant views or vistas from, within, or to a built and natural feature.	
	√	A change in land use such as rezoning a battlefield from open space to residential use, allowing new development or site alteration to fill in the formerly open spaces.	
	√	Land disturbances such as a change in grade that alters soils and drainage patterns that adversely affect an archaeological resource.	

Contents of a Heritage Impact Assessment

As a minimum, the following should be included in a heritage impact assessment:

1. Historical research, site analysis and evaluation
2. Identification of the significance and heritage attributes of the property
3. Description of the proposed development/ site alteration
4. Measurement of impacts
5. Consideration of alternatives, mitigation and conservation methods
6. Implementation and monitoring schedules
7. Summary statement and conservation recommendations

For more information, refer to Ministry of *Culture Info Sheet#5: Heritage Impact Assessments and Conservation Plans* as part of the Ontario Heritage Tool Kit, which is available on the Ministry's website www.culture.gov.on.ca.

Appendix A16

Noise Assessment Study Report Summary

RE Ingersoll 1 ULC RE Ingersoll 1 Solar Project

Summary

Noise Assessment Study Report

1. Introduction

This report presents the results of the noise assessment study for the RE Ingersoll 1 Solar Project, required under O. Reg. 359/09 as part of the Renewable Energy Approval Process (REA).

RE Ingersoll 1 ULC is proposing to develop and operate a 9.5 megawatt (MW) solar facility on an approximately 40 hectare (ha) parcel of land located in the Township of Zorra and the Township of South-west Oxford, County of Oxford. The area is located approximately 6 km northeast of the City of Ingersoll, Ontario.

This Noise Impact Assessment has been prepared based on the document entitled “Basic Comprehensive Certificates of Approval (Air) – User Guide” by the Ontario Ministry of the Environment (MOE), which requires that the sound pressure levels at the points of reception (POR) are estimated using ISO 9613-2. The performance limits used for verification of compliance correspond to the values for Class 3 areas (45 dBA for day time, 40 dBA for night time) as established by MOE.

2. Results

- The main sources of noise from the solar facility will be the step-up transformer, located at the substation, and seven inverter clusters which also include step-up transformers.
- The sound pressure levels at the POR were predicted using procedures from ISO 9613-2 as required by MOE (Basic Comprehensive Certificates of Approval (Air) – User Guide), which is a widely used standard for evaluation of noise impact in environmental assessments
- For the purpose of evaluating the potential noise impacts of the substation transformer, the sound power level was estimated using data from the National Electrical Manufacturers Association (NEMA). This standard provides maximum sound level values for transformers, and manufacturers routinely meet this specification.
- Noise data was obtained for two inverter manufacturers: Satcon and Xantrex. Both inverters had the same capacity at 500 kW. Xantrex data was more complete, including third-octave band data, and it was also higher than the Satcon data in terms of sound power level. For that reason, Xantrex data was used for modelling the inverter clusters. The attenuation caused by the inverter enclosures/e-house and solar panels was not considered in the model.
- During the summer months, the solar facility will continue operating after 7:00 p.m., when the maximum sound levels established by MOE change from 45 dBA to 40 dBA. In order to provide

protection to the public during this period, sound barriers were located next to the two sources close to the POR, and minimum construction requirements for the noise barriers, as well as the absorption coefficients used in the noise model, were specified. The mitigation ensured that the sound pressure levels at the POR are maintained below the MOE requirements.

3. Conclusions

Based on the results obtained in this study, it is concluded that the sound pressure levels at the POR, following implementation of mitigation measures, will be below MOE requirements for Class 3 areas at night time (40 dBA), and well below the limits at day time (45 dBA).

