

2.2 RESULTS OF RECORDS REVIEW

The process of records review was used to collect data pertaining to the Upper Saugeen watershed and identify features that met the definition of a ‘water body’ as outlined in O. Reg. 359/09 and occurred within 120 m of the Project Location.

O. Reg. 359/09 defines a ‘water body’ as the following:

- Lakes are defined to include:
 - Kettle lakes - a depression formed by glacial action and permanently filled with water.
 - Lake Trout lakes - a lake that has been designated by the MNR for lake trout management.
- Permanent streams - those that continually flow during an average year.
- Intermittent streams - natural or artificial channels, other than dams, that carry water intermittently and are free from vegetation dominated by plant communities that require or prefer the presence of water or continuously saturated soil to survive.
- Seepage areas - sites where ground water emerges and the water table is present at the ground surface including springs.

Under O. Reg. 359/09, a “water body” is defined to include a lake (including kettle lakes and Lake Trout lakes), a permanent stream, an intermittent stream or a seepage area but does not include:

- grassed waterways,
- temporary channels for surface drainage, such as furrows or shallow channels that can be tilled and driven through,
- rock chutes and spillways,
- roadside ditches that do not contain a permanent or intermittent stream,
- temporarily ponded areas that are normally farmed,
- dugout ponds, or
- artificial bodies of water intended for the storage, treatment or recirculation of runoff from farm animal yards, manure storage facilities and sites and outdoor confinement areas

The following subsections summarize the information obtained through Records Review.

2.2.1 Description of Watershed

The Study Area is located wholly within the Upper Main Saugeen sub-watershed which drains 782 km² upstream of Walkerton Ontario. The watershed is predominantly agricultural (51%) and forested (35%) land, but also includes the urban communities of Hanover, Durham and Priceville. The project Study Area is located between Durham and Priceville; and, as such lies within the central portion of the watershed. Glacial deposits remaining after the last glaciation have determined the current physiography of the region to be predominantly kame moraine and spillway, with some drumlinized till plain in the north east and southerly extremes of the Study Area (SSWPC, 2011 and SVCA, 2008). Areas that are predominantly till will typically transmit water slowly because of the fine textured character, while spillways (glaciofluvial sand deposits) tend to conduct water more quickly because of their coarse-textured character (SSWPC, 2011).

2.2.2 Records Related to Lakes

No inland lakes were found within 120m of the Project Location. This information was collected through the use of NRVIS and LIO and confirmed in the Records Review report received from MNR for the Project (MNR, 2012).

2.2.3 Records Related to Trout Lakes

No Lake Trout lakes were found within 300m of the Project Location. This information was collected through the use of NRVIS and LIO and confirmed in the Records Review report received from MNR for the Project (MNR, 2012).

2.2.4 Records Related to Streams

Environment Canada

Stream flow data are available at the Water Survey of Canada website (<http://www.wsc.ec.gc.ca/staflo/>). Data was obtained for the period of 1976-2009 for station 02FC016 on the Saugeen River, located upstream of Durham and 1.5km west of the Study Area. This is the same station for which water quality data was available through the MOE. This station was considered similar to the reach of the Saugeen that lies within the Study Area boundary and as such the information was used to as an approximation to characterize stream flow typical of the river within 120m of the Project Location. The mean monthly discharge for station 02FC016 was determined to range from 1.09 m³/s (under low flow conditions) to 12.8 m³/s.

Department of Fisheries and Oceans (DFO)

A survey of the fish assemblages in the Saugeen River watershed was conducted by Fisheries and Oceans Canada (DFO) in 2005/06 (Marson et. al., 2009). A total of 25 stations, representing the main channel of the Saugeen and Rocky Saugeen Rivers as well as Black's Creek, Meux Creek and the Teeswater River, were sampled using backpack electrofishing, a boat electrofisher, or bag seigning. The station sampled within the study that represents the site closest to the Study Area of the current project was located approximately 10 km upstream of the Village of Priceville. Substrates at the station were dominated by cobble (50%) and gravel (30%), with the remainder comprised of boulder (10%), and sand (10%). In-stream vegetation was dominated by emergent (40%) and floating (30%) types and flow was documented as slow to medium. Fish species documented at the site included Blacknose Dace (*Rhinichthys atratulus*), Bluntnose Minnow (*Rimephales notatus*), Central Mudminnow (*Umbra limi*), Common Shiner (*Luxilus cornutus*), River Chub (*Nocomis micropogon*), and Rock Bass (*Ambloplites rupestris*).

Ministry of Environment (MOE)

Water quality data was obtained for a Provincial Water Quality Monitoring Network (PWQMN) station located upstream of Durham (Station ID #08012305702, located at Conc 2, Glenelg Twp). The station is located approximately 1.5 km west (downstream) of the Study Area. Water quality data suggests that water quality within the Saugeen River station is good and has been relatively consistent in this area over the past 8 years. A follow up conversation with Hugh Geurts (Surface Water Specialist, MOE) established that no additional information with regard to fish habitat or water quality was available from his office that would be more relevant and current than what was available through the PWQMN.

Ministry of Natural Resources (MNR)

Natural Resources and Values Information System (NRVIS) data layers available through the MNR were used to locate water body, watercourses and wetland features within the Study Area. NRVIS revealed many unnamed streams, wetlands and pond features within the Study Area; as well as, 2 Provincially Significant Wetlands (Beaver Meadow PSW and Topcliff PSW), the Saugeen River and Durham Creek (Figure 3). MNR provided data regarding fish species documented within the Saugeen River and one of its tributaries (Durham Creek). These water bodies are classified as cold water systems with Brown Trout, Brook Trout, Central Mudminnow and Slimy Sculpin documented (MNR Records Review Report is included in Appendix A).

Saugeen Valley Conservation Authority (SVCA)

The project Study Area is located in the Saugeen Valley Conservation Area. No digital data for watercourse mapping or regulation limits was available through the SVCA; however, SVCA publications were used to characterize wetlands, surface water quality and groundwater quality within the study area. The SVCA did not have any data available regarding the average high water mark for water bodies within the Study Area. Nathan Garland (SVCA Regulations Officer) conducted an initial screening of the project location to determine where turbines and access roads might be within the regulations limits (Appendix A).

Saugeen, Grey Sauble, Northern Bruce Peninsula Source Water Protection Committee

The Assessment Report for the Saugeen Valley Source Protection Area (SSWPC, 2011) was consulted for available mapping of watercourse thermal regimes, groundwater recharge, and location of biomonitoring sites. Mapping of areas with permits to take water and information regarding the geology and physiography of the region was also available through this publication (Appendix A).

Upper and Lower Tier Municipalities

County of Grey

The County of Grey GIS mapping tool was used to locate wetlands and watercourses, and document land use information for the Study Area. The County of Grey's Official Plan was also consulted for information pertaining to water resources in the Study Area. The County's Planning Department provided GIS data pertaining to hazard lands to help define regulation limits as they apply to watercourses.

Municipality of West Grey

The Municipality of West Grey was unable to provide any additional data for the Study Area as the boundary of the project is within the area governed by the County of Grey Official Plan. The Municipality's Official Plan only pertains to the urban centres of the Town of Durham and the Village of Neustadt.

2.2.5 Records Related to Seepage Areas

Mapping of significant groundwater recharge areas was obtained from the Assessment Report for the Saugeen Valley Source Protection Area (SSWPC, 2011); groundwater discharge areas were not included. The recharge area covers a large portion of the project Study Area (Appendix A). Records also indicate the presence of coldwater fisheries which are generally indicative of areas with significant groundwater discharge. Further work to determine seepage areas was required during site investigation of water features to locate evidence of groundwater discharge (e.g. low water temperatures under summer condition, presence of watercress, iron staining).

2.2.6 Species of Special Concern and Species at Risk

Species at Risk as identified under the federal Species at Risk Act (SARA, 2002) and the provincial Endangered Species Act (ESA, 2007) and with potential to occur within the study area were addressed under separate cover in the Species at Risk Report submitted for review to the Midhurst District MNR as per O.Reg. 359/09. Habitat within the study area for species of Special Concern or rare species was identified and addressed in the East Durham Wind Energy Centre Natural Heritage Assessment and identified as significant wildlife habitat (LGL, 2012).

2.3 SUMMARY OF RECORDS REVIEW RESULTS

Records Review for the Project determined that no lakes were located within 120m and no Lake Trout lakes were located within 300m of the Project Location. The project is not located within the Lake Simcoe Protection Area, the Oak Ridges Moraine Conservation Plan Area, the Great Lakes, or Niagara Escarpment.

The watercourses in the Study Area are generally classified as coldwater fisheries; including the Upper Main Saugeen River, Durham Creek and its tributaries. This suggests that seepage areas are prevalent within these water bodies and suggests that additional sites where discharge from shallow aquifers occurs are likely present within the Study Area. Potential areas of seepage will be further studied in Site Investigation. Many pond features were identified through Records Review and in many cases appeared to be dugout ponds on agricultural lands; these features will require further study to determine if they meet the definition of a 'water body' as outlined in O.Reg. 359/09. Many wetland features were identified within the Study Area, including provincially significant wetlands, and will also require further assessment in field surveys to determine if they qualify as water bodies under the definition of such in O.Reg. 359/09.

The Records Review process determined that a total of 35 water features as potentially within 120m of the Project Location. These features as summarized in Table 2 and displayed in Figure 3 were carried forward into Site Investigation.

Table 2: Summary of Types of Water Features to be Carried Forward to Site Investigation

Type of Water Feature	Number
Lakes (other than those managed for Lake Trout) with an average annual high water mark within 120m of the Project Location	0
Lake Trout lakes at or above development capacity and with an average annual high water mark within 300m of the Project Location	0
Streams with the average annual high water mark within 120m of the Project Location	35
Seepage Areas within 120m of the Project Location	0

3.0 SITE INVESTIGATION

Under the REA process, an applicant is required to confirm the presence and boundaries of water features at, or within, 120 metres of the project location (O. Reg. 359/09, Section 31). This process is referred to as Site Investigation, and requires the applicant to determine:

- whether the results of the analysis summarized in the Records Review prepared under subsection 30 (2) are correct or require correction, and identifying any required corrections;
- whether any additional water bodies exist, other than those identified in the Records Review;
- the boundaries, located within 120 metres of the project location, of any water body that was identified in the records review or the site investigation; and
- the distance from the project location to the boundary of any water body located within 120 metres of the project location.

For each water body identified during records review or site investigation, the applicant must also include information regarding the type of water body, plant and animal composition and the ecosystem of the land and water investigated.

The following subsections describe the Site Investigation process in more detail, including: the methodologies employed; the results obtained from field surveys and alternative investigations; corrections made to the information obtained through Records Review (including any new water features identified); and, identification of those features carried forward as water bodies and further addressed in the Water Body Report.

3.1 METHODS

The Site Investigation phase of the Project helped to inform the placement of project components such that the Project Location was not fully defined prior to this phase. For that reason, some water features were studied and are included in the results presented in the subsequent section that were determined ultimately not to be within 120m of the Project Location. Site investigations included study of the land and water components of all identified water features. Any corrections made to information obtained through records review are summarized in Section 3.2.1.

3.1.2 Alternative Site Investigations

All lands proposed to host infrastructure associated with the wind power project were accessible to field crews during site investigation; however, many non-participatory landowners denied access to their property. A land agent was retained by the proponent to secure land access from landowners where possible. Figure 2 defines the Project Location and indicates which properties were accessible to the field crew conducting the surveys. Where access to a feature was permitted by the landowner, investigations were conducted directly through field surveys; however, when access to properties was denied, an alternative site investigation was completed from the closest accessible property boundary, and further supported with analysis of orthographic images and resources listed as background information in Section 2.0. Most alternative site investigations occurred where underground electrical collection line is proposed within the existing road right of way. In these cases the water feature was characterized from roadside. A list of features assessed through this type of alternative site investigation is presented in Table 3. All results, including those for alternative site investigations, are presented in Section 3.2.

Table 3: Summary of Water Features entirely assessed through Alternative Site Investigation

Water Feature ID	Reason for Alternative Site Investigation	Description of Alternative Site Investigation	Date of Field Visits	Results of Alternative Investigation
W41 W42 W44 W51 W52	Property access was not permitted by landowner.	Use of orthographic images and background information as listed in Section 2.0 was referenced to determine structure and composition of feature. ELC methods were also employed where natural features were noted.	May 15, 2012 June 14, 2012	W41 – dugout pond W42 – wetland feature W44 – wetland feature W51 – dugout pond W52 – dugout pond

Note: other features where a specific portion of the feature was not accessible are indicated as such in Table 4 including associated details of the investigation conducted.

3.1.3 Water Assessments

The water features identified through records review and site investigation were studied to collect data regarding the type of water body, the plant and animal composition and the ecosystem of the water and the land surrounding the feature. Table 4 summarizes the names of the qualified individuals that conducted the surveys, as well as the dates, times and methodologies employed in order to characterize and inventory existing conditions within a minimum of 120m from the Project Location. There was considerable overlap in field visits intended as part of the NHA prepared for the project and the Water Assessment; therefore Table 4 documents the details of field visits from 2009 to 2012 that in some cases involved both natural and water features. All dates for wetland assessments are included in Table 4 as those studies lead to the classification of those areas as features other than water bodies, as defined under the REA process; however, wetland evaluation records and results are included exclusively within the NHA.

Data was not available through the SVCA for the average annual high water mark of water bodies within the Study Area; therefore the approach outlined in the Department of Fisheries and Oceans (DFO) Fish Habitat Management Program (2005) was applied to determine the location of the high water mark during field surveys. This was done by measuring the bankfull width of water feature as indicated by changes in the nature of the soil or vegetation along the bank gradient (e.g. erosion, scour mark, shelving, lack of terrestrial vegetation, etc.). In the case of streams where channels were deeply incised, the bankfull width approximated the wetted width of the watercourse.

All field investigations were conducted by qualified biologists and field technicians. Field notes from each site survey, and qualifications of the personnel conducting the surveys are included in Appendix C and D, respectively. Data collected depended on the type of feature identified; for example for features identified as dugout ponds during field surveys, data collection was limited to a photographic record and notes regarding wildlife since this type of feature is not addressed as a 'water body' under O.Reg. 359/09. In the case of features that met the definition of a water body under the REA process, data was collected as it pertained to the following:

- Mean bankfull and wetted width;
- Mean bankfull and wetted depth;
- Substrate size and composition;
- Bank stability;
- Instream cover;
- Water temperature;
- Evidence of seepage (watercress, iron staining, bubbling from substrate, etc.)
- Riparian vegetation community;
- Adjacent land use;
- Indicators of fish use (barriers to fish passage, fish observations at time of survey, fisheries records as obtained from MNR during Records Review); and
- Additional wildlife observed during site visits (as obtained from the East Durham Wind Energy Centre Natural Heritage Assessment, LGL 2012).

3.1.5 Vegetation Communities

The classification of vegetation communities according to the Ecological Land Classification (ELC) for Southern Ontario (Lee *et.al.*, 1998) was completed for all natural features within a minimum of 120m from the Project Location. Initially ELC was identified to a coarse community level through interpretation of aerial photographs. Through field investigations the initial classification was refined to ecosite; or, where possible, vegetation type. A unique numerical identity was assigned to each vegetation type and other important features to allow for ELC communities to be easily tracked through the NHA process. The ELC data collected was used to describe riparian vegetation and to characterize features ruled out as water bodies during the site investigation effort. Much of the effort to identify seepage areas within the Study Area was also done through ELC field surveys. The figures that delineate ELC boundaries and the table that describes the composition and attributes of each community are included in Appendix B.

Table 4: Details of Site Investigations conducted for East Durham Wind Energy Centre

Purpose	Location	Summary of Methods (Field notes included in Appendix C)	If investigation was conducted on site		Sources & Dates of Information Used/Applied	Names of Investigators (see Appendix D for full qualifications)
			Date Time Total Hours	Weather		
Reconnaissance of Water Features	General study area bounded by Concession 4 Road, Sideroad 50, Stone Hill Rd. and Camp Oliver Rd.	Comparison of data layers and existing orthoimagery with observed features in the field. Evidence of wildlife use also noted.	Nov.19, 2009 1130-1700 7.5 hours	Mean temperature: 5.8°C	Aerial photography NHIC records (2009) LIO/NRVIS data layers (2009)	AHF, JCN
Investigation of Natural Features, Wildlife Habitat (including aquatic habitat) and Vegetation Communities ELC	Along County Rd. 4 between Camp Oliver Rd. & Baptist Church Rd. LT 28-30 Con 2 N of Durham Rd. GLENELG Pt LT 21-27 Con 1 N of Durham Rd. GLENELG PT LT 31-33 Con 1 N of Durham Rd. GLENELG PT LT 34 CON 1 N of Durham Rd GLENELG	Area searches for evidence of wildlife (scat, dens, nests, tracks, egg masses, etc.) within 120m of project components. Documentation of botanical species and classification of vegetation communities using Ecological Land Classification (ELC) for Southern Ontario.	April 28, 2011 10:30 – 17:00 17 hours	Temperature: : +1.7-4.8°C ⁱ Wind: 28-44 km/hr ¹	Aerial photography Ecological Land Classification for Southern Ontario: First Approximation and Its Application. 1998 Lee at al. Significant Wildlife Habitat Technical Guide, OMNR 2000	JCN, VLK

Purpose	Location	Summary of Methods (Field notes included in Appendix C)	If investigation was conducted on site		Sources & Dates of Information Used/Applied	Names of Investigators (see Appendix D for full qualifications)
			Date Time Total Hours	Weather		
Investigation of Natural Features, Wildlife Habitat (including aquatic habitat) and Vegetation Communities ELC	LT 35 Con 1 S of Durham Rd. GLENELG LT 39-40; PT LT 37-38 CON 1 N of Durham Rd GLENELG	Area searches for evidence of wildlife (scat, dens, nests, tracks, etc.) within 120m of project components. Documentation of botanical species and classification of vegetation communities using Ecological Land Classification (ELC) for Southern Ontario. Surveys for basking reptiles.	May 12, 2011 10:30 – 17:00 25.5 hours	Temperature: +14.5- 21°C ⁱ Wind: 9-17 km/hr ⁱ	Aerial photography Ecological Land Classification for Southern Ontario: First Approximation and Its Application. 1998 Lee et al. Significant Wildlife Habitat Technical Guide, OMNR 2000	JCN, VLK, AHF
Frog Monitoring (amphibian breeding)	LT 21-22 Con 2 N of Durham Rd. GLENELG Pt LT 21-27 Con 1 N of Durham Rd. GLENELG PT LT 31-33 Con 1 N of Durham Rd. GLENELG LT 35 Con 1 S of Durham Rd. GLENELG LT 39-40; PT LT 37-38 CON 1 N of Durham Rd GLENELG	Aural survey for 3 minutes at point count stations following the Marsh Monitoring Program (MMP) protocol for amphibian surveys. Calls were classified according to MMP as level 1, 2 or 3. This survey was conducted at air temperatures of 10C. Monitoring stations were located in close proximity to marsh and open water aquatic habitat.	June 2, 2011 21:30 – 24:00 5 hours	Temperature: 10°C Calm, clear, cool Wind:15-20 km/hr ⁱ	Marsh Monitoring Program protocol as viewed at: http://www.bsc-eoc.org	MJO, GH

Purpose	Location	Summary of Methods (Field notes included in Appendix C)	If investigation was conducted on site		Sources & Dates of Information Used/Applied	Names of Investigators (see Appendix D for full qualifications)
			Date Time Total Hours	Weather		
Frog Monitoring (amphibian breeding)	LT 21-22 Con 2 N of Durham Rd. GLENELG Pt LT 21-27 Con 1 N of Durham Rd. GLENELG PT LT 31-33 Con 1 N of Durham Rd. GLENELG LT 35 Con 1 S of Durham Rd. GLENELG LT 39-40; PT LT 37-38 CON 1 N of Durham Rd GLENELG	Aural survey for 3 minutes at point count stations following the Marsh Monitoring Program (MMP) protocol for amphibian surveys. Calls were classified according to MMP as level 1, 2 or 3. This survey was conducted at air temperatures of 14C to 23C. Monitoring stations were located in close proximity to marsh and open water aquatic habitat.	June 15, 2011 21:30 – 24:00 5 hours	Temperature: +14 to 23°C Wind: 2-6 km/hr ⁱ Calm, clear Full moon	Marsh Monitoring Program protocol as viewed at: http://www.bsc-eoc.org/volunteer/glmm p	MJO, JV
Investigation of Natural Features, Wildlife Habitat (including aquatic habitat) and Vegetation Communities ELC	LT 20 Con 1 S of Durham Rd. GLENELG LT 46 Con 1 N of Durham Rd. GLENELG	Area searches for evidence of wildlife (scat, dens, nests, tracks, etc.) within 120m of project components. Documentation of botanical species and classification of vegetation communities using Ecological Land Classification (ELC) for Southern Ontario.	Aug. 31, 2011 10:30 – 18:00 7.5 hours	Temperature: +19 to 24°C ⁱ Wind: 6-11 km/hr ⁱ	Aerial photography Ecological Land Classification for Southern Ontario: First Approximation and Its Application. 1998 Lee et al. Significant Wildlife Habitat Technical Guide, OMNR 2000	JCN, VLK

Purpose	Location	Summary of Methods (Field notes included in Appendix C)	If investigation was conducted on site		Sources & Dates of Information Used/Applied	Names of Investigators (see Appendix D for full qualifications)
			Date Time Total Hours	Weather		
Investigation of Natural Features, Wildlife Habitat (including aquatic habitat) and Vegetation Communities ELC	LT 21-22 Con 2 N of Durham Rd. GLENELG Pt LT 21-27 Con 1 N of Durham Rd. GLENELG PT LT 34 CON 1 N of Durham Rd GLENELG	Area searches for evidence of wildlife (scat, dens, nests, tracks, etc.) within 120m of project components. Documentation of botanical species and classification of vegetation communities using Ecological Land Classification (ELC) for Southern Ontario.	Sept. 1, 2011 08:00 – 17:00 9 hours	Temperature: +18 to 24.5°C ⁱ Wind: 4-11 km/hr ⁱ	Aerial photography Ecological Land Classification for Southern Ontario: First Approximation and Its Application. 1998 Lee at al. Significant Wildlife Habitat Technical Guide, OMNR 2000	JCN, VLK
Investigation of water features (W49), vegetation communities (ELC).	LT 43-45 CON 1 S of Durham Rd GLENELG	Documentation of botanical species and classification of vegetation communities using Ecological Land Classification (ELC) for Southern Ontario.	Feb. 29, 2012 09:30 – 16:00 6.5 hours	Temperature: -2.5 to 0°C ⁱ Wind: 11-24 km/hr ⁱ	Aerial photography Ecological Land Classification for Southern Ontario: First Approximation and Its Application. 1998 Lee at al.	JCN
Investigation of water features (W25, W35 and W36), vegetation communities (ELC).	LT 21-22 Con 2 N of Durham Rd. GLENELG LT 39-40; PT LT 37-38 CON 1 N of Durham Rd GLENELG	Documentation of botanical species and classification of vegetation communities using Ecological Land Classification (ELC) for Southern Ontario.	March 1, 2012 09:00 – 15:00 6 hours	Temperature: -0.5 to +1°C ⁱ Wind: 9-15 km/hr ⁱ	Aerial photography Ecological Land Classification for Southern Ontario: First Approximation and Its Application. 1998 Lee at al.	JCN

Purpose	Location	Summary of Methods (Field notes included in Appendix C)	If investigation was conducted on site		Sources & Dates of Information Used/Applied	Names of Investigators (see Appendix D for full qualifications)
			Date Time Total Hours	Weather		
Investigation of natural and water features (W8, W46), wildlife habitat, and communities.	LT 46 Con 1 N of Durham Rd. GLENELG LT 20 Con 1 S of Durham Rd. GLENELG LT 47 CON 2 S of Durham Rd. GLENELG	Area searches for evidence of wildlife (scat, dens, nests, tracks, etc.) within 120m of project components.	March 8, 2012 10:20- 17:00 6.7 hours	Temperature: +0.5 to 9.5°C ⁱ Wind: 17-24 km/hr ⁱ	Aerial photography Significant Wildlife Habitat Technical Guide (OMNR, 2000)	AHF
Investigation of Natural Features, Wildlife Habitat (including aquatic habitat) and Vegetation Communities ELC	LT 43-45 CON 1 S of Durham Rd GLENELG LT 46 Con 1 N of Durham Rd. GLENELG LT 28-30 Con 2 N of Durham Rd. GLENELG PT LT 31-33 Con 1 N of Durham Rd. GLENELG PT LT 34 CON 1 N of Durham Rd GLENELG LT 43-45 CON 1 S of Durham Rd GLENELG PT LT 23-25 Con 4 N of Durham Rd. GLENELG	Documentation of botanical species and classification of vegetation communities using Ecological Land Classification (ELC) for Southern Ontario. Surveys for basking reptiles.	March 22, 2012 10:00 – 18:00 16 hours	Temperature: +20 to 25°C ⁱ Wind: 2-15 km/hr ⁱ	Aerial photography Ecological Land Classification for Southern Ontario: First Approximation and Its Application. 1998 Lee et al.	JCN, VLK
Investigation of natural and water (W8, W46) features and wildlife habitat.	LT 39-40; PT LT 37-38 CON 1 N of Durham Rd GLENELG	Area searches for evidence of wildlife (scat, dens, nests, tracks, etc.) within 120m of project components. Searches for amphibian egg masses in woodland ponds, frogs in wetlands and water bodies, and basking reptiles.	May 15, 2012 10:00- 15:30 5.5 hours	Temperature: +20.5 to 23.5°C ⁱ Wind: 15-22 km/hr ⁱ	Aerial photography Significant Wildlife Habitat Technical Guide (OMNR, 2000)	AHF

Purpose	Location	Summary of Methods (Field notes included in Appendix C)	If investigation was conducted on site		Sources & Dates of Information Used/Applied	Names of Investigators (see Appendix D for full qualifications)
			Date Time Total Hours	Weather		
Investigation of natural features, wildlife habitat, vegetation communities (ELC), and water bodies.	LT 47 CON 2 S of Durham Rd. GLENELG LT 43-45 CON 1 S of Durham Rd GLENELG PT LT 23-25 Con 4 N of Durham Rd. GLENELG LT 35 Con 1 S of Durham Rd. GLENELG Water bodies along County Rd 4 from Baptist Church Rd to Artemesia/Glenelg Townline	Area searches for evidence of wildlife (scat, dens, nests, tracks, etc.) within 120m of project components. Documentation of botanical species and classification of vegetation communities using Ecological Land Classification (ELC) for Southern Ontario. Investigations of water bodies to document morphology, substrate, and thermal regime and characterize fish habitat. Surveys for basking reptiles.	May 15, 2012 10:00-17:45 15.5 hours	Temperature: +20.5 to 23.5°C ¹ Wind: 15-22 km/hr ¹	Aerial photography Ecological Land Classification for Southern Ontario: First Approximation and Its Application. 1998 Lee et al. Significant Wildlife Habitat Technical Guide, OMNR 2000 Adapted Ontario Streams Assessment Protocol (Stanfield, 2010)	JCN, LKR

Purpose	Location	Summary of Methods (Field notes included in Appendix C)	If investigation was conducted on site		Sources & Dates of Information Used/Applied	Names of Investigators (see Appendix D for full qualifications)
			Date Time Total Hours	Weather		
Investigation of natural features, wildlife habitat, vegetation communities (ELC), and water bodies.	LT 35 Con 1 S of Durham Rd. GLENELG LT 39-40; PT LT 37-38 CON 1 N of Durham Rd GLENELG LT 43-45 CON 1 S of Durham Rd GLENELG Water bodies along County Rd 4 from Baptist Church Rd to Artemesia/Glenelg Townline	Area searches for evidence of wildlife (scat, dens, nests, tracks, etc.) within 120m of project components. Documentation of botanical species and classification of vegetation communities using Ecological Land Classification (ELC) for Southern Ontario. Investigations of water bodies to document morphology, substrate, and thermal regime and characterize fish habitat. Surveys for basking reptiles.	May 16, 2012 08:00-14:30 13 hours	Temperature: +5 to 10.5°C ⁱ Wind: 15-24 km/hr ⁱ Fog present	Aerial photography Ecological Land Classification for Southern Ontario: First Approximation and Its Application. 1998 Lee at al. Significant Wildlife Habitat Technical Guide, OMNR 2000 Adapted Ontario Streams Assessment Protocol (Stanfield, 2010)	JCN, LKR

Purpose	Location	Summary of Methods (Field notes included in Appendix C)	If investigation was conducted on site		Sources & Dates of Information Used/Applied	Names of Investigators (see Appendix D for full qualifications)
			Date Time Total Hours	Weather		
Frog Monitoring (amphibian breeding)	LT 39-40; PT LT 37-38 CON 1 N of Durham Rd GLENELG LT 43-45 CON 1 S of Durham Rd GLENELG	Aural survey for 3 minutes at point count stations following the Marsh Monitoring Program (MMP) protocol for amphibian surveys. Calls were classified according to MMP as level 1, 2 or 3. This survey was conducted at air temperatures above 17°C. Monitoring stations were located in close proximity to marsh and open water aquatic habitat.	May 24, 2012 20:30 – 24:00 7 hours	Temperature: +20.5 to 23°C ⁱ Wind: 9-11 km/hr ⁱ	Marsh Monitoring Program protocol as viewed at: http://www.bsc-eoc.org/volunteer/glmm p	AHF, LKR
Species at Risk (Birds), general wildlife, watercourses and associated valleylands	LT 21-22 Con 2 N of Durham Rd. GLENELG PT LT 31-33 Con 1 N of Durham Rd. GLENELG PT LT 34 CON 1 N of Durham Rd GLENELG LT 39-40; PT LT 37-38 CON 1 N of Durham Rd GLENELG LT 20 Con 1 S of Durham Rd. GLENELG Pt LT 21-27 Con 1 N of Durham Rd. GLENELG Water bodies along Concession 4 Rd from County Rd. 23 to turbine 15 property.	Investigations of water bodies to document morphology, substrate, and thermal regime and characterize fish habitat. Area searches for evidence of wildlife (scat, dens, nests, tracks, etc.) within 120m of project components. Searches for frogs in wetlands and water bodies, and basking reptiles.	June 14, 2012 06:15-13:00 20.25 hours	Temperature: +11 to 19°C Wind scale 2 (~6-11 km/hr) Clear skies	SAR survey protocols as discussed with MNR Midhurst SAR Biologist. Aerial photography Significant Wildlife Habitat Technical Guide, OMNR 2000 Adapted Ontario Streams Assessment Protocol (Stanfield, 2010)	AHF, EEB, LKR

Purpose	Location	Summary of Methods (Field notes included in Appendix C)	If investigation was conducted on site		Sources & Dates of Information Used/Applied	Names of Investigators (see Appendix D for full qualifications)
			Date Time Total Hours	Weather		
Species at Risk (Birds), general wildlife, watercourses and associated valleylands	LT 28-30 Con 2 N of Durham Rd. GLENELG LT 43-45 CON 1 S of Durham Rd GLENELG PT LT 23-25 Con 4 N of Durham Rd. GLENELG LT 47 CON 2 S of Durham Rd. GLENELG LT 35 Con 1 S of Durham Rd. GLENELG Water bodies along Concession 4 Rd from County Rd. 23 to turbine 15 property.	Investigations of water bodies to document morphology, substrate, and thermal regime and characterize fish habitat. Area searches for evidence of wildlife (scat, dens, nests, tracks, etc.) within 120m of project components. Searches for frogs in wetlands and water bodies, and basking reptiles.	June 15, 2012 06:20-13:00 13.3 hours	Temperature: +22 to 26°C ⁱ Wind: 19-30 km/hr ⁱ	SAR survey protocols as discussed with MNR Midhurst SAR Biologist. Aerial photography Significant Wildlife Habitat Technical Guide, OMNR 2000 Adapted Ontario Streams Assessment Protocol (Stanfield, 2010)	AHF, LKR
Species at Risk (Birds), general wildlife, watercourses and associated valleylands	LT 28-30 Con 2 N of Durham Rd. GLENELG LT 39-40; PT LT 37-38 CON 1 N of Durham Rd GLENELG PT LT 23-25 Con 4 N of Durham Rd. GLENELG LT 46 Con 1 N of Durham Rd. GLENELG LT 47 CON 2 S of Durham Rd. GLENELG Pt LT 21-27 Con 1 N of Durham Rd. GLENELG Water bodies along Baptist Church Rd. from Southline to Northline.	Investigations of water bodies to document morphology, substrate, and thermal regime and characterize fish habitat. Area searches for evidence of wildlife (scat, dens, nests, tracks, etc.) within 120m of project components. Searches for frogs in wetlands and water bodies, and basking reptiles.	June 22, 2012 06:00-9:30 10.5 hours	Temperature: +16 to 20°C Wind scale 2-3 (~6-13 km/hr) Fog early, then clear	SAR survey protocols as discussed with MNR Midhurst SAR Biologist. Aerial photography Significant Wildlife Habitat Technical Guide, OMNR 2000 Adapted Ontario Streams Assessment Protocol (Stanfield, 2010)	AHF, LKR, EEB

Purpose	Location	Summary of Methods (Field notes included in Appendix C)	If investigation was conducted on site		Sources & Dates of Information Used/Applied	Names of Investigators (see Appendix D for full qualifications)
			Date Time Total Hours	Weather		
Investigation of natural features, wildlife habitat, vegetation communities (ELC), plant and bird Species at Risk, water bodies and valleylands.	LT 28-30 Con 2 N of Durham Rd. GLENELG PT LT 31-33 Con 1 N of Durham Rd. GLENELG PT LT 34 CON 1 N of Durham Rd GLENELG LT 43-45 CON 1 S of Durham Rd GLENELG	Systematic walking search looking for plant Species at Risk within 25 m of project components. Documentation of wildlife use (area searches) and ELC on accessible properties. Investigations of water bodies to document morphology, substrate, and thermal regime and characterize fish habitat (W22). Documentation of botanical species and classification of vegetation communities using Ecological Land Classification (ELC) for Southern Ontario.	June 27, 2012 07:00 – 16:00 18 hours	Temperature: +15 to 24°C ⁱ Wind: 6-15 km/hr ⁱ	Aerial photography Ecological Land Classification for Southern Ontario: First Approximation and Its Application. 1998 Lee at al. Significant Wildlife Habitat Technical Guide, OMNR 2000 Adapted Ontario Streams Assessment Protocol (Stanfield, 2010)	JCN, MJO

Purpose	Location	Summary of Methods (Field notes included in Appendix C)	If investigation was conducted on site		Sources & Dates of Information Used/Applied	Names of Investigators (see Appendix D for full qualifications)
			Date Time Total Hours	Weather		
Species at Risk (Birds), General wildlife, watercourses	LT 28-30 Con 2 N of Durham Rd. GLENELG LT 39-40; PT LT 37-38 CON 1 N of Durham Rd GLENELG LT 47 CON 2 S of Durham Rd. GLENELG	Species at Risk surveys were conducted in consultation with Midhurst District MNR SAR Biologist. Investigations of water bodies using an adapted Ontario Streams Assessment Protocol (Stanfield, 2010) to document morphology, substrate, and thermal regime and characterize fish habitat. Area searches for evidence of wildlife (scat, dens, nests, tracks, etc.) within 120m of project components.	June 29, 2012 6:10-10:50 9.25 hours	Temperature: +16.5 to 20.5°C Wind scale 2-3 (~6-19 km/hr) Clear skies	SAR survey protocols as discussed with MNR Midhurst SAR Biologist. Aerial photography Significant Wildlife Habitat Technical Guide, OMNR 2000 Adapted Ontario Streams Assessment Protocol (Stanfield, 2010)	DTS, EEB

Purpose	Location	Summary of Methods (Field notes included in Appendix C)	If investigation was conducted on site		Sources & Dates of Information Used/Applied	Names of Investigators (see Appendix D for full qualifications)
			Date Time Total Hours	Weather		
Species at Risk (Birds), General wildlife, watercourses and associated valleylands	PT LT 23-25 Con 4 N of Durham Rd. GLENELG Pt LT 21-27 Con 1 N of Durham Rd. GLENELG Watercourses along Concession 4 Road	Species at Risk surveys were conducted in consultation with Midhurst District MNR SAR Biologist. Investigations of water bodies using an adapted Ontario Streams Assessment Protocol (Stanfield, 2010) to document morphology, substrate, thermal regime and characterize fish habitat. Area searches for evidence of wildlife (scat, dens, nests, tracks, etc.) within 120m of project components.	July 5, 2012 06:15 – 09:30 6.5 hours	Temperature: +18 to 28°C ⁱ Wind: 2-6 km/hr ⁱ	SAR survey protocols as discussed with MNR Midhurst SAR Biologist. Aerial photography Significant Wildlife Habitat Technical Guide, OMNR 2000 Adapted Ontario Streams Assessment Protocol (Stanfield, 2010)	AHF, LKR

Purpose	Location	Summary of Methods (Field notes included in Appendix C)	If investigation was conducted on site		Sources & Dates of Information Used/Applied	Names of Investigators (see Appendix D for full qualifications)
			Date Time Total Hours	Weather		
Surveys for plant Species at Risk, Wildlife, ELC and wetlands	PT LT 23-25 Con 4 N of Durham Rd. GLENELG	Systematic walking search looking for plant Species at Risk within 25 m of project components. Documentation of wildlife use (area searches) and ELC on accessible properties. Documentation of botanical species and classification of vegetation communities using Ecological Land Classification (ELC) for Southern Ontario. Surveys for basking reptiles and wildlife. Area searches for evidence of wildlife (scat, dens, nests, tracks, etc.) within 120m of project components.	July 11, 2012 08:00 - 15:30 15 hours	Temperature: +21 to 28.5°C ⁱ Wind: 2-9 km/hr ⁱ	Aerial photography Ecological Land Classification for Southern Ontario: First Approximation and Its Application. 1998 Lee et al. Significant Wildlife Habitat Technical Guide, OMNR 2000 Ontario Wetland Evaluation System 3 rd Edition. Southern Manual. 1993. OMNR #50254-1	JCN, VLK

Purpose	Location	Summary of Methods (Field notes included in Appendix C)	If investigation was conducted on site		Sources & Dates of Information Used/Applied	Names of Investigators (see Appendix D for full qualifications)
			Date Time Total Hours	Weather		
Species at Risk (Birds) General wildlife/watercourse (W18)	LT 20 Con 1 S of Durham Rd. GLENELG LT 47 CON 2 S of Durham Rd. GLENELG	Investigations of water bodies using an adapted Ontario Streams Assessment Protocol (Stanfield, 2010) to document morphology, substrate, and thermal regime and characterize fish habitat. Species at Risk surveys were conducted in consultation with Midhurst District MNR SAR Biologist. Area searches for evidence of wildlife (scat, dens, nests, tracks, etc.) within 120m of project components.	July 13, 2012 06:00 – 11:15 10.5 hours	Temperature: +17- 28.5 °C Wind scale 0 (~ 0-2 km/hr) Clear skies	SAR survey protocols as discussed with MNR Midhurst SAR Biologist. Aerial photography Significant Wildlife Habitat Technical Guide, OMNR 2000 Adapted Ontario Streams Assessment Protocol (Stanfield, 2010)	AHF, EEB

Purpose	Location	Summary of Methods (Field notes included in Appendix C)	If investigation was conducted on site		Sources & Dates of Information Used/Applied	Names of Investigators (see Appendix D for full qualifications)
			Date Time Total Hours	Weather		
ELC, general wildlife and Wetland Evaluation	PT LT 23-25 Con 4 N of Durham Rd. GLENELG LT 43-45 CON 1 S of Durham Rd GLENELG Roadside survey for ELC and plant Species at Risk along County Road 23 from County Road 4 to Concession 4 Road	Documentation of botanical species and classification of vegetation communities using Ecological Land Classification (ELC) for Southern Ontario. Collection of data pertaining to wetland evaluations as per the Ontario Wetland Evaluation System for Southern Ontario. Surveys for basking reptiles and wildlife. Area searches for evidence of wildlife (scat, dens, nests, tracks, etc.) within 120m of project components.	July 18, 2012 10:30 – 17:00 17 hours	Temperature: +23.5 to 27.5°C ⁱ Wind: 6-11 km/hr ⁱ	Aerial photography Ecological Land Classification for Southern Ontario: First Approximation and Its Application. 1998 Lee at al. Ontario Wetland Evaluation System 3 rd Edition. Southern Manual. 1993. OMNR #50254-1 Significant Wildlife Habitat Technical Guide, OMNR 2000	JCN, VLK

Purpose	Location	Summary of Methods (Field notes included in Appendix C)	If investigation was conducted on site		Sources & Dates of Information Used/Applied	Names of Investigators (see Appendix D for full qualifications)
			Date Time Total Hours	Weather		
ELC, general wildlife and Wetland Evaluation	PT LT 23-25 Con 4 N of Durham Rd. GLENELG LT 43-45 CON 1 S of Durham Rd GLENELG Roadside survey for ELC and plant Species at Risk along County Road 23 from County Road 4 to Concession 4 Road.	Documentation of botanical species and classification of vegetation communities using Ecological Land Classification (ELC) for Southern Ontario. Collection of data pertaining to wetland evaluations as per the Ontario Wetland Evaluation System for Southern Ontario. Surveys for basking reptiles and wildlife. Area searches for evidence of wildlife (scat, dens, nests, tracks, etc.) within 120m of project components.	July 19, 2012 08:00 – 16:00 16 hours	Temperature: +18.5 to 21.5°C ⁱ Wind: 11-17 km/hr ⁱ	Aerial photography Ecological Land Classification for Southern Ontario: First Approximation and Its Application. 1998 Lee et al. Ontario Wetland Evaluation System 3 rd Edition. Southern Manual. 1993. OMNR #50254-1 Significant Wildlife Habitat Technical Guide, OMNR 2000	JCN, VLK
Species at Risk birds, general wildlife, basking turtles, ponds.	LT 28-30 Con 2 N of Durham Rd. GLENELG LT 39-40; PT LT 37-38 CON 1 N of Durham Rd GLENELG LT 47 CON 2 S of Durham Rd. GLENELG	Species at Risk surveys were conducted in consultation with Midhurst District MNR SAR Biologist. Surveys for basking reptiles and wildlife.	July 24, 2012 07:00–11:35 9 hours	Temperature: +20 to 22.5°C ⁱ Wind: 9-20 km/hr ⁱ	SAR survey protocols as discussed with MNR Midhurst SAR Biologist. Aerial photography Significant Wildlife Habitat Technical Guide, OMNR 2000	AHF, LKR

Purpose	Location	Summary of Methods (Field notes included in Appendix C)	If investigation was conducted on site		Sources & Dates of Information Used/Applied	Names of Investigators (see Appendix D for full qualifications)
			Date Time Total Hours	Weather		
ELC, general wildlife and Wetland Evaluation	LT 35 Con 1 S of Durham Rd. GLENELG LT 47 CON 2 S of Durham Rd. GLENELG	Documentation of botanical species and classification of vegetation communities using Ecological Land Classification (ELC) for Southern Ontario. Collection of data pertaining to wetland evaluations as per the Ontario Wetland Evaluation System for Southern Ontario. Surveys for basking reptiles and wildlife. Area searches for evidence of wildlife (scat, dens, nests, tracks, etc.) within 120m of project components.	July 24, 2012 10:30 – 15:00 13 hours	Temperature: +21 to 23°C ⁱ Wind: 15-20 km/hr ⁱ	Aerial photography Ecological Land Classification for Southern Ontario: First Approximation and Its Application. 1998 Lee et al. Ontario Wetland Evaluation System 3 rd Edition. Southern Manual. 1993. OMNR #50254-1 Significant Wildlife Habitat Technical Guide, OMNR 2000	JCN, VLK

Purpose	Location	Summary of Methods (Field notes included in Appendix C)	If investigation was conducted on site		Sources & Dates of Information Used/Applied	Names of Investigators (see Appendix D for full qualifications)
			Date Time Total Hours	Weather		
Species at Risk birds, general wildlife, watercourses and associated valleylands	LT 28-30 Con 2 N of Durham Rd. GLENELG Water bodies along County Rd. 4, Southline, Boot Jack Ranch Rd. and Concession 4 Road.	Species at Risk surveys were conducted in consultation with Midhurst District MNR SAR Biologist. Investigations of water bodies using an adapted Ontario Streams Assessment Protocol (Stanfield, 2010) to document morphology, substrate, and thermal regime and characterize fish habitat. Area searches for evidence of wildlife (scat, dens, nests, tracks, etc.) within 120m of project components.	August 1, 2012 06:30 – 10:45 8.5 hours	Temperature: +19 to 23.5°C ⁱ Wind: 6-13 km/hr ⁱ	SAR survey protocols as discussed with MNR Midhurst SAR Biologist. Aerial photography Ecological Land Classification for Southern Ontario: First Approximation and Its Application. 1998 Lee at al. Ontario Wetland Evaluation System 3 rd Edition. Southern Manual. 1993. OMNR #50254-1 Significant Wildlife Habitat Technical Guide, OMNR 2000	LKR, AHF

Purpose	Location	Summary of Methods (Field notes included in Appendix C)	If investigation was conducted on site		Sources & Dates of Information Used/Applied	Names of Investigators (see Appendix D for full qualifications)
			Date Time Total Hours	Weather		
Alternative Site Investigation of wetland features along Southline, ELC and wetland surveys on other accessible properties.	LT 35 Con 1 S of Durham Rd. GLENELG LT 47 CON 2 S of Durham Rd. GLENELG Roadside survey along Southline at T13, north on Boot Jack Ranch Road to County Road 4	Documentation of botanical species and classification of vegetation communities using Ecological Land Classification (ELC) for Southern Ontario. Collection of data pertaining to wetland evaluations as per the Ontario Wetland Evaluation System for Southern Ontario. Surveys for basking reptiles and wildlife. Area searches for evidence of wildlife (scat, dens, nests, tracks, etc.) within 120m of project components.	August 8, 2012 10:30 – 18:00 15 hours	Temperature: +22.5 to 26°C ⁱ Wind: 9-13 km/hr ⁱ	Aerial photography Ecological Land Classification for Southern Ontario: First Approximation and Its Application. 1998 Lee at al. Significant Wildlife Habitat Technical Guide, OMNR 2000	JCN, VLK

Purpose	Location	Summary of Methods (Field notes included in Appendix C)	If investigation was conducted on site		Sources & Dates of Information Used/Applied	Names of Investigators (see Appendix D for full qualifications)
			Date Time Total Hours	Weather		
Species at Risk, ELC, general wildlife and wetland evaluations	LT 21-22 Con 2 N of Durham Rd. GLENELG PT LT 23-25 Con 4 N of Durham Rd. GLENELG LT 28-30 Con 2 N of Durham Rd. GLENELG LT 43-45 CON 1 S of Durham Rd GLENELG	Systematic walking search looking for plant Species at Risk within 25 m of project components. Documentation of wildlife use (area searches) and classification of vegetation communities using Ecological Land Classification (ELC) for Southern Ontario. Collection of data pertaining to wetland evaluations as per the Ontario Wetland Evaluation System for Southern Ontario. Surveys for basking reptiles and wildlife. Area searches for evidence of wildlife (scat, dens, nests, tracks, etc.) within 120m of project components.	August 9, 2012 08:00 – 15:30 15 hours	Temperature: +16 to 18.5°C ⁱ Wind: 2-9 km/hr ⁱ	Aerial photography Ecological Land Classification for Southern Ontario: First Approximation and Its Application. 1998 Lee et al. Significant Wildlife Habitat Technical Guide, OMNR 2000. Ontario Wetland Evaluation System 3 rd Edition. Southern Manual. 1993. OMNR #50254-1	JCN, VLK

Purpose	Location	Summary of Methods (Field notes included in Appendix C)	If investigation was conducted on site		Sources & Dates of Information Used/Applied	Names of Investigators (see Appendix D for full qualifications)
			Date Time Total Hours	Weather		
Alternative Site Investigation of wetland features along Concession 4 Road	Roadside survey along Concession 4 Road from County Road 23 to T15 property.	Documentation of botanical species and classification of vegetation communities using Ecological Land Classification (ELC) for Southern Ontario by roadside survey. Surveys for basking reptiles and wildlife.	August 10, 2012 07:00 – 15:00 16 hours	Temperature: +16 to 20°C ⁱ Wind: 14-19 km/hr ⁱ	Aerial photography Ecological Land Classification for Southern Ontario: First Approximation and Its Application. 1998 Lee at al. Significant Wildlife Habitat Technical Guide, OMNR 2000	JCN, VLK

Purpose	Location	Summary of Methods (Field notes included in Appendix C)	If investigation was conducted on site		Sources & Dates of Information Used/Applied	Names of Investigators (see Appendix D for full qualifications)
			Date Time Total Hours	Weather		
Field verification of ELC for vegetation communities and screening of property for potential wildlife habitat and natural features (water bodies, wetlands, valleylands, and woodlands).	LT 28 Con 1 N of Durham Rd. GLENELG LT 46 CON 1 N of Durham Rd. GLENELG	<p>Documentation of vegetation communities was completed according to the Ecological Land Classification for Southern Ontario (Lee et al. 1998).</p> <p>OWES trained biologist screened area for any additional wetland features.</p> <p>Screening of area within 120m of project components for natural features (water bodies, valleylands, and woodlands).</p> <p>Area searches for wildlife or signs of wildlife habitat (presence of scat, nests, tracks, etc.) were conducted.</p> <p>Significant Wildlife Habitat Technical Guide and Ecoregion Criteria Schedule 6E were used to screen for candidate SWH.</p>	October 24, 2012 10:30 – 13:30 3 hours	Temperature = 8°C No precipitation, overcast, fog Wind Speed (km): 15-22	<p>Aerial photography</p> <p>Ecological Land Classification for Southern Ontario: First Approximation and Its Application. 1998 Lee et al.</p> <p>Significant Wildlife Habitat Technical Guide, OMNR 2000</p> <p>Ontario Wetland Evaluation System 3rd Edition. Southern Manual. 1993.</p> <p>Ecological Land Classification for Southern Ontario (Lee et al. 1998).</p>	JCN Complete qualifications included in Appendix B

Notes: i) Data obtained from Environment Canada website (www.climate.weatheroffice.gc.ca), Historical Weather Data-Mount Forest Station and field notes (Appendix B).
ii) Personnel codes for LGL Staff (see Appendix C for full list of qualifications):

AHF	Allison Featherstone
DTS	Dana Summach
EEB	Erin Blenkhorn
GH	Geoff Hughes
JCN	Jennifer Noël
JV	Judson Venier
LKR	Lynette Renzetti
MJO	Martin O'Halloran
VLK	Victoria Kennedy

Project Component	Lot and Concession Number of Associated Parcels	Project Component	Lot and Concession Number of Associated Parcels
Substation	LT 28 Con 1 N of Durham Rd. GLENELG	Turbine 8 and access road	LT 39-40; PT LT 37-38 CON 1 N of Durham Rd GLENELG
Construction Laydown and Met tower	LT 46 Con 1 N of Durham Rd. GLENELG	Turbine 10 and access road	LT 20 Con 1 S of Durham Rd. GLENELG
Turbine 1, access road and Met tower	LT 21-22 Con 2 N of Durham Rd. GLENELG	Turbine 11 and access road	LT 35 Con 1 S of Durham Rd. GLENELG
Turbine 2 and access road	LT 28-30 Con 2 N of Durham Rd. GLENELG	Turbines 12, 14, and 15 and access roads	PT LT 23-25 Con 4 N of Durham Rd. GLENELG
Turbines 3, 4, and 5 and access roads	Pt LT 21-27 Con 1 N of Durham Rd. GLENELG	Turbine 13 and access road	LT 47 CON 2 S of Durham Rd. GLENELG
Turbine 6 and access road	PT LT 31-33 Con 1 N of Durham Rd. GLENELG	Turbines 16 and 17 and access roads	LT 43-45 CON 1 S of Durham Rd GLENELG
Turbine 7 and access road	PT LT 34 CON 1 N of Durham Rd GLENELG		

3.2 RESULTS OF SITE INVESTIGATION





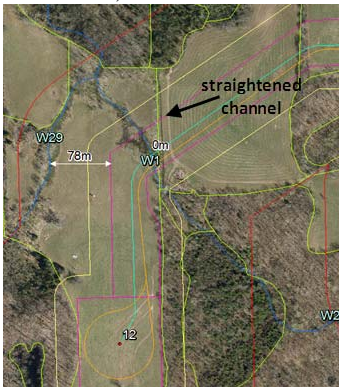
A broader area was initially surveyed in site investigation as the layout for the Project had not yet been finalized. For this reason some of the water features initially surveyed were determined later in this stage to be greater than 120m from the Project Location; and not carried forward for further investigation. The results of site investigation are provided in Table 5 for all features identified through records review and site investigation. Table 5 provides mapping of the location and distance of each feature to the project location. As well, data pertaining to land and water conditions, dates of the surveys conducted, photographic record of accessible features, and the rationale of whether or not a feature was determined to fit the description of a water body under O. Reg. 359/09 are included. Water features determined to fit the description of any of the following were not further considered in the Water Body Report:

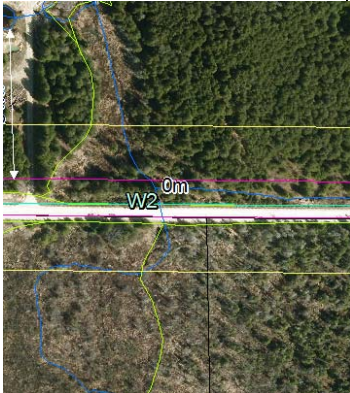




- grassed waterways;
- temporary channels for surface drainage, such as furrows or shallow channels that can be tilled and driven through;
- rock chutes and spillways;
- roadside ditches that do not contain a permanent or intermittent stream;
- temporarily ponded areas that are normally farmed;
- dugout ponds;
- artificial bodies of water intended for the storage, treatment or recirculation of runoff from farm animal yards, manure storage facilities and sites and outdoor confinement areas; or,
- channels/features dominated by plant communities that require or prefer the presence of water or continuously saturated soil to survive.

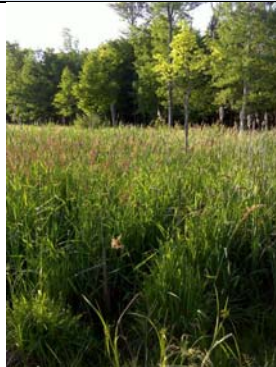

Many of the features included in Table 5 were also considered within the NHA. Where this was the case, reference to the ELC unit is included and an indication of how the feature was further addressed in the NHA is provided.


A total of 52 water features were identified through Records Review and Site Investigation and the results of surveys determined that 33 of those did not meet the definition of a water body under the REA regulation. Those features determined not to comply with the water body definition were dugout ponds, agricultural swales under active tillage and wetland features dominated by hydrophytic vegetation. A total of 13 intermittent or permanent streams, 5 seepage areas, and 3 natural ponds were identified and further addressed within the Water Body Report. In two cases features were determined to be both areas of seepage and permanent streams (W2 and W17).






Table 5: Results of Site Investigations of Water Features






Feature ID & Distance to Project Component (refer to Figures 4-7 for location of each water feature)	Description of Water Feature (ELC units shown on Figures a-c in Appendix B)	Date of Field Investigation (field notes in Appendix C0)	Photographic Records from Field Investigation		Type of REA Water Body Feature (as defined by O. Reg. 359/09)
			Upstream	Downstream	
Feature ID (source of information)	W1, W2, W23, W29 (NRVIS data layer (MNR), aerial photography)				
 <p>W23 – 99m from turbine 15 and associated access road and underground electrical collection;</p>	<p>Three separate locations (W1, W2, and W29) along the same unnamed tributary to the Saugeen River were investigated based on information obtained through Records Review. No property access was provided north of Concession 4 Road and for that reason the survey of the downstream portion of W2 was conducted from roadside.</p> <p>According to NRVIS data this feature originates at W23 which was determined through site investigation to be a willow thicket and red maple swamp (ELC unit 120) and continues through a deciduous swamp feature (ELC unit 118) dominated by Red Maple to cross an existing farm lane at W1. NRVIS data indicates that the feature continues in a northwest direction through the agricultural field (W29) to a tamarack balsam fir coniferous swamp feature (ELC unit 242).</p> <p>Site investigation determined that W1 as it appeared on LIO mapping had been replaced with an artificially straightened, grassed channel through an active agricultural field between two low lying wetland features (ELC units</p>	<p>May 15, 2012 June 14, 2012 June 15, 2012 July 5, 2012</p>	 <p>ELC unit 120 (W23) – photo: May 15, 2012</p>  <p>W1 has been replaced with a straightened, grassed channel in agricultural field of tilled crop and pasture. Approximately 5cm of water was pooled in the channel on May 15, 2012. On following visits the channel was dry. Photo taken facing north from W1.</p>	 <p>W2 - Water pooling on upstream of Concession 4 Road at W2 (photo: June 14, 2012).</p>	<p>W1= not carried forward as a water body W2= permanent stream and seepage area W23= not carried forward as a water body W29= not carried forward as a water body</p>
 <p>W1 - 0m from underground</p>					



Feature ID & Distance to Project Component (refer to Figures 4-7 for location of each water feature)	Description of Water Feature (ELC units shown on Figures a-c in Appendix B)	Date of Field Investigation (field notes in Appendix C0)	Photographic Records from Field Investigation		Type of REA Water Body Feature (as defined by O. Reg. 359/09)
			Upstream	Downstream	
collection and access road; W29 - 78m from underground collection and access road to Turbine 12;  W2 - 0m from underground collection line in existing road right of way.	118 and 242). No flow was detected at the time of survey; approximately 5 cm of standing water was documented within the grassed channel in May 2012. Channel was dry on subsequent visits (June/July 2012). W23 was determined to be a significant wetland feature and was addressed as such in the NHA; W1 was determined to be a grassed channel under agricultural use, and at W29 although soils were documented as saturated, no standing or flowing water was observed during site investigation, such that W29 was determined to be a temporary drainage area during high flow events that was being used agriculturally as part of a tilled fields and as grazing pasture. W1, W23 and W29 were determined not to conform to the definition of a 'water body' as outlined in O. Reg. 359/09. W2 was documented during site investigation as a permanent stream flowing through a culvert under Concession 4 Rd. from an upstream tamarack/ balsam fir coniferous swamp (ELC unit 272) and willow swamp thicket (ELC unit 297) to a white cedar coniferous swamp on the north side of the road. The channel is undefined and water pools upstream of Concession 4 Road at W2. North of the road the		 	 W2 - Downstream side (North) of Concession 4 Road channel narrows and flows into a white cedar coniferous swamp (photo: June 14, 2012). 	
			Existing farm land crossing of W1 - water collecting in grassy vegetation on north west (downstream) side of existing farm lane crossing on May 15, 2012 (top); channel dry on July 5, 2012 (bottom).	W2 Channel narrows and becomes more defined	

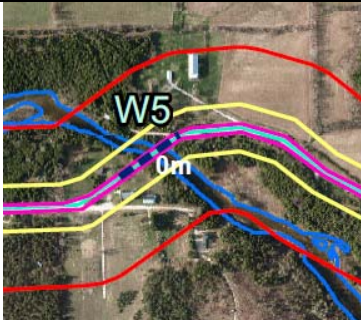





Feature ID & Distance to Project Component (refer to Figures 4-7 for location of each water feature)	Description of Water Feature (ELC units shown on Figures a-c in Appendix B)	Date of Field Investigation (field notes in Appendix C0)	Photographic Records from Field Investigation		Type of REA Water Body Feature (as defined by O. Reg. 359/09)
			Upstream	Downstream	
	<p>watercourse continues as a defined channel. Riparian vegetation at road crossing of W2 is limited to shrubby vegetation including willow and dogwood that provides little stream cover. Downstream of W2 stream cover is more pronounced with cedar as the dominant vegetation.</p> <p>The following describes the water feature at W2:</p> <p>Upstream: Water pools upstream of Conc. 4 Rd. (bankfull width =4m) and has an oily sheen; substrate shows iron staining (interpreted as evidence of groundwater seepage).</p> <p>Downstream : Wetted width = 0.8m Bankfull width (at roadside) = 1.2m Wetted depth = 0.06m Predominantly fine, organic substrate.</p> <p>Woody debris is the only form of cover at roadside, vegetation provides additional cover downstream.</p> <p>Water temperature = 17C (June 14, 20120)</p> <p>Several mink frog, green frog, and leopard frog, also 1 minnow observed.</p> <p>No detectable flow at time of survey.</p> <p>W2 was classified as a permanent stream and seepage area.</p>		 <p>South side of W1 – grasses and cattail vegetation on upstream side of farm lane at W1. Feature identified as a red maple deciduous swamp and treated as a significant wetland within the NHA (photo: June 15, 2012).</p>	 <p>W29 on July 5, 2012 – under agricultural use as pasture. Soils moist but no standing water.</p>	<p>downstream of Concession 4 Road (photo: June 14, 2012)</p>








Feature ID & Distance to Project Component (refer to Figures 4-7 for location of each water feature)	Description of Water Feature (ELC units shown on Figures a-c in Appendix B)	Date of Field Investigation (field notes in Appendix C0)	Photographic Records from Field Investigation		Type of REA Water Body Feature (as defined by O. Reg. 359/09)
			Upstream	Downstream	
					
			<p>Looking south from ELC unit 115 to W29 on July 5, 2012 – under agricultural use as pasture. Evidence of wet soils in spring, no open water feature.</p>		

Feature ID & Distance to Project Component (refer to Figures 4-7 for location of each water feature)	Description of Water Feature (ELC units shown on Figures a-c in Appendix B)	Date of Field Investigation (field notes in Appendix C0)	Photographic Records from Field Investigation		Type of REA Water Body Feature (as defined by O. Reg. 359/09)
			Upstream	Downstream	
Feature ID (source of information)	W3, W33 (NRVIS data layer (MNR), aerial photography)				
 <p>W3 - 0m from underground collection line in existing road right of way; W33 - 10m from underground collection line in existing road right of way.</p>	<p>Two features along the same watercourse were identified through Records Review and investigated further: a pond (W33) and stream feature (W3). Property access was not provided for these features; and, therefore site investigation was conducted from roadside.</p> <p>No surface water feature was found at W33.; this feature was documented as part of a willow swamp thicket (ELC unit 294) during site investigation. A culvert was documented at W3 during site investigation. The culvert was buried and dry; grasses were growing adjacent to the culvert on the north side of the road; some evidence that water may collect on south side of road during periods of spring melt. This culvert crossing appears to provide for pooling of precipitation and meltwater at roadside and connects to willow swamp thicket on south side of road (ELC unit 294). W33 was treated as wetland feature and addressed within the NHA for the Project. W3 and W33 were determined not to conform to the definition of a 'water body' as outlined in O. Reg. 359/09.</p>	June 14, 2012	 <p>Buried culvert on north side of Concession 4 Road at W3 (photo: June 14, 2012).</p>  <p>No defined channel or pond feature found at W33. This feature is part of ELC unit 294 (SWT2-2) and was addressed as a wetland feature in the NHA for the Project (photo: June 14, 2012).</p>	 <p>Culvert somewhat buried and dry on south side of Concession 4 Road. Grasses in channel suggest pooling of water under spring melt conditions (photo: June 14, 2012).</p>  <p>No defined channel on north side of Concession 4 Road at W3 (photo: June 14, 2012).</p>	<p>W3= not carried forward as a water body W33= not carried forward as a water body</p>

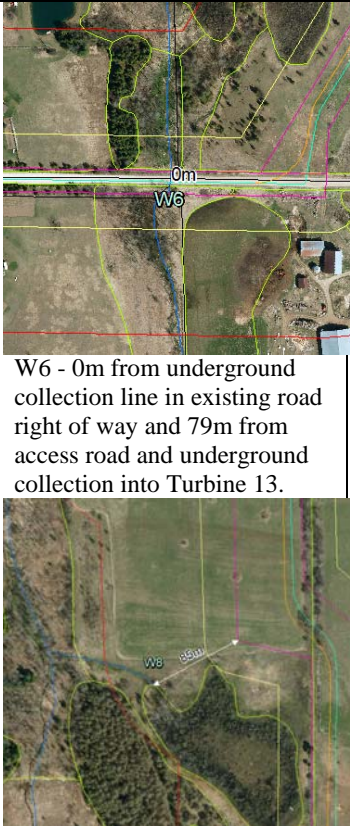

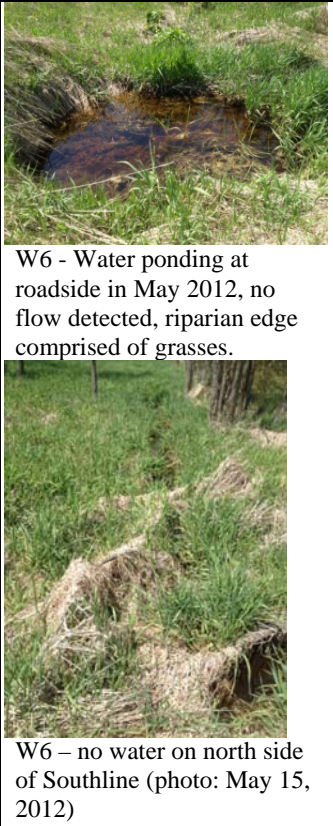
Feature ID & Distance to Project Component (refer to Figures 4-7 for location of each water feature)	Description of Water Feature (ELC units shown on Figures a-c in Appendix B)	Date of Field Investigation (field notes in Appendix C0)	Photographic Records from Field Investigation		Type of REA Water Body Feature (as defined by O. Reg. 359/09)
			Upstream	Downstream	
Feature ID (source of information)	W4, W30 (NRVIS data layer (MNR), aerial photography)				
 <p>W4 - 0m from underground electrical collection in existing road right of way; W30 - 0m from underground electrical collection in existing road right of way.</p>	<p>Two features along the same watercourse were identified through Records Review and investigated further: a pond (W30) and stream feature (W4). Property access was not provided for the properties where these features were located and for that reason a roadside survey was conducted.</p> <p>W30 was located on the upstream side of Concession 4 Rd. The feature was documented during ELC surveys as unit 288 – a forb shallow marsh. The open water portion of the feature is dominated by bull-head pond lily (Nuphar variegata) with occasional broad-leaved cattails. Pussy willow, Lance-leaved aster, and spotted joe-pye weed are found along the edges. Approximately 90% of the surface area of W30 was covered with lily pads. This feature was treated as a wetland feature and addressed within the NHA for the Project. W30 was determined not to conform to the definition of a ‘water body’ as outlined in O. Reg. 359/09.</p> <p>A culvert (W4) conveys water from W30 to an ill-defined channel within a tamarack balsam fir coniferous swamp on the north side</p>	<p>June 14, 2012 August 1, 2012</p>	 <p>Roadside channel on south side of Concession 4 Road just upstream of W4 crossing – dominated by emergent vegetation (photo: August 1, 2012).</p>  <p>Culvert (W4) conveys water from wetland on south side of road to wetland on north side of road (photo: June 14, 2012).</p>	 <p>Wetland feature (ELC unit 286) on north side of Concession 4 Road (photo: June 14, 2012).</p>  <p>W4 – culvert on north side conveys water to wetland feature.</p>	<p>W4= intermittent stream W30= not carried forward as a water body</p>




Feature ID & Distance to Project Component (refer to Figures 4-7 for location of each water feature)	Description of Water Feature (ELC units shown on Figures a-c in Appendix B)	Date of Field Investigation (field notes in Appendix C0)	Photographic Records from Field Investigation		Type of REA Water Body Feature (as defined by O. Reg. 359/09)
			Upstream	Downstream	
	<p>of Concession 4 Road. The portion of channel visible on the north side of the road was poorly defined, approximately 10cm deep with riparian vegetation consisting of grasses with a canopy of tamarack, balsam fir, and occasional red maple and black ash. Fry and tadpoles were observed in the channel during June 14, 2012 site investigation.</p> <p>Bankfull width at roadside 2m, narrows to approximately 0.4m downstream. Water temperature was 18C (June 14, 2012). This feature was treated as a significant wetland feature and addressed within the NHA for the Project. W4 was also characterized as an intermittent stream.</p>		 <p>W30 – wetland feature (photo: August 1, 2012).</p>	 <p>W4 –culvert sits high in water, perched under low flow conditions creating barrier to fish movement.</p>	

Feature ID & Distance to Project Component (refer to Figures 4-7 for location of each water feature)	Description of Water Feature (ELC units shown on Figures a-c in Appendix B)	Date of Field Investigation (field notes in Appendix C0)	Photographic Records from Field Investigation		Type of REA Water Body Feature (as defined by O. Reg. 359/09)
			Upstream	Downstream	
Feature ID (source of information)	W5, W21, W22 (Records Review, NRVIS data layer (MNR), aerial photography)				
 <p>W5 - 0m from collection line within existing road right of way (installed through attachment to bridge structure or overhead line);</p>  <p>W21 - 34m from underground electrical collection line within existing road right of way;</p>	<p>3 locations along the Upper Saugeen River were identified through Records Review to be within 120m of the Project Location and investigated further: W5, W21 and W22. Property access was provided for the properties where W5 and W22 were located; however, in the case of W21 no access was provided. At W21 the survey was conducted from an existing crossing (bridge location).</p> <p>The following details were documented: W5: bankfull width = 16-17 m Bankfull depth = 1-1.5m Banks are stable (include riprap at the bridge crossing); substrate is comprised mostly of cobble and boulder; little instream cover in the form of vegetation is available; combination of riffle, run and flats. Undercut bank of limestone on downstream side of bridge provides instream cover. Riparian vegetation is limited on the west side of the river as land use includes the manicured grounds of a church and cemetery. A narrow band of coniferous forest present on the upstream side of the bridge (ELC unit 404) on the west bank, is dominated by Eastern white cedar with canopy cover that varies from</p>	<p>June 14, 2012 June 27, 2012 July 5, 2012</p>	 <p>W5 - existing bridge structure (photo: June 14, 2012).</p>  <p>W5 - upstream of bridge on Concession 4 Road (photo: June 14, 2012).</p>	 <p>W5 - Saugeen River downstream of bridge on Concession 4 Road (photo: June 14, 2012).</p>  <p>W5 - limestone bank on downstream side of crossing (photo: July 5, 2012)</p>	<p>W5 - permanent stream W21 - permanent stream W22 - permanent stream</p>

Feature ID & Distance to Project Component (refer to Figures 4-7 for location of each water feature)	Description of Water Feature (ELC units shown on Figures a-c in Appendix B)	Date of Field Investigation (field notes in Appendix C0)	Photographic Records from Field Investigation		Type of REA Water Body Feature (as defined by O. Reg. 359/09)
			Upstream	Downstream	
 <p>W22 –80m from construction disturbance of Turbine 7 and associated access road and underground electrical collection line.</p>	<p>no understory or ground cover to meadow species within the gaps. Similarly, the riparian vegetation on the east side of the river is a narrow band of coniferous forest (ELC unit 277/275) with the canopy and subcanopy layers dominated by white cedar, and a thin understory including choke cherry, common lilac, dotted hawthorn, and downy serviceberry. Groundcover is sparse and includes riverbank grape, Canada goldenrod, and violets.</p> <p>MNR identifies the Saugeen as a cold water system. Water temperature = 17C (June 14, 2012), 22C (July 5, 2012) W21: bankfull width = 18 m Bankfull depth = 2m Banks are stable (include riprap at the bridge crossing); substrate is comprised mostly of cobble and boulder; little instream cover in the form of vegetation is available; combination of riffle and flats. Blacknose Dace, sucker and pinhead fry observed in channel at time of survey. Gravel beds were present on the downstream side of the bridge, possibly used for spawning (photo). Riparian vegetation communities include deciduous swamp (ELC unit 425) and coniferous forest (ELC units 274, 275 and 426). White cedar is the dominant tree species within the</p>		 <p>W21 - existing bridge structure (photo: June 14, 2012).</p>  <p>W21- upstream of bridge on County Rd 23 (photo: June 14, 2012).</p>  <p>W22 – upstream condition June 27, 2012</p>	 <p>W21- downstream of bridge on County Rd 23 (photo: June 14, 2012).</p>  <p>W21 -- typical substrate (bolder/cobble mix) with two gravel beds observed on downstream side of bridge (photo: June 14, 2012)</p>  <p>W22 – downstream condition June 27, 2012</p>	

Feature ID & Distance to Project Component (refer to Figures 4-7 for location of each water feature)	Description of Water Feature (ELC units shown on Figures a-c in Appendix B)	Date of Field Investigation (field notes in Appendix C0)	Photographic Records from Field Investigation		Type of REA Water Body Feature (as defined by O. Reg. 359/09)
			Upstream	Downstream	
	<p>riparian canopy, with Manitoba maple (<i>Acer negundo</i>), white elm, and black cherry less frequent. The swamp community is dominated by balsam poplar, with white cedar and balsam fir scattered within. Typical swamp species like ferns, sedges, and grasses dominate the ground layer.</p> <p>MNR identifies the Saugeen as a cold water system. Water temperature = 17C (June 14, 2012)</p> <p>W22: bankfull width = 10-14 m Bankfull depth = 0.7-0.9 m Banks are stable; substrate is comprised mostly of cobble and boulder; little instream cover in the form of vegetation is available; combination of riffle, pool, run and flats. Blacknose Dace young of year observed in channel at time of survey. Riparian vegetation includes joe pyeweed, grasses, bluets, ostrich fern and mint with alternate leaved dogwood and willow. Tree canopy includes willow, green and white ash, Eastern white cedar, sugar maple and white elm.</p> <p>MNR identifies the Saugeen as a cold water system. MNR fisheries records document Brook Trout and Brown Trout in the Saugeen River upstream of Hanover.</p>				

Feature ID & Distance to Project Component (refer to Figures 4-7 for location of each water feature)	Description of Water Feature (ELC units shown on Figures a-c in Appendix B)	Date of Field Investigation (field notes in Appendix C0)	Photographic Records from Field Investigation		Type of REA Water Body Feature (as defined by O. Reg. 359/09)
			Upstream	Downstream	
Feature ID (source of information)	W6, W8 (NRVIS data layer (MNR), aerial photography)				
 <p>W6 - 0m from underground collection line in existing road right of way and 79m from access road and underground collection into Turbine 13.</p>	<p>Two features along the same watercourse were identified through Records Review and investigated further: W6 and W8. Property access was not provided for the property downstream (north) of W6 and for that reason a roadside survey was conducted.</p> <p>W6 – On the south side of the road water pools in areas within a white elm deciduous swamp with species composition dominated by elm followed by a few red maples within the light canopy, abundant willows in the understory and reed-canary grass as the dominant ground cover. On the north side of Southline road is a balsam poplar deciduous swamp/forb meadow marsh with white elm, balsam poplar, and trembling aspen as the common species within the canopy and a few tamarack and white cedar mixed throughout. Lance-leaved aster, sedges, spotted joe-pye weed, reed-canary grass, and rough-leaved goldenrod are dominant within the ground layer.</p>	<p>May 15, 2012 Aug. 1, 2012</p>	 <p>W6 - South side of Southline Rd. – water pools in grassy areas throughout ELC unit 250 (SWD4-2) a white elm deciduous swamp.</p>	 <p>W6 - Water ponding at roadside in May 2012, no flow detected, riparian edge comprised of grasses.</p> <p>W6 – no water on north side of Southline (photo: May 15, 2012)</p>	<p>W6 - not carried forward as a water body W8 - not carried forward as a water body</p>

Feature ID & Distance to Project Component (refer to Figures 4-7 for location of each water feature)	Description of Water Feature (ELC units shown on Figures a-c in Appendix B)	Date of Field Investigation (field notes in Appendix C0)	Photographic Records from Field Investigation		Type of REA Water Body Feature (as defined by O. Reg. 359/09)
			Upstream	Downstream	
W8 – 85m from underground collection and access road to Turbine 13	<p>W6- Pooling water was evident in Spring (May 15, 2012) but not in Summer (August 1, 2012). W6 allows water from both wetland features to collect under the road crossing under Spring conditions. This feature was treated as part of a significant wetland feature identified within the NHA for the Project (see Appendix B for mapping). W6 was determined not to conform to the definition of a ‘water body’ as it was dominated by hydrophytic vegetation.</p> <p>W8 - This feature was characterized as a wetland feature (ELC units 108 and 234) a willow swamp thicket and balsam poplar deciduous swamp/forb meadow marsh). This feature was treated as a significant wetland feature and addressed within the NHA for the Project. W8 was determined not to conform to the definition of a ‘water body’ as outlined in O. Reg. 359/09.</p>		 <p>W6 upstream - August 1, 2012, feature dominated by wetland vegetation (ELC unit 250)</p>	 <p>W6 – August 1, 2012, no flow.</p>  <p>W6 downstream – August 1, 2012, feature dominated by wetland vegetation (ELC unit 248)</p>	