



# APPENDIX A

## Archaeological Assessment

### Turbine Renumbering Key

Turbine ID		Turbine Location (UTM, NAD83, Zone 17)		
Dec. 2011	CURRENT	Easting (m)	Northing (m)	
T1	T1	562377.84	4899922.08	
T2	T2	562432.26	4899644.49	
T3	T3	562514.18	4898736.15	
T4	T4	562669	4898423	
T5	T5	562737.22	4898030.44	
T6	T6	562797.06	4897713.79	
T7	T7	562743.95	4897323.7	
T8	T8	562791.36	4897066.19	
T9	T9	561040.2	4898526.83	
T10	T10	561186	4898131	
T11	T11	561240	4897794	
T12	T12	561299	4897498	
T13	T13	561378	4896345	
T15	T14	561617.57	4895825.87	
T16	T15	561666.1	4895569.49	
T17	T16	561828	4894785	
T18	T17	561892.3	4894329.1	
T19	T18	562310.14	4893515.37	
T20	T19	562216.26	4893261.85	
T21	T20	562073.28	4892879.57	
T22	T21	562266.87	4892525	
T23	T22			Removed from Project
T24	T23	560154.28	4896216.89	
T25	T24	560262.67	4894831.43	
T26	T25	560543.04	4893993.87	
T27	T26	560934.89	4893530.22	
T28	T27	561304.11	4893183.41	
T29	T28	558451.87	4897767.04	
T30	T29	558777.65	4897217.17	
T31	T30	558570.25	4895835.46	
T32	T31	558502.32	4895457.51	
T42	T32	559022	4895465	
T33	T33	559329	4894887	
T34	T34	559445	4893813	
T35	T35	559145.09	4893324.35	
T36	T36	559521	4892927	
T37	T37	557251	4897375	
T38	T38	557187.15	4897018.88	
T39	T39	557187	4896659	
T40	T40	557667.35	4896109.87	
T41	T41	558035	4893974	
T43	T42	555984.05	4895978.37	
T44	T43	556098.48	4895709.8	
T45	T44	555133.15	4896539.56	
T46	T45	555185.66	4896232.1	
T47	T46	554601.61	4896539.16	
T14	T47	554551.76	4896110.45	
T48	T48	553097.55	4895653.55	
T49	T49	553070.8	4895223.3	
T51 (Alt1)	A1			Removed from Project
T52 (Alt2)	A2			Removed from Project
T53 (Alt4)	A3			Removed from Project
T54 (Alt5)	T22	552716.84	4896358.74	
Substation	NW	561408	4896596	
	NE	561469	4896608	
	SE	561493	4896526	
	SW	561431	4896509	

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April 25, 2012

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**RE: Dufferin Wind Farm Project, Dufferin County, Melancthon Township, FIT 000661-WIN-130-601, MTCS RIMS Number HD00669, P027-153-2011, P027-154-2011, P027-155-2011, P027-056-2011, P057-157-2011, P027-158-2011, P109-038-2010 & P006-015-2011**

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 reports 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 or the 2011 Standards and Guidelines for Consultant Archaeologists (whichever apply). Please note that the Ministry makes no representation or warranty as to the completeness, accuracy or quality of the reports.\*

The reports recommend the following:

**Stage 1 Report, P027-153-2011, November 30, 2011, Received December 09, 2011, Satisfaction Letter Issued December 16, 2011**

*Stage 2 archaeological assessment is recommended for the areas identified in figures 8B, 8E and 8F. No further archaeological assessment is required for the remainder of this property.*

*The appropriate Stage 2 strategy for the area of archaeological assessment is test pitting. The areas of archaeological potential cannot be ploughed.*

**Stage 1 Report, P027-154-2011, November 27, 2011, Revised March 2, 2012, Received March 9, 2012, Satisfaction Letter Issued April 10, 2012**

*Stage 2 archaeological Assessment is recommended for the area along the 30<sup>th</sup> Sideroad as illustrated in Figure 11.*

*No further archaeological assessment is required for the remainder of this property.*

*The appropriate Stage 2 strategy for the area of archaeological assessment is test pitting. The area is roadside and cannot be ploughed.*

**Stage 1 Report, P027-157-2011, December 17, 2011, Received December 20, 2011, Satisfaction Letter Issued February 15, 2011**

*No further archaeological assessment is required for the study property*

**Stage 2 Report, P027-155-2011, November 27, 2011, Received December 11, 2011, Satisfaction Letter Issued February 23, 2012**

*Based on the results of the Stage 2 archaeological assessment, the following is recommended:*

*No further archaeological work is required.*

**Stage 2 Report, P027-156-2011, December 3, 2011, Received December 09, 2011, Satisfaction Letter Issued December 20, 2011**

*Based on the results of the Stage 2 archaeological assessment, the following is recommended:*

*No further archaeological work is required.*

**Stage 2 Report, P027-158-2011, December 27, 2011, Received December 30, 2011, Satisfaction Letter Issued January 18, 2012**

*Based on the results of the Stage 2 archaeological assessment, the following is recommended:*

*No further archaeological work is required.*

**Stage 1-2 Report, P109-038-2010 & P006-015-2011, December 21, 2011, Revised April 13, 2012, Received April 17, 2012, Satisfaction Letter Issued April 25, 2012**

***Stage 1 Recommendations***

*Due to the potential for encountering archaeological resources, it is recommended that archaeological assessment (Stage 2) be conducted for all turbine sites, as well as ancillary facilities such as access roads, underground cable alignments, collector lines, lay-down yards, transmission lines, the proposed substation site, the proposed point of interconnect etc, well in advance of any ground disturbance.*

*There are only a few exceptions to the above recommendation. The first would be those areas previously subjected to archaeological assessment and for which no further archaeological assessment is required by the Ontario Ministry of Tourism, Culture and Sport (**Figure 6**). It should also be noted that all swamp and road crossings have been examined and determined to exhibit low archaeological potential (i.e. swamps and municipal roadways), and as such no further archaeological assessment is required. Furthermore, these areas are to be addressed by means of Horizontal Directional Drilling (HDD) (See **Appendix A** for charts, photos and detailed maps that show areas of low potential that are to be HDD). Finally, there are several areas where the underground cable alignments will be placed in the ditch running alongside municipal roadways. Given their low archaeological potential on the basis of previous disturbance, CRM Group recommends that no further archaeological assessment is required for these ditches (See **Appendix A** for detailed maps and photos that show areas of low potential such as ditches).*

*To facilitate visual assessment (Stage 2) of the proposed turbine sites, as well as ancillary facilities such as access roads, underground cable alignments, collector lines, lay-down yards, transmission lines, the proposed substation site, the point of interconnect, etc, it is recommended these impact zones, when possible, be ploughed and allowed to weather prior to conducting the assessment. Please note that all ploughing should be conducted within the standards of normal agricultural ploughing (no chisel ploughing or deep ploughing) so as not to disturb archaeological resources buried below the current plough zone.*

***Stage 2 Recommendations***

*Of the 53 turbine locations (including 4 alternate locations) assessed by CRM Group, 43 were devoid of any observable cultural resources, as well as the proposed substation and point of interconnect. Isolated finds were made in conjunction with 2 of the proposed turbine locations. Substantial cultural resource finds were made in conjunction with 8 proposed turbine locations (including 1 alternate location) or their access roads (**Table 3.2**). Of these eight sites, two require Stage 3 archaeological testing, while CRM Group recommends no further archaeological assessment is required on the remaining six sites.*

*Within the seven portions of the 230kv transmission line alignment assessed by CRM Group, all were devoid of any observable cultural material. The transmission line does not require any further archaeological assessment.*

*Recognizing the significance of the historic and Precontact archaeological resources identified as a result of the archaeological assessment, the client is working with Dillon Consulting Ltd and CRM Group to avoid or minimize construction related impacts through repositioning of turbine sites and the realignment of access roads whenever possible.*

*On the basis of discoveries made during the assessment in conjunction with site specific historical analysis, CRM Group makes the following recommendations:*

**1. No Further Archaeological Assessment Required of those Areas Containing No Cultural Resources:**

*Given the absence of observable cultural resources on all facilities associated with turbine sites T1 & T2, T3 & T4 & T5 & T6 & T7 & T8, T9, T10 & T12, T13 & T14, T15 & T16, T17 & T18, T19 & T20, T21 & T22, T23, T25, T26, T27, T28, T29, T30, T32, T33, T34, T36, T37, T40, T41, T42, T44, T45, T46 & T47, T49, AT2, AT3, AT4, the O & M building, the substation and the point of interconnect, CRM Group recommends that no further archaeological assessment is required on these 43 individual turbine sites, access roads, collector lines, staging areas, turnaround points, bump outs, proposed substation site and point of interconnect.*

*CRM Group also recommends that no further archaeological assessment is required for the following portions of transmission line: from 4<sup>th</sup> Line to turbine site T24, the 25m corridor in the woodlot east of turbine site T24, the swath paralleling County Road 21 between turbine site T42 and 5<sup>th</sup> Line, from 5<sup>th</sup> Line to 8<sup>th</sup> Line NE, from the 5<sup>th</sup> Line wetland west of T41, from the north-western corner of the wetland to the end of 6<sup>th</sup> Line NE, and the shovel tested area of line paralleling the access road to T41.*

**2. No Further Archaeological Assessment Required of those Turbine Sites Containing Isolated Finds:**

*Given the isolated context in which either formal tools or flakes were located within facilities associated with T38 and T35, CRM Group recommends that no further archaeological assessment is required on the turbine sites, access roads, collector lines, turnaround points, bump outs and staging areas associated with these two turbine sites.*

**3. Turbine Site T11**

*Given the modern (late nineteenth to early twentieth century) dating of the cultural resources recovered from this site, CRM Group recommends that no further archaeological assessment is required for turbine site T11 and its associated parts.*

**4. Turbine Site T24**

*Given the only cultural resource identified on turbine site T24 is a twentieth century refuse dump, CRM Group recommends that no further archaeological assessment is required for turbine site T24 and its associated parts.*

**5. Turbine Site T39**

*Given the extremely small number of artifacts recovered (n=2 flakes), as well as the absence of any diagnostic artifacts, CRM Group recommends that no further archaeological assessment is required for turbine site T39 and its associated parts.*

## **6. Turbine Site T48**

*Given the modern (twentieth century) dating of the cultural resources recovered from this site, CRM Group recommends that no further archaeological assessment is required for turbine site T48 and its associated parts.*

## **7. MET Tower**

*Given the very small and sparse nature of the scatter, as well as the modern (twentieth century) dating of the cultural resources recovered from this site, CRM Group recommends that no further archaeological assessment is required for the MET tower and its associated parts.*

## **8. Alternate Turbine Site AT1**

*Given the only cultural resource identified on alternate turbine site AT1 is a late nineteenth century refuse dump, CRM Group recommends that no further archaeological assessment is required for alternate turbine site 1 and its associated parts.*

## **9. Turbine Site T31**

*Given the requirements for Stage 3 Testing and site avoidance as stipulated in the OM CTS's 2011 Standards and Guidelines for Consultant Archaeologists, CRM Group recommends that the significant archaeological resources found within the T31 turbine site including the 20 metre buffer and 21 metre to 70 metre monitoring zone be avoided if possible.*

*If development impacts the monitoring zone (that area falling between 21 metres and 70 metres beyond the identified perimeter of the site), CRM Group recommends archaeological construction monitoring.*

*CRM Group recommends that temporary fencing be erected along the outer limits of the monitoring zone (greater than 71 metres beyond the identified perimeter of the site) to prevent any accidental impact associated with construction activities during development of the turbine site. A licensed archaeologist must also be present during development of this area to monitor the boundaries of the site.*

*If development impacts the site proper and/or the 20 metre buffer, the site identified within the T31 turbine pad must be subjected to Stage 3 archaeological assessment. The Stage 3 assessment of this site (or part of site and buffer area located within the project location) would include historic background research, a CSP and the excavation of test units at a five metre grid across the site location and an additional 20% of units that will focus on areas of interest within the site extent. Construction monitoring of the buffered site area may still be required depending on the amount of Stage 3 completed, the results of the Stage 3 survey, and the overall location of the site with respect to the project location. Stage 4 archaeological excavation may be required for areas of the site as well, depending on the results of the Stage 3 archaeological assessment.*

*CRM Group recommends that no further archaeological assessment is required for the remainder of the T31 turbine site (that area falling 71 metres or more beyond the identified perimeter of the site).*

*Site 1 of Turbine Site T31 is a very small post contact site, and it is not yet evident that the level of cultural heritage value and interest will result in a recommendation to proceed to Stage 4 archaeological assessment.*

#### **10. Turbine Site T43**

*Given the requirements for Stage 3 Testing and site avoidance as stipulated in the OMCTS's 2011 Standards and Guidelines for Consultant Archaeologists, CRM Group recommends that the significant archaeological resources found within the T43 turbine site including the 20 metre buffer and 21 metre to 70 metre monitoring zone be avoided if possible.*

*If development impacts the monitoring zone (that area falling between 21 metres and 70 metres beyond the identified perimeter of the site), CRM Group recommends archaeological construction monitoring.*

*CRM Group recommends that temporary fencing be erected along the outer limits of the monitoring zone (greater than 70 metres beyond the identified perimeter of the site) to prevent any accidental impact associated with construction activities during development of the turbine site. A licensed archaeologist must also be present during development of this area to monitor the boundaries of the site. If development impacts the site proper and/or the 20 metre buffer, the site identified within the T43 turbine pad must be subjected to Stage 3 archaeological assessment. The Stage 3 assessment of this site (or part of site and buffer area located within the project location) would include historic background research, a CSP and the excavation of test units at a five metre grid across the site location and an additional 20% of units that will focus on areas of interest within the site extent. Construction monitoring of the buffered site area may still be required depending on the amount of Stage 3 completed, the results of the Stage 3 survey, and the overall location of the site with respect to the project location. Stage 4 archaeological excavation may be required for areas of the site as well, depending on the results of the Stage 3 archaeological assessment.*

*CRM Group recommends that no further archaeological assessment is required for the remainder of the T43 turbine site (that area falling 71 metres or more beyond the identified perimeter of the site).*

*Site 1 of Turbine Site T43 is a small post contact site, and it is not yet evident that the level of cultural heritage value and interest will result in a recommendation to proceed to Stage 4 archaeological assessment.*

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. Dr. Scarlett Janusas, Archaeological Heritage and Consulting and Education  
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*\* 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.*

**STAGES 1 and 2: ARCHAEOLOGICAL ASSESSMENT REPORT REVISED (2<sup>nd</sup> Revision)  
DUFFERIN WIND POWER PROJECT  
DUFFERIN COUNTY, MELANCTHON TOWNSHIP**

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Date: December 21, 2011 – Original report  
March 22, 2012 – 1<sup>st</sup> Revision  
April 13, 2012 – 2<sup>nd</sup> Revision

## **EXECUTIVE SUMMARY**

In the spring of 2010, Cultural Resource Management (CRM) Group was retained by Dillon Consulting Limited to undertake Stage 1 and 2 archaeological investigations for the Dufferin Wind Power Project, located within Melancthon Township in the north-western corner of Dufferin County (**Figures 1 & 2**). It is proposed that the wind farm will be connected to the provincial electrical grid by means of two transmission lines. The first of these being considered would be a 230kv transmission line extending southwest from the wind farm to an abandoned railway line, and then south and east along the rail line to connect with an existing Hydro One 230kv transmission line at a point approximately 5 kilometres west of Orangeville. The second of these would be a 69kv transmission line extending southwest from the wind farm study area. With the exception of the portions of transmission line assessed by CRM Group, which were those portions of the 230kv alignment that fell within the wind farm study area (**Figures 2 & 3**), the proposed transmission lines will be assessed in a separate study. Stage 1 of the archaeological assessment for the wind farm project, conducted in the spring of 2010 as well as in the fall of 2011, included background archival research and site reconnaissance. The Stage 2 field work was conducted in the fall of 2011, which included both a pedestrian survey at 5 metre intervals, as well as shovel testing at 5 metre intervals where pits were a minimum of 30 centimetres wide and dug no less than 5 centimetres into subsoil (**Figure 7 & Appendix A**).

On the basis of specific environmental and cultural factors examined during the Stage 1: Background Assessment, the Dufferin Wind Power Project study area is considered to exhibit a mix of low, moderate and high archaeological potential for Precontact Native, historic Native and early to mid-nineteenth century Euro-Canadian settlement. Given its position at the headwaters of several major watersheds and the presence of numerous small tributaries, as well as the topography, soil and vegetation types, the Dufferin Wind Power Project study area and transmission line are generally considered to exhibit moderate with focussed areas of high potential for encountering Native and early Euro-Canadian archaeological resources. On the basis of provincial legislations, Stage 2 archaeological assessment is required prior to development within any area identified as having moderate to high archaeological potential (**Figure 6**).

It should be noted that the archaeological resources identified by Jim Wilson in 2008 (Golder Associated Ltd) in association with the Melancthon Quarry assessment have been fully mitigated, and therefore the Melancthon Quarry study area is now considered to exhibit low archaeological potential (**Figure 6**). Areas such as ditches running alongside municipal roadways are also considered to exhibit low archaeological potential due to previous disturbance (**Appendix A: Turbine Data Sheets**).

During the fall of 2011, CRM Group conducted a Stage 2 archaeological assessment of the Dufferin Wind Power Project study area and portions of transmission line that fell within the wind farm study area (**Figures 1 & 3**). Of the 53 turbine locations (including 4 alternate site locations) and their associated access roads, collector lines, staging areas, turnaround points and bump outs, 10 turbine sites (including 1 alternate site) produced

scatters of observable cultural resources. Of these ten sites, two require Stage 3 archaeological testing, while the other eight do not require any further archaeological assessment. Given the peripheral location of the two sites identified for Stage 3 Testing, minor adjustment to the location of the turbine and associated activities could avoid impact to the buffered site area. The remaining 43 turbine sites (including 3 alternate sites) and associated areas are devoid of cultural resources and therefore recommended for clearance. The proposed substation site and point of interconnect (**Figure 8**) did not produce any observable cultural resources, and are also recommended for clearance. The seven portions of the transmission line assessed by CRM Group also did not produce any observable cultural resources, and do not require any further archaeological assessment.

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## **1.0 STAGE 1- BACKGROUND RESEARCH**

### **1.1 Project Context**

#### **1.1.1 Development Context**

In the spring of 2010, Cultural Resource Management (CRM) Group was retained by Dillon Consulting Limited to undertake Stage 1 and 2 archaeological investigations for the Dufferin Wind Power Project, located within Melancthon Township in the north-western corner of Dufferin County (**Figures 1 & 2**). It is proposed that the wind farm will be connected to the provincial electrical grid by means of one of two alternate transmission lines. The first of these being considered would be a 230kv transmission line extending southwest from the wind farm to an abandoned railway line, and then south and east along the rail line to connect with an existing Hydro One 230kv transmission line at a point approximately 5 kilometres west of Orangeville. The second of these would be a 69kv transmission line extending southeast from the wind farm study area to connect to an existing Hydro One 230kv transmission line. With the exception of the portions of transmission line assessed by CRM Group, which were those portions of the 230kv alignment that fell within the wind farm study area (**Figures 2 & 3**), the proposed transmission lines will be assessed in a separate study. Stage 1 of the archaeological assessment for the wind farm project, conducted in the spring of 2010 as well as in the fall of 2011, included background archival research and site reconnaissance. The Stage 2 field work was conducted in the fall of 2011, which included both a pedestrian survey at 5 metre intervals, as well as shovel testing at 5 metre intervals where pits were a minimum of 30 centimetres wide and dug no less than 5 centimetres into subsoil (**Figure 7 & Appendix A**).

The study area is roughly bounded on the north by the Dufferin-Grey county line and on the east by the Mulmur-Melancthon township line. The southern boundary follows 15<sup>th</sup> Sideroad from Mulmur Melancthon Line west to 5<sup>th</sup> Line. The western boundary runs north on 5<sup>th</sup> Line to 6<sup>th</sup> Line NE then northwest along 6<sup>th</sup> Line NE and 4<sup>th</sup> Line NE to the county line.

The current configuration for the proposed 230kv transmission line runs east to west through the center of the study area (**Figure 3**). This was the only portion of transmission line assessed by CRM Group during the Stage 2 archaeological assessment.

Both the Stage 1 and Stage 2 archaeological investigations were conducted during the pre-submission stage of development, and permission was given by both landowners and the land agent to access each property for assessment.

## **1.1.2 Historical Context**

A number of environmental and historical factors, such as water sources, soil types, physiographic features and vegetation, have influenced settlement patterns and therefore, contribute to the archaeological potential within the study area and along the proposed transmission line. The background research involved both looking at these environmental factors, as well as looking at past settlement patterns through archival research.

### **1.1.2.1 Water Sources**

Proximity to water, for both drinking and transportation, is a key factor in identifying Precontact and historic Native, as well as early Euro-Canadian, archaeological potential. Identified as the ‘roof’ of peninsular Ontario (Chapman and Putnam 1984: 130), the high plain forms the watershed for rivers that feed into Georgian Bay (Nottawasaga River), Lake Huron (Saugeen River) and Lake Erie (Grand River). Although the tributaries within the wind farm study area that feed into these rivers are relatively small (*Plate 1*), they would still have been suitable for Aboriginal and early Euro-Canadian exploration. The principal water course within the wind farm study area is the Noisy River. This tributary of the Nottawasaga River drains the north-eastern portion of the study area. The Pine River, another tributary of the Nottawasaga River, drains the southern portion of the study area.

The portion of the 230kv transmission line assessed by CRM Group falls within the same study area, and is therefore associated with the same water sources (*Figures 2 & 3*).

Given its position at the headwaters of several major watersheds and the presence of numerous small tributaries, the Dufferin Wind Power Project study area and portion of the 230kv transmission line that falls within the wind farm study area are generally considered to exhibit moderate with focussed areas of high potential for encountering Native and early Euro-Canadian archaeological resources.

### **1.1.2.2 Topography**

The wind power study area consists of a gently undulating topography scarred in the southeast and northeast by tributaries of the Pine and Noisy rivers respectively. The poorly drained low areas found throughout the western half of the study area are dominated by swamps and bogs. This was confirmed by a review of the original surveyor, David Gibson’s, field notes (Gibson, 1853).

The topography along the portion of the proposed 230kv transmission line assessed by CRM Group does not differ significantly from that seen in the overall wind power study area.

### **1.1.2.3 Soils**

The Dufferin Wind Power Project study area lies in the north-eastern quadrant of the gently undulating Dundalk Till Plain (Chapman and Putnam 1984: 130). In contrast to the general characterization of the plain as dominated “by swamps or bogs and by poorly drained depressions” (Chapman and Putnam 1984: 130), the eastern part of the study area



consists primarily of well drained sandy loam soils. The western half of the study area is a much more diverse mix of imperfectly to poorly drained soils, including several elongated peat/muck deposits.

Surface soils within the wind farm study area are dominated by Honeywood silt loam (Hos), a wind-deposited loam over loam till that covers much of the eastern half of the study area (**Figure 4**). This well drained loam is described in *Soil Survey of Dufferin County, Ontario* as being “among the best agricultural soils in Southern Ontario and... capable of producing all crops adapted to the area” (Hoffman, Matthews & Wicklund: 38). In the northwest half of the study area, Honeywood silt loam is replaced by a series of glacial deposits, such as Donnybrook sandy loam (Db), Hillsburgh fine sandy loam (Hif), Fox sandy loam (Fs) and Granby sandy loam (Grs), interspersed with extensive deposits of muck (M) in low lying areas (**Figure 4**).

The portion of the 230kv transmission line assessed by CRM Group falls within the same study area, and is therefore associated with the same soil types seen in the northern half of the wind farm study area.

#### 1.1.2.4 Vegetation

The study area and transmission line are situated in the Maple-Hemlock Section of the Great Lakes- St.Lawrence Forest Province of the Cool Temperate Division (McAndrews and Manville: 43). This ecological region is dominated by sugar maple, beech, oak, hemlock and white pine on the well drained soils while poorly drained areas tend to have tamarack, cedar, spruce, birch, black ash and balsam (Gibson, 1853).

The study area and the transmission line are made up of agricultural ploughed fields, small wood lots and bogs.

#### 1.1.2.5 Natural Setting Conclusions

Given its position at the headwaters of several major watersheds and the presence of numerous small tributaries, as well as the topography, soil and vegetation types, the Dufferin Wind Power Project study area and transmission line are generally considered to exhibit moderate with focussed areas of high potential for encountering Native and early Euro-Canadian archaeological resources

**Table 1: Outline of Southern Ontario Culture History**

PERIOD	TIME RANGE	SUBDIVISION OR DIAGNOSTIC ARTIFACT
<b>Palaeo-Indian</b>		
Early	9000-8500 B.C.	Gainey Fluted point
		Barnes Fluted Point
		Crowfield Fluted Point
Late	8500-7500 B.C.	Holcombe Point
		Hi-Lo Point
		Laneolate Bifaces

<b>Archaic</b>		
Early	8000-6000 B.C.	Side-Notched Point Types
		Corner-Notched Point Types (e.g. Nettling point)
		Bifurcate Base Point Type
Middle	6000-2500 B.C.	Stemmed Point Types (e.g. Kirk/Stanly Points)
		“Laurentian culture” (e.g. Otter Creek, Brewerton Points)
Late	2500-1000 B.C.	Narrow Point (e.g. Lamoka, Normanskill Point Types)
		Broad Point (e.g. Genesee, Adder Orchard, “Stachell” point types)
		Small Point (e.g. Crawford Knoll, Innes, Hind, “Ace of Spades” point types)
<b>Early Woodland</b>		
	1000-400 B.C.	Meadowood Complex (e.g. Meadowood Points and Bifaces)
<b>Middle Woodland</b>		
	400 B.C- A.D. 600	Saugeen (e.g. Saugeen, Port Maitland, Jack’s Reef Corner Notched point types)
		Couture (Snyders, Vanport point types)
<b>Middle to Late Woodland Tradition</b>		
	A.D. 600-900	Princess Point (Levanna-Like Point Types)
<b>Late Woodland: Ontario Iroquoian Tradition</b>		
Early	A.D. 900-1300	Glen Meyer/ Pickering
Middle	A.D. 1300-1400	Uren/ Middleport
Late	A.D. 1400-1550	Prehistoric Neutral (south-western Ontario)
		Prehistoric Huron (south-central/south-eastern Ontario)
<b>Late Woodland: Western Basin Tradition (south-western Ontario only)</b>		
Riviere au Vase	A.D. 500-800	Wayne-ware like ceramics
Younge	A.D. 800-1200	Younge Phase Ceramics
Springwells	A.D. 1200-1400	Springwells Phase Ceramics
Wolf	A.D. 1400-1550	Wolf Phase Ceramics
<b>Historic</b>		
Algonkian	A.D. 1500-1650	Odawa
Historic Neutral	A.D. 1550-1650	South-western Ontario
Historic Petun		South-central Ontario
Historic Hunron		South-central/South-eastern Ontario
St.Lawrence Iroquois		South-eastern Ontario
European		A.D. 1620-1700

Contact		sites
	A.D. 1800-	European Settlement
	A.D. 1800-	First Nations Resettlement

### 1.1.2.6 Post-Contact Property History

The Dufferin Wind Power Project study area and portion of the 230kv transmission line that falls within it are situated in the northeast corner of Melancthon Township (**Figures 1 & 2**). Recorded Euro-Canadian settlement of Melancthon Township began with the Horning family of Hamilton. In 1830, Lewis Horning, his extended family and other skilled tradesmen established a complex of mills on the upper reaches of the Pine River (Dean 1990:3). Subsequent settlement extended north into the Melancthon study area and south from Horning's Mills to occupy expansive areas of well drained and fertile sandy loam soils. The hamlet of Horning's Mills lies just southeast of the Dufferin Wind Power Project study area.

Horning occupied Lot 14, Concession 1 and 2 of the Old Survey (Belden 1880: 18). The Old Survey identified the four eastern concessions of the township that were laid out as early as 1830, and settled soon afterward (Belden 1880: 18). The concessions reflect the standard north-south grid orientation of colonial period surveys across southern Ontario. The western concessions of the New Survey, undertaken around 1848, were oriented at a 45° angle (northwest-southeast) to correspond with the alignment of Hurontario Street, a mid-nineteenth century colonization road (**Figure 5**).

Mulmur Township, located immediately east of the Melancthon study area, was first surveyed as early as 1823. The earliest settlement in the township is ascribed to the area of Stanton located in the south-eastern corner. However, by 1826, settlers were also occupying grants in the northwest corner of the township, the area of well drained and fertile sandy loam soils surrounding the current community of Honeywood (Sawden 1952: 8). Honeywood lies little more than a kilometre east of the eastern boundary of the Dufferin Wind Power Project study area (**Figure 1**).

Further research conducted at the Dufferin County Museum and Archives showed that patents from the crown for properties falling within the Dufferin Wind Power Project study area were issued between 1828 and 1878 (Patterson, 1921 & 1922).

Given the early to mid nineteenth century Euro-Canadian survey and settlement of Melancthon Township and the adjacent Mulmur Township, the Dufferin Wind Power Project study area (including the portion of the 230kv transmission line that falls within the study area) is considered to exhibit moderate to high potential for encountering early to mid-nineteenth century Euro-Canadian archaeological resources (**Figure 6**).

### 1.1.2.7 Property History Conclusions

Given the early to mid nineteenth century Euro-Canadian survey and settlement of Melancthon Township and the adjacent Mulmur Township, the Dufferin Wind Power Project study area (including the portion of the 230kv transmission line that falls within

the study area) is considered to exhibit moderate to high potential for encountering early to mid-nineteenth century Euro-Canadian archaeological resources (**Figure 6**).

### 1.1.3 Archaeological Context

#### 1.1.3.1 Registered Archaeological Sites

A search of the provincial archaeological site database maintained by Ontario Ministry of Tourism, Culture and Sport indicates that there are 46 registered archaeological sites within the study area (**Table 2**). All of these sites were identified as a result of assessments conducted by archaeologist Jim Wilson of Golder Associated Ltd. (Golder) in 2008 and 2009. An assessment conducted to fulfill a standard archaeological condition of the aggregate licensing approval process for the proposed Melancthon Quarry covered an area of 977 hectares and identified 22 archaeological sites (Golder Associates Ltd. 2009a). The assessment covered the following properties: part of Lots 18-23, Concession 1, Old Survey; part of Lots 18 and 19, Concession 2, Old Survey; part of Lots 17 to 20, Concession 3, Old Survey; and, part of Lots 16 to 19, Concession 4, Old Survey in the Township of Melancthon. Details pertaining to the second Golder assessment were not available at the time of report preparation. However, based on the Borden forms made available by Golder, a further 24 archaeological sites were identified during the assessment of properties extending from 15 Side Road at 4<sup>th</sup> Line to the east side of County Road 124 north of 25 Side Road.

**Table 2: Registered Archaeological Sites Located within Dufferin Wind Power Project Study Area.**

Borden No.	Site Name	Culture/Date	Site Type	Researcher
BaHb-8	Location 29	Intermediate Precontact; Recommendation Unknown ;	Isolated Find	Jim Wilson 2008
BaHb-9	Location 30	Intermediate Precontact; Recommendation Unknown ;  Euro-Canadian; Mid Nineteenth Century; Recommendation unknown;	Multi- Component: Isolated Find; Residential	Jim Wilson 2008
BaHb-10	Location 39	Intermediate Precontact; Recommendation Unknown;	Isolated Find	Jim Wilson 2008
BaHb-11	Location 40	Intermediate Precontact; Recommendation unknown;	Campsite	Jim Wilson 2008

BaHb-12	Location 41	Euro-Canadian; Late Nineteenth Century; Recommended for clearance;	Residential	Jim Wilson 2008
BaHb-13	Location 44	Euro-Canadian; Late Nineteenth to Early Twentieth Century; Recommended for clearance;	Residential	Jim Wilson 2008
BbHb-8	Location 1	Intermediate Precontact; Recommendation unknown;	Isolated Find	Jim Wilson 2008
BbHb-9	Location 2	Euro-Canadian; Late Nineteenth Century; Recommended for clearance ;	Residential	Jim Wilson 2008
BbHb-10	Location 3	Euro-Canadian; Early to Late Nineteenth Century; Recommended for Stage 3: Testing;	Residential	Jim Wilson 2008
BbHb-11	Location 4	Euro-Canadian; Late Nineteenth Century; Recommended for clearance;	Residential	Jim Wilson 2008
BbHb-12	Location 5	Euro-Canadian; Late Nineteenth Century; Recommended for clearance;	Residential	Jim Wilson 2008
BbHb-13	Location 6	Euro-Canadian; Mid to Late Nineteenth Century; Recommended for Stage 3: Testing;	Residential	Jim Wilson 2008
BbHb-14	Location 7	Euro-Canadian; Early to Late Nineteenth Century; Recommended for Stage 3: Testing;	Residential	Jim Wilson 2008
BbHb-15	Location 8	Euro-Canadian; Early to Late Nineteenth Century; Recommended for Stage 3: Testing;	Residential	Jim Wilson 2008

BbHb-16	Location 9	Euro-Canadian; Late Nineteenth Century; Recommended for clearance;	Residential	Jim Wilson 2008
BbHb-17	Location 10	Palaeo-Indian; Recommended for Stage 3: Testing;	Isolated Find	Jim Wilson 2008
BbHb-18	Location 11	Euro-Canadian; Mid to Late Nineteenth Century; Recommended for Stage 3: Testing;	Residential	Jim Wilson 2008
BbHb-19	Location 12	Euro-Canadian; Mid to Late Nineteenth Century; Recommended for Stage 3: Testing;	Residential	Jim Wilson 2008
BbHb-20	Location 13	Euro-Canadian; Late Nineteenth to Early Twentieth Century; Recommendation unknown;	Residential	Jim Wilson 2008
BbHb-21	Location 14	Euro-Canadian; Late Nineteenth Century; Recommendation not known;	Residential	Jim Wilson 2008
BbHb-22	Location 15	Euro-Canadian; Late Nineteenth Century, Recommendation unknown;	Residential	Jim Wilson 2008
BbHb-23	Location 16	Euro-Canadian; Mid Nineteenth Century; Recommendation unknown;	Residential	Jim Wilson 2008
BbHb-24	Location 17	Euro-Canadian; Mid Nineteenth Century; Recommendation unknown;	Residential	Jim Wilson 2008
BbHb-25	Location 18	Euro-Canadian; Mid Nineteenth Century; Recommendation unknown;	Residential	Jim Wilson 2008
BbHb-26	Location 19	Euro-Canadian; Late Nineteenth Century; Recommendation	Residential	Jim Wilson 2008

		unknown;		
BbHb-27	Location 20	Euro-Canadian; Late Nineteenth Century; Recommendation unknown;	Residential	Jim Wilson 2008
BbHb-28	Location 21	Euro-Canadian; Late Nineteenth Century; Recommendation unknown;	Residential	Jim Wilson 2008
BbHb-29	Location 22	Euro-Canadian; Late Nineteenth Century; Recommendation unknown;	Residential	Jim Wilson 2008
BbHb-30	Location 23	Intermediate Precontact; Recommendation unknown;	Campsite	Jim Wilson 2008
BbHb-31	Location 24	Intermediate Precontact; Recommendation unknown;	Isolated Find	Jim Wilson 2008
BbHb-32	Location 25	Euro-Canadian; Mid to Late Nineteenth Century; Recommended for Stage 3: Testing ;	Residential	Jim Wilson 2008
BbHb-33	Location 26	Intermediate Precontact; Recommended for clearance;	Isolated Find	Jim Wilson 2008
BbHb-34	Location 27	Intermediate Precontact; Recommended for clearance;	Isolated Find	Jim Wilson 2008
BbHb-35	Location 28	Euro-Canadian; Mid Nineteenth Century; Recommendation unknown;	Residential	Jim Wilson 2008
BbHb-36	Location 31	Euro-Canadian; Late Nineteenth Century; Recommended for clearance;	Residential	Jim Wilson 2008
BbHb-37	Location 32	Euro-Canadian; Early to Late Nineteenth Century; Recommended for Stage 3: Testing;	Residential	Jim Wilson 2008
BbHb-38	Location 33	Euro-Canadian; Late Nineteenth Century;	Residential	Jim Wilson 2008

		Recommendation unknown;		
BbHb-39	Location 34	Euro-Canadian; Mid Nineteenth Century; Recommendation unknown;	Residential	Jim Wilson 2008
BbHb-40	Location 35	Euro-Canadian; Mid Nineteenth Century; Recommendation unknown;	Residential	Jim Wilson 2008
BbHb-41	Location 36	Euro-Canadian; Late Nineteenth Century; Recommendation unknown;	Residential	Jim Wilson 2008
BbHb-42	Location 37	Euro-Canadian; Mid Nineteenth Century; Recommendation unknown;	Residential	Jim Wilson 2008
BbHb-43	Location 38	Euro-Canadian; Late Nineteenth Century; Recommendation unknown;	Residential	Jim Wilson 2008
BbHb-44	Location 42	Euro-Canadian; Late Nineteenth to Early Twentieth Century; Recommended for clearance;	Residential	Jim Wilson 2008
BbHb-45	Location 43	Euro-Canadian; Late Nineteenth to Early Twentieth Century; Recommended for clearance;	Residential	Jim Wilson 2008
BbHb-46	Location 45	Euro-Canadian; Late Nineteenth to Early Twentieth Century; Recommended for clearance;	Residential	Jim Wilson 2008
BbHb-47	Location 46	Intermediate Precontact; Recommended for Stage 3: Testing;	Isolated Find	Jim Wilson 2008

### **1.1.3.2 Previous Archaeological Field Work**

In addition to the archaeological assessments undertaken by Golder directly within the Dufferin Wind Power Project study area, several other major archaeological assessments have recently been initiated in close proximity to the Dufferin Wind Power Project study



area. Between 2004 and 2006, The Archaeologists Inc conducted archaeological assessment (Stages 1 and 2) for the Grey/Melancthon II Wind Projects located to the south and south-west of the Dufferin Wind Power Project study area (The Archaeologists Inc. 2004; 2005a; 2005b; &, 2006). One Historic Euro-Canadian site and three Precontact sites were identified but all were more than 5 kilometres from the Dufferin Wind Power Project study area. In 2007, Archaeological Assessments Inc. conducted a Stage 1 archaeological assessment of the proposed Honeywood Windpower Project located in the area immediately east of the northeast corner of the current study area.

Also in 2007, Timmins Martelle Heritage Consultants Inc. (Timmins Martelle) prepared a Stage 1 archaeological assessment of the proposed Heatherton/Maxwell Wind Farms in the Municipality of Grey Highlands, Grey County and Masonville/Shingley Wind Farms in Melancthon Township of Dufferin County (Timmins Martelle Heritage Consultants Inc. 2007). Two years later (2009), Timmins Martelle were back to conduct a Stage 2 archaeological assessment of the proposed Plateau Wind Power Project, a modified version of the earlier Heatherton/Maxwell- Masonville/Shingley Wind Farm project with components in the Municipality of Grey Highlands, Grey County and Melancthon Township in Dufferin County (Timmins Martelle Heritage Consultants Inc. 2009). Stage 2 assessment of the study area, which abuts the Dufferin Wind Power Project study area, yielded no cultural resources.

There are no other registered archaeological sites within 5 kilometres of the study area. Informal consultation with study area landowners indicated that Native artifacts have only rarely been found as a result of farming operations.

Of the 46 registered archaeological sites identified within the study area (**Table 2**), 36 represent scatters of historic domestic refuse and 10 represent Precontact sites. The 36 historic sites identified by Golder include 18 late nineteenth to early twentieth century sites and 18 early to mid-nineteenth century residential sites. Of the 10 Precontact sites identified during Golder's assessments in Melancthon Township, eight were considered isolated finds, while 2 were identified as campsites. Based on recommendations contained within the Melancthon Quarry report (Golder 2009a), the eight of the historic sites that yielded early to mid-nineteenth century cultural debris (BbHb-10, BbHb-13, BbHb-14, BbHb-15, BbHb-18, BbHb-19, BbHb-32 and BbHb-37) and two of the Precontact sites (an isolated Palao-Indian period scraper [BbHb-17] and a fragment of chipping detritus found as a result of shovel testing [BbHb-47]) were subjected to subsequent stages of archaeological assessment (Golder 2008b & 2009c). At the time of report preparation, it was not known what recommendations were made pertaining to the 24 sites identified during the second Golder assessment.

Given that the archaeological resources identified in association with the Melancthon Quarry assessment have been fully mitigated, the Melancthon Quarry study area is now considered to exhibit low archaeological potential (**Figure 6**).

## **1.2 Stage 1 Field Methods**

### **1.2.1 Assessment of Field Conditions**

Between April 19<sup>th</sup> and April 21<sup>st</sup> of 2010, archaeologist W. Bruce Stewart conducted a cursory reconnaissance of field conditions within the Dufferin Wind Power Project study area and portion of the proposed 230kv transmission line that fell within the wind farm study area. At that stage in the study, turbine locations had not been identified. It was anticipated that turbine locations, as well as the locations for proposed access roads and underground cable alignments would be determined during the summer of 2010.

However, the project was placed on hold for approximately 16 months before the design was formalized and work initiated on the Stage 2 assessment.

A representative selection of field photographs is presented in *Plates 2-6*.

The field reconnaissance provided an initial view of the study area as a candidate wind farm study area. The study area was found to overlie the full range of topographic features and soil deposits found within north central Melancthon Township.

## **1.3 Stage 1 Analysis and Conclusions**

On the basis of specific environmental and cultural factors examined during the Stage 1: Background Assessment, the Dufferin Wind Power Project study area is considered to exhibit a mix of low, moderate and high archaeological potential for Precontact Native, historic Native and early to mid-nineteenth century Euro-Canadian settlement. Low archaeological potential was ascribed to areas of disturbance primarily associated with municipal infrastructure, in particular roadways and their associated ditches, as well as drains. This reflected approximately 5% of the study area. Moderate to high archaeological potential for encountering Native and/or Euro-Canadian archaeological resources was ascribed to the remainder of the study area (approximately 95%). Stage 2 archaeological assessment is warranted within those areas identified as having moderate to high archaeological potential prior to development (*Figure 6*).

## **1.4 Stage 1 Recommendations**

CRM Group makes the following recommendations:

1. Due to the potential for encountering archaeological resources, it is recommended that archaeological assessment (Stage 2) be conducted for all turbine sites, as well as ancillary facilities such as access roads, underground cable alignments, collector lines, lay-down yards, transmission lines, the proposed substation site, the proposed point of interconnect etc, well in advance of any ground disturbance. There are only a few exceptions to the above recommendation. The first would be those areas previously subjected to archaeological assessment and for which no further archaeological assessment is required by the Ontario Ministry of Tourism,

- Culture and Sport (**Figure 6**). It should also be noted that all swamp and road crossings have been examined and determined to exhibit low archaeological potential (i.e. swamps and municipal roadways), and as such no further archaeological assessment is required. Furthermore, these areas are to be addressed by means of Horizontal Directional Drilling (HDD) (See **Appendix A** for charts, photos and detailed maps that show areas of low potential that are to be HDD). Finally, there are several areas where the underground cable alignments will be placed in the ditch running alongside municipal roadways. Given their low archaeological potential on the basis of previous disturbance, CRM Group recommends that no further archaeological assessment is required for these ditches (See **Appendix A** for detailed maps and photos that show areas of low potential such as ditches).
2. To facilitate visual assessment (Stage 2) of the proposed turbine sites, as well as ancillary facilities such as access roads, underground cable alignments, collector lines, lay-down yards, transmission lines, the proposed substation site, the proposed point of interconnect etc, it is recommended these impact zones be ploughed and allowed to weather prior to conducting the assessment. Please note that all ploughing should be conducted within the standards of normal agricultural ploughing (no chisel ploughing or deep ploughing) so as not to disturb archaeological resources buried below the current plough zone.

## **2.0 STAGE 2- ARCHAEOLOGICAL ASSESSMENT**

As identified during the Stage 1: Background Research, the Dufferin Wind Power Project study area is considered to exhibit a mix of low, moderate and high archaeological potential for Precontact Native, historic Native and nineteenth Century Euro-Canadian settlement. Given the potential for encountering Native and/or Euro-Canadian archaeological resources, Dillon Consulting Ltd. commissioned CRM Group to undertake Stage 2 archaeological assessment in conjunction with each of the proposed turbine sites, access roads and underground cable alignments, and a short section of the 230kv transmission line, as well as a site for the proposed substation and the point of interconnect.

### **2.1 Field Methods**

The *Standards and Guidelines for Consultant Archaeologists (2011)* produced by the Ontario Ministry of Tourism, Culture and Sport (OM TCS) stipulate that Stage 2: Archaeological Assessment must, whenever possible, be based upon the visual examination of recently ploughed and weathered ground (Standards and Guidelines: 30). The guidelines further specify that survey transects are to be spaced at a maximum interval of 5 metres (Standards and Guidelines: 30). When archaeological resources are found, the survey interval is to be decreased to 1 metre over a 20 metre radius around the find spot (Standards and Guidelines: 31). In light of these requirements, it is recognized that where possible, all of the proposed turbine sites, the portion of the 230kv transmission line that fell within the wind farm study area, collector lines, access roads, turnaround points, lay down yards, the proposed substation as well the point of interconnect, were to be surveyed by means of visual assessment of ploughed and weathered agricultural fields. Where ploughing was not possible (i.e. woodlots, hedge rows, etc.) assessment was conducted by means of manual shovel testing. All assessment was carried out at a maximum of 5 metre intervals (*Figures 7, 8 & Appendix A*).

In preparation for the visual assessment, the turbine sites, transmission line, access road alignments and underground cable alignments were ploughed in accordance with standard agricultural practice (i.e. turn the soil within the ploughzone but no new deep impacts; no use of a chisel plough). Newly exposed soils were then left to weather through one heavy or several moderate rain events. The rain served to ‘wash’ the newly ploughed surface and maximize visibility of any artifacts or other cultural materials exposed on the surface.

Following a review of proposed construction methodology, standard dimensions were identified for each of the specific features associated with the wind farm development. An area of 200 metres by 200 metres centering on the proposed location of the turbine was marked and ploughed for visual examination. The buffer surrounding the turbine includes the build envelope which represents the area of construction related disturbance, as well as the stockpiling of materials and vehicle movement. Access road alignments

were ploughed at a minimum width of 25 metres, and collector line paths and the portion of the 230kv transmission line assessed by CRM Group were ploughed at a minimum width of 20 metres. It was determined that impacts associated with the access roads, collector lines and portion of the transmission line (top soil stripping, stockpiling, etc.) would fit within that width.

In those situations where archaeological resources (sites) were encountered during the assessment, the survey interval was decreased to 1 metre over a 20 metre radius around the find spot. This was done to determine if the find was isolated or part of a broader scatter of cultural material. Once these observable site boundaries were identified, the location and general characteristics of the site were recorded and diagnostic artifacts, formal tools and an overall representative sample were collected. A hand-held Global Positioning System (GPS) unit (Garmin GPSmap 62s) was used to record UTM coordinates for all diagnostic artifacts and formal tools, as well as the scatter center point, and north, south, east and west site limits. All coordinates use NAD 83 as datum. All artifacts collected in conjunction with the Stage 2 assessment will be held by CRM Group in their Halifax Office for a short term until they are stored at a Regional artifact repository in South-western Ontario.

In areas where ploughing, and therefore visual assessment, was not possible (i.e. woodlots, pasture and lawn areas), shovel testing was conducted (**Figures 7, 8 & Appendix A**). This involved excavating small pits by hand at regularly spaced intervals. According to the Ontario Ministry of Tourism, Culture and Sport Guidelines, shovel test pits, measuring at least 30 centimetres in diameter, were spaced at maximum intervals of 5 metres (Standards and Guidelines: 32). Shovel test pits were excavated by shovel through the topsoil and at a minimum, into the first 5 centimetres of subsoil. The extracted soil was screened through 6 millimetre mesh hardware cloth to enhance artifact recovery. Once the backdirt was screened, it was returned to the hole, tamped and capped (where possible) by the original sod plug. The standard survey grid was maintained as closely as possible and any variation was documented and the rationale recorded. Where archaeological resources were encountered, shovel test excavation was continued on the survey grid to determine whether there were further positive test pits. If this produced sufficient archaeological resources to meet the criteria for making a recommendation to carry out a Stage 3 assessment, then no further Stage 2 work was conducted. If insufficient archaeological resources were found through continued survey on the grid to meet the criteria for continuing to Stage 3, then an intensified Stage 2 survey was conducted. This consisted of digging eight additional shovel test pits 2.5 metres within a radius of 5 metres around the positive test pit, as well as one 1 metre by 1 metre test unit over the positive shovel test pit.

Areas such as swamps and road crossings were not subjected to Stage 2 archaeological survey, as these areas exhibited low archaeological potential and are going to be crossed by means of HDD. To see a chart, mapping and photographs of the areas that were not surveyed because of low archaeological potential and HDD, see **Appendix A: Turbine Data Sheets**. A small number of underground cable segments will be run along ditches paralleling municipal roadways. These areas were also not surveyed due to their low

by CRM Group (remaining 5%) were those areas that exhibit low archaeological potential (i.e. swamp areas and pre-existing roadways) and areas of low potential due to previous disturbance such as ditches running along municipal roadways (See **Figure 6** as well as detailed maps in **Appendix A: Turbine Data Sheets** for areas not assessed due to low archaeological potential). 85% of the archaeological assessment consisted of pedestrian survey of ploughed and weathered field, while the remaining 10% consisted of shovel testing where shovel tests were dug to a minimum of 30 centimetres in diameter and 5 centimetres into subsoil. Every portion of the assessment of high potential areas (including both shovel testing and pedestrian survey) was carried out at 5 metre intervals.

It should be noted that all references to direction (i.e. north, south, east and west) are based on grid north as opposed to magnetic north. This was done to coordinate with existing concession and lot placement and to facilitate map referencing.

## **2.2 Record of Finds**

Stage 2: Archaeological Assessment for the Dufferin Wind Power Project study area was carried out between October 11, 2011 and December 15, 2011 by CRM Group. The assessment was directed by Tom Arnold under license number P006 (PIF# P006-015-2011) with the assistance of Field Director Angela J. Finnie, Project Director W. Bruce Stewart and field technicians Kiersten Green, Lisa Oleniuk, Rylan Armet, Nancy Vansas, Barbara Johnson, Brad Badow, Julie Edwards, Sara Dewitt, Bethany Staubitz and Marta Montero. Permission to enter onto all properties for the purposes of undertaking an archaeological assessment was obtained by Dillon Consulting Ltd.

As stated in the preceding section on methodology, CRM Group followed the 2011 Standards and Guidelines produced by the Ontario Ministry of Tourism, Culture and Sport in the archaeological assessment of the Dufferin Wind Power Project study area. In total, 53 turbine locations (49 locations and 4 alternate locations) and their associated access roads and underground cable alignments, collector lines, bump-outs, turnaround points, the O & M Building, a short section of the 230kv transmission line, as well as sites for the proposed substation and the interconnect station, were subjected to archaeological assessment (**Table 3.1**). All of these components, when possible, were ploughed and left to weather before being subjected to visual assessment or they were shovel tested at 5 metre intervals (**Figures 7, 8 & Appendix A**). Field visibility ranged from 80 percent to 100 percent (good to excellent) (**Plates 7 and 8**). In several locations, field conditions were found to be unacceptable and had to be additionally ploughed and left to weather before the assessment could be completed. Turbine sites were numbered between 1 and 49, and alternate turbine sites were numbered between 1 and 4 (i.e.

Alternate Site AT1, etc). Where multiple turbine locations are associated with a single access road and underground cable alignment, the sites are discussed as a single grouping.

Documentary records generated in the field during the Dufferin Wind Power Project Stage 2 archaeological assessment include photographs, annotated maps, drawings and field notes. Field documentation such as field notes, drawings and field maps are stored at CRM Group at 6040 Almon Street in Halifax, Nova Scotia. Digital photographs taken in the field are stored on the shared “Z” Drive on the computers at CRM Group at 6040 Almon Street in Halifax, Nova Scotia.

**Table 3.1: Summary of Results of Stage 2 Survey and Recommended Action**

<b>Date</b>	<b>Turbine Site</b>	<b>Cultural Resources</b>	<b>Recommended Action</b>	<b>Comments</b>
<b>10.11.11</b> <b>Weather:</b> <b>Sunny &amp; warm</b>	<b>T5/T6</b>			
	T5/T6 access road (shovel testing)	No cultural resources	No further archaeological assessment is required	
<b>10.12.11</b> <b>Weather:</b> <b>Overcast &amp; warm</b>	<b>T9</b>			
	T9 pad (shovel testing)	No cultural resources	No further archaeological assessment is required	
<b>10.13.11</b> <b>Overcast &amp; warm</b>	<b>T9</b>			
	T9 pad (shovel testing re-visit)	No cultural resources	No further archaeological assessment is required	
<b>10.14.11</b> <b>Weather:</b> <b>Overcast &amp; warm</b>	<b>T6/T7</b>			
	T6/T7 access road (shovel testing)	No cultural resources	No further archaeological assessment is required	
<b>10.17.11</b> <b>Weather</b> <b>sunny and cool</b>	<b>T10/T11/T12</b>			
	T10/T11/T12 access road	No cultural resources	No further archaeological assessment is required	
	T10 Turbine site	No cultural resources	No further archaeological assessment is required	
	T11 Turbine site	Historic	No further	Located in the

		resources	archaeological assessment is required	
<b>10.17.11 Weather overcast &amp; cool</b>	<b>T15/T16</b>			
	T15/T16 Access Road	No cultural resources	No further archaeological assessment is required	
	T15 Turbine site	No cultural resources	No further archaeological assessment is required	
	T16 Turbine site	No cultural resources	No further archaeological assessment is required	
<b>10.17.11 Weather is cloudy &amp; cool</b>	<b>T1/T2</b>			
	T1/T2 access road	No cultural resources	No further archaeological assessment is required	
	T1 turbine site	No cultural resources	No further archaeological assessment is required	
	T2 turbine site	No cultural resources	No further archaeological assessment is required	
<b>10.18.11 Weather sunny &amp; cool</b>	<b>T29</b>			
	T29 access road	No cultural resources	No further archaeological assessment is required	
	T29 turbine site	No cultural resources	No further archaeological assessment is	



			required	
<b>10.18.11 Weather: Overcast &amp; cool</b>	<b>T37/T38/T39</b>			
	T37/T38/T39 access road	No cultural resources	No further archaeological assessment is required	
	T37 turbine site	No cultural resources	No further archaeological assessment is required	
	T38 Turbine site	Isolated find spot; 1 flake;	No further archaeological assessment is required	Located in the center of the turbine pad near the top of a hill;
	T39 Turbine site	Thin lithic scatter; 2 utilized flakes; 1 flake;	No further archaeological assessment is required	Found at the intersection of the crane path and the turbine pad; Located in the south east corner of the turbine box;
<b>10.18.11 Weather: Partly cloudy &amp; Cool</b>	<b>T21/T22</b>			
	T21/T22 Access road	No cultural resources	No further archaeological assessment is required	
	T21 turbine site	No cultural resources	No further archaeological assessment is required	
	T22 turbine site	No cultural resources	No further archaeological assessment is required	
<b>10.18.11 Weather: Overcast &amp; cool</b>	<b>T28</b>			
	T28 access road	No cultural resources	No further archaeological assessment is required	
	T28 turbine site	No cultural resources	No further archaeological	

	T26 turbine site	No cultural resources	No further archaeological assessment is required	
<b>10.18.11</b> <b>Weather:</b> <b>Partly sunny &amp; warm</b>	<b>T25</b>			
	T25 access road	No cultural resources	No further archaeological assessment is required	
	T25 turbine site	No cultural resources	No further archaeological assessment is required	
<b>10.18.11</b> <b>Weather:</b> <b>Sunny &amp; warm</b>	<b>T33</b>			
	T33 access road	No cultural resources	No further archaeological assessment is required	
	T33 turbine site	No cultural resources	No further archaeological assessment is required	
<b>10.19.11</b> <b>Weather:</b> <b>Overcast &amp; cool</b>	<b>T3/T4/T5/T7/T8</b>			
	T3/T4/T5/T7/T8 access road (visual and shovel testing)	No cultural resources	No further archaeological assessment is required	
	T3 turbine site (part of it not ploughed, must come back to finish)	No cultural resources	No further archaeological assessment is required	
	T4 turbine site	No cultural resources	No further archaeological assessment is required	
	T5 turbine site	No cultural resources	No further archaeological	

			assessment is required	
	T7 turbine site (visual and shovel testing)	No cultural resources	No further archaeological assessment is required	
	T8 turbine site	No cultural resources	No further archaeological assessment is required	
<b>10.19.11</b>	<b>T30</b>			
<b>Weather: Overcast &amp; cool</b>	T30 access road	No cultural resources	No further archaeological assessment is required	
	T30 turbine site	No cultural resources	No further archaeological assessment is required	
<b>10.20.11</b>	<b>Substation</b>			
<b>10.21.11</b>	Substation access road (shovel testing)	No cultural resources	No further archaeological assessment is required	
<b>Weather: Overcast &amp; cool</b>	Substation site (shovel testing)	No cultural Resources	No further archaeological assessment is required	
<b>10.24.11</b>	<b>T19/T20</b>			
<b>Weather: Overcast &amp; cool</b>	T19/T20 access road	No cultural resources	No further archaeological assessment is required	
	T19 turbine site	No cultural resources	No further archaeological assessment is required	
	T20 turbine site	No cultural resources	No further archaeological assessment is required	
<b>10.24.11</b>	<b>T31/T32</b>			
<b>Weather: Overcast</b>	T31/T32 access road	No cultural resources	No further archaeological	

		artifacts; Stoneware, whiteware, yellowware, red earthenware;		Located in south-east corner of turbine pad;
	T32 Turbine site	No cultural resources	No further archaeological assessment is required	
<b>10.25.11 Weather: Cloudy &amp; cool</b>	<b>T35/T36</b>			
	T35/T36 access road	No cultural resources	No further archaeological assessment is required	
	T35 turbine site	Isolated find spot; 1 biface [made of white meta-quartzite];	No further archaeological assessment is required	Located 25 metres north of southern edge of field and 20 metres west of eastern edge of field; Isolated find spot;
	T36 turbine site	No cultural resources	No further archaeological assessment is required	
<b>10.25.11 Weather: Overcast &amp; cool</b>	<b>T41</b>			
	T41 access road	No cultural resources	No further archaeological assessment is required	
	T41 turbine site	No cultural resources	No further archaeological assessment is required	
<b>10.25.11 Weather: Sunny &amp;</b>	<b>Substation</b>			
	Substation site (re-visit)	No cultural resources	No further archaeological	

<b>cool</b>			assessment is required	
<b>10.31.11</b>	<b>Point of Interconnect</b>			
<b>Weather:</b> <b>Partly cloudy/ warm</b>	Point of Interconnect site	No cultural resources	No further archaeological assessment is required	
<b>11.01.11</b>	Point of Interconnect site (re-visit)	No cultural resources	No further archaeological assessment is required	
<b>11.02.11</b>	Point of interconnect site (re-visit)	No cultural resources	No further archaeological assessment is required	
<b>11.04.11</b>	Point of interconnect access road	No cultural resources	No further archaeological assessment is required	
<b>11.09.11</b>	<b>T9</b>			
<b>Weather:</b> <b>Overcast &amp; warm</b>	T9 access road (shovel tested)	No cultural resources	No further archaeological assessment is required	
	T9 turbine site	No cultural resources	No further archaeological assessment is required	
<b>11.10.11</b>	<b>T40</b>			
<b>Weather:</b> <b>Overcast &amp; cool</b>	T40 access road	No cultural resources	No further archaeological assessment is required	
	T40 turbine site	No cultural resources	No further archaeological assessment is required	
<b>11.10.11</b>	<b>T3</b>			
<b>Weather:</b> <b>Overcast &amp; cool</b>	T3 turbine site (re-visit)	No cultural resources	No further archaeological assessment is required	
<b>11.10.11</b>	<b>T4/T5 bump out</b>			
<b>Weather:</b> <b>Overcast &amp;</b>	T4/T5 bump-out	No cultural resources	No further archaeological	

	T6 turbine site	No cultural resources	No further archaeological assessment is required	
<b>11.10.11 Weather: Overcast &amp; cool</b>	<b>T7</b>			
	Access road re-visit (shovel testing and visual)	No cultural resources	No further archaeological assessment is required	
<b>11.10.11 Weather: Overcast &amp; cool</b>	<b>T8</b>			
	Access road re-visit and bump-outs	No cultural resources	No further archaeological assessment is required	
<b>11.10.11 Weather: Overcast &amp; cool</b>	<b>T19/T20</b>			
	T19/T20 bump-outs and access road additions (re-visit)	No cultural resources	No further archaeological assessment is required	
<b>11.10.11 Weather: Overcast &amp; cool</b>	<b>T42</b>			
	T42 access road and bump outs	No cultural resources	No further archaeological assessment is required	
	T42 turbine site	No cultural resources	No further archaeological assessment is required	
<b>11.14.11 Weather: Overcast &amp; cool</b>	<b>T17/T18</b>			
	T17/T18 access road and bump outs	No cultural resources	No further archaeological assessment is required	
	T17 turbine site	No cultural resources	No further archaeological assessment is required	
	T18 turbine site	No cultural	No further	

		resources	archaeological assessment is required	
<b>11.14.11 Weather: Overcast &amp; cool</b>	<b>T34</b>			
	T34 access road, bump-outs, turn-arounds, etc.	No cultural resources	No further archaeological assessment is required	
	T34 turbine site	No cultural resources	No further archaeological assessment is required	
<b>11.14.11 Weather: Overcast &amp; cool</b>	<b>T44</b>			
	T44 access road, bump-outs, turnarounds, etc.	No cultural resources	No further archaeological assessment is required	
	T44 turbine site	No cultural resources	No further archaeological assessment is required	
<b>11.15.11 Weather: Overcast &amp; cool</b>	<b>T27</b>			
	T27 turbine site (re-visit to complete)	No cultural resources	No further archaeological assessment is required	
<b>11.16.11 Weather: Overcast &amp; cool</b>	<b>T23</b>			
	T23 access road, bump-outs, turnarounds, etc.	No cultural resources	No further archaeological assessment is required	
	T23 turbine site	No cultural resources	No further archaeological assessment is required	
<b>11.16.11 Weather: Overcast &amp; cool</b>	<b>T43</b>			
	T43 access road, bump-outs, turnarounds, etc.	No cultural resources	No further archaeological assessment is required	
	T43 Turbine site	Historic scatter; [nineteenth	<b>Stage 3: CSP &amp; Testing</b>	Located in the north-east

		printer ironstone;		
<b>11.16.11 Weather: Overcast &amp; cool</b>	<b>T24</b>			
	T24 access and bump-outs	Historic scatter; [twentieth century-Domestic]; Modern porcelain, ironstone, semi-porcelain, glass, wire nail; 100 artifacts in total;	No further archaeological assessment is required	Located on the bend in the access road, just before it meets the turbine pad; It is 45 metres east/west by 20 metres north/south
	T24 turbine site	No cultural resources	No further archaeological assessment is required	
<b>11.16.11 Weather: Overcast &amp; cool</b>	<b>T11</b>			
	T11 access road (re-visit to assess turn around point)	No cultural resources	No further archaeological assessment is required	
<b>11.17.11 Weather: Overcast &amp; cold w/ light snow (no accumulation)</b>	<b>T46/T47</b>			
	T46/T47 access roads and collect lines	No cultural resources	No further archaeological assessment is required	
	T46 turbine site	No cultural resources	No further archaeological assessment is required	
	T47 turbine site	No cultural resources	No further archaeological assessment is required	



<b>11.17.11</b> <b>Weather:</b> <b>Weather:</b> <b>Overcast &amp; cold w/ light snow (no accumulation)</b>	<b>Collector lines &amp; staging areas</b>			
	Collector line from T46 to T47	No cultural resources	No further archaeological assessment is required	
	Collector line and staging area from T45 to intersection of 8 <sup>th</sup> Line and Sideroad 20	No cultural resources	No further archaeological assessment is required	
	Collector line and staging area from 8 <sup>th</sup> Line NE and Sideroad 20 and T43	No cultural resources	No further archaeological assessment is required	
	Collector line from 6 <sup>th</sup> Line NE to T47	No cultural resources	No further archaeological assessment is required	
<b>11.17.11</b> <b>Weather:</b> <b>Weather:</b> <b>Overcast &amp; cold w/ light snow (no accumulation)</b>	<b>Crane paths</b>			
	Crane path from T43 to Sideroad 20	No cultural resources	No further archaeological assessment is required	
	Crane path from 6 <sup>th</sup> Line NE to T47	No cultural resources	No further archaeological assessment is required	
<b>11.18.11</b> <b>Weather:</b> <b>Partly cloudy &amp; cool</b>	<b>T10/T9</b>			
	Access road re-visit (shovel testing)	No cultural resources	No further archaeological assessment is required	
<b>11.21.11</b> <b>Weather:</b> <b>Sunny &amp; cool</b>	<b>T13/T14, MET Tower and O &amp; M Building</b>			
	T13/T14 access road, bump outs, O & M Building and lay-down area	No cultural resources	No further archaeological assessment is required	
	T13 turbine site	No cultural resources	No further archaeological assessment is required	

		Domestic]; Small scatter of 14 historic artifacts;	required	MET tower site; A 30 metre by 12 metre area;
<b>11.21.11</b> <b>Weather:</b> <b>Sunny &amp; cool</b>	<b>Collector lines and staging areas</b>			
	Collector line from T14 to County Road 124	No cultural resources	No further archaeological assessment is required	
	Collector line from T15 to 3 <sup>rd</sup> Line and staging area (shovel tested)	No cultural resources	No further archaeological assessment is required	
<b>11.21.11</b> <b>Weather:</b> <b>Sunny &amp; cool</b>	<b>T15</b>			
	T15 expansion (re-visit)	No cultural resources	No further archaeological assessment is required	
<b>11.21.11</b> <b>Weather:</b> <b>Sunny &amp; cool</b>	<b>T45</b>			
	T45 access road and bump outs	No cultural resources	No further archaeological assessment is required	
	T45 turbine site	No cultural resources	No further archaeological assessment is required	
<b>11.21.11</b> <b>Weather:</b> <b>Sunny &amp; cool</b>	<b>T48</b>			
	T48 access road	No cultural resources	No further archaeological assessment is required	
	T48 turbine site	Historic scatter; [late nineteenth century to early twentieth century-	No further archaeological assessment is required	Located on the north-eastern edge of the turbine pad; It is a

		Domestic];		farmstead occupation Foundation and well found; Foundation located 10 metres west of scatter;
<b>11.22.11 Weather: Overcast &amp; cool</b>	<b>T49</b>			
	T49 access road and turnaround point	No cultural resources	No further archaeological assessment is required	
	T49 turbine pad	No cultural resources	No further archaeological assessment is required	
<b>11.22.11 Weather: Overcast &amp; cool</b>	<b>Collector lines and staging areas</b>			
	Collector line from T17 to T18	No cultural resources	No further archaeological assessment is required	
	Collector line and staging area from 8 <sup>th</sup> Line to T41	No cultural resources	No further archaeological assessment is required	
	Collector line and staging area from 8 <sup>th</sup> Line to County road 21	No cultural resources	No further archaeological assessment is required	
	Staging area from T29 to 8 <sup>th</sup> Line	No cultural resources	No further archaeological assessment is required	
	Staging area at 5 <sup>th</sup> Line and Sideroad 250	No cultural resources	No further archaeological assessment is required	
	Collector line from T40 to T39, T38, T37	No cultural resources	No further archaeological assessment is required	

Sideroad to CR 124		required	
Collector line from house at 30 <sup>th</sup> Sideroad and CR 124 to T3 (visual and shovel testing)	No cultural resources	No further archaeological assessment is required	
Staging area and collector line paralleling 3 <sup>rd</sup> Line from T12 (visual and shovel testing)	No cultural resources	No further archaeological assessment is required	
Collector lines and turnaround from T24 to 4 <sup>th</sup> Line	No cultural resources	No further archaeological assessment is required	
Collector line from 4 <sup>th</sup> Line to T42	No cultural resources	No further archaeological assessment is required	
Collector line from T42 to T32	No cultural resources	No further archaeological assessment is required	
Collector line from T32 to T31	No cultural resources	No further archaeological assessment is required	
Collector line from T31 to 4 <sup>th</sup> Line	No cultural resources	No further archaeological assessment is required	
Collector line from T23 to 3 <sup>rd</sup> Line	No cultural resources	No further archaeological assessment is required	

<b>11.22.11</b> <b>Weather:</b> <b>Overcast &amp; cool</b>	<b>Crane paths</b>			
	Crane path expansions at 10 <sup>th</sup> Line NE and 5 <sup>th</sup> Line intersection	No cultural resources	No further archaeological assessment is required	
<b>11.22.11</b> <b>Weather:</b> <b>Overcast &amp; cool</b>	<b>T29 access road</b>			
	T29 access road turning radius expansion & bump-out expansion	No cultural resources	No further archaeological assessment is required	
<b>11.23.11</b> <b>Weather:</b> <b>Partly cloudy &amp; cool</b>	<b>Collector lines and staging areas</b>			
	Collector line from T48 to T49	No cultural resources	No further archaeological assessment is required	
	Two collector lines and expanded staging area associated with T37	No cultural resources	No further archaeological assessment is required	
	Collector line and staging area from County road 21 to swamp	No cultural resources	No further archaeological assessment is required	
	Collector lines and staging area from the swamp to T33	No cultural resources	No further archaeological assessment is required	
	Collector line and crane path from T33 access road to T34	No cultural resources	No further archaeological assessment is required	
	Collector line and staging area on either side of 4 <sup>th</sup> Line from T26	No cultural resources	No further archaeological assessment is required	
	Collector lines associated with T31 and T32	No cultural resources	No further archaeological assessment is required	

<b>&amp; cool</b>			assessment is required	
	T32 access road expansion	No cultural resources	No further archaeological assessment is required	
	T35/T36 access road expansion	No cultural resources	No further archaeological assessment is required	
<b>11.23.11 Weather: Partly cloudy &amp; cool</b>	<b>Transmission line</b>			
	Transmission line from 4 <sup>th</sup> Line to T24	No cultural resources	No further archaeological assessment is required	
<b>11.24.11 Weather: Partly cloudy &amp; cool</b>	<b>Collector lines</b>			
	Shovel tested small airstrip between T17 and T18 along collector line	No cultural resources	No further archaeological assessment is required	
<b>11.24.11 Weather: Partly cloudy &amp; cool</b>	<b>Transportation routes improvements</b>			
	County Road 124 and 30 <sup>th</sup> Sideroad NW	No cultural resources	No further archaeological assessment is required	
	County Road 124 and 30 <sup>th</sup> Sideroad SE	No cultural resources	No further archaeological assessment is required	
	3 <sup>rd</sup> Line and County Road 21 NW	No cultural resources	No further archaeological assessment is required	
	3 <sup>rd</sup> Line and County Road 21 SE	No cultural resources	No further archaeological assessment is required	

	4 <sup>th</sup> Line and County Road 21 SW	No cultural resources	No further archaeological assessment is required	
	30 <sup>th</sup> Sideroad and 5 <sup>th</sup> Line west side	No cultural resources	No further archaeological assessment is required	
	County Road 124 and County road 20 NW	No cultural resources	No further archaeological assessment is required	
<b>11.24.11</b> <b>Weather:</b> <b>Partly cloudy &amp; cool</b>	<b>Transmission line</b>			
	Transmission line 25 metre corridor through woodlot east of T24 (shovel testing)	No cultural resources	No further archaeological assessment is required	
	Transmission line paralleling County Road 21 between T42 and 5 <sup>th</sup> Line	No cultural resources	No further archaeological assessment is required	
	Transmission line from 5 <sup>th</sup> Line to 8 <sup>th</sup> Line NE	No cultural resources	No further archaeological assessment is required	
	Transmission line from 5 <sup>th</sup> Line to wetland west of T41	No cultural resources	No further archaeological assessment is required	
	Transmission line from north/west of wetland to near the end of 6 <sup>th</sup> Line NE	No cultural resources	No further archaeological assessment is required	
<b>12.01.11</b> <b>Weather:</b> <b>Cloudy &amp; cool</b>	<b>Alternate Site 2</b>			
	Began shovel testing for alternate site 2	No cultural resources	No further archaeological assessment is required	
<b>12.02.11</b> <b>Weather:</b>	<b>Alternate Site 2</b>			
	Continued	No cultural	No further	

<b>&amp; warm</b>	line, transmission line	[Late Nineteenth Century-Domestic]; 111 Historic artifacts; Late nineteenth century;	assessment is required	near 6 <sup>th</sup> Line
	Alt. 1 turbine site	No cultural resources	No further archaeological assessment is required	
<b>12.05.11 Weather: Partly sunny &amp; warm</b>	<b>Alternate Site 3</b>			
	Alt. 3 access road	No cultural resources	No further archaeological assessment is required	
	Alt. 3 turbine site	No cultural resources	No further archaeological assessment is required	
<b>12.05.11 Weather: Partly sunny &amp; warm</b>	<b>Alternate Site 4</b>			
	Alt. 4 access road, turnaround point and collector line to T45	No cultural resources	No further archaeological assessment is required	
	Alt. 4 turbine site	No cultural resources	No further archaeological assessment is required	
<b>12.05.11 Weather: Partly sunny &amp; warm</b>	<b>Collector Line</b>			
	Collector line from T48 that parallels 6 <sup>th</sup> Line from staging area at 6 <sup>th</sup> Line to	No cultural resources	No further archaeological assessment is required	



	woodlot to the North-west			
<b>12.06.11</b> <b>Weather:</b> <b>Overcast &amp; cold</b>	<b>Alternate Site 2</b>			
	Finished shovel testing and visual assessment of turbine site and collector line	No cultural resources	No further archaeological assessment is required	
<b>12.07.11</b> <b>Weather:</b> <b>Overcast &amp; cold</b>	<b>Alternate Site 2</b>			
	Collector line was moved, shovel tested new location of line. Alt. 2 complete	No cultural resources	No further archaeological assessment is required	
<b>12.07.11</b> <b>Weather:</b> <b>Overcast &amp; cold</b>	<b>Transmission Line</b>			
	Small area of transmission line paralleling access road to T41 (shovel testing)	No cultural resources	No further archaeological assessment is required	
<b>12.15.11</b> <b>Weather:</b> <b>Overcast &amp; cold</b>	<b>Collector Line</b>			
	T26 collector line running southeast towards T27	No cultural resources	No further archaeological assessment is required	
<b>12.15.11</b> <b>Weather:</b> <b>Overcast &amp; cold</b>	<b>T18</b>			
	T18 access road (re-visit to assess changes to layout)	No cultural resources	No further archaeological assessment is required	
<b>12.15.11</b> <b>Weather:</b> <b>Overcast &amp; cold</b>	<b>Transmission Line</b>			
	Extension of transmission line staging area near T41 (re-visit)	No cultural resources	No further archaeological assessment is required	

The following discussion of the archaeological field assessment results is divided into four subsections for turbine locations: no cultural resources found; isolated finds; cultural resources requiring no further evaluation; and, cultural resources requiring further evaluation (**Table 3.2**). Where multiple turbine locations are associated with a single

<b>No Finds- No Further Archaeological Assessment Required</b>	43	T1 & T2, T3 & T4 & T5 & T6 & T7 & T8, T9, T10 & T12, T 13& T14, T15 & T16, T17 & T18, T19 & T20, T21 & T22, T23, T25, T26, T27, T28, T29, T30, T32, T33, T34, T36, T37, T40, T41, T42, T44, T45, T46 & T47, T49, Substation, Point of Interconnect, AT2, AT3, AT4
<b>Isolated Finds- No Further Archaeological Assessment Required</b>	2	T35, T38
<b>Cultural Resources- No Further Archaeological Assessment Required</b>	6	T11, T24, T39, T48, MET Tower , AT1
<b>Cultural Resources- Further Archaeological Assessment Required</b>	2	T31, T43

### ***2.2.1 No Cultural resources - Turbine Locations***

Of the 53 turbine and alternate turbine locations assessed by CRM Group, 43 were devoid of any observable cultural resources (including 3 alternate turbine sites) (**Table 3.2**). The proposed locations of the substation, as well as the point of interconnect were also devoid of any observable cultural resources. In all circumstances, the visibility ranged from good (80%) to excellent (100%) (**Appendix A: Turbine Site Plans**). In each instance, the turbine site (approximately 200 metres by 200 metres), access roads (approximately 25 metres in width), collector lines (approximately 20 metres in width), bump outs, turnaround points, staging areas (approximately 100 metres by 50 metres), proposed substation property and the proposed point of interconnect, were walked at 5 metre intervals. Where visual assessment was not possible (i.e. a small portion of T7, the substation property and the point of interconnect) shovel testing was conducted at 5 metre intervals, where pits were dug to a minimum of 30 centimetres wide and at least 5 centimetres into the subsoil (**Figures 7, 8 & Appendix A**).

Given the absence of observable cultural resources, CRM Group recommends that no further archaeological assessment is required for these 43 turbine locations (including 3 alternate turbine locations), the proposed substation property and the proposed point of interconnect (**Table 3.2**).

### **2.2.2 Isolated Finds - Turbine Locations**

Isolated finds were made in conjunction with two of the proposed turbine locations (**Table 3.2**). These are discussed separately below in numerical sequence.

#### **Turbine Sites T37, T38 and T39**

Turbine sites T37 and T38 are located within Lot 25, Concession 10 of Melancthon Township. Turbine site T39 is located within Lot 24, Concession 9 of Melancthon Township. The sites are situated between 10<sup>th</sup> Line NE and 8<sup>th</sup> Line NE, west of 5<sup>th</sup> Line. Access to the proposed location of turbines T37, T38 and T39 was gained from 10<sup>th</sup> Line (**Figure 2**). The access road extends southwest from 10<sup>th</sup> Line for a distance of approximately 1 kilometre through active agricultural fields. The turbine sites extend west from the access road a distance of approximately 200 metres into active agricultural fields.

Visual assessment at 5 metre intervals was carried out on October 18, 2011 under overcast and cool weather conditions. The field had been recently ploughed and weathered by several moderate rain events. Ground visibility was excellent (100%) (**Appendix A: Turbine sites T37, T38 and T39 Site Plans**).

Assessment of the T37 turbine site yielded no evidence of cultural resources. However, an isolated bifacial thinning flake was recovered in the middle of the turbine box near the top of a hill on the T38 turbine site. Assessment of the T39 site yielded a small lithic scatter, which will be discussed in detail under section 4.2.3: Cultural Resources Recovered, requiring no further archaeological assessment.

The isolated bifacial thinning flake recovered on T38 measures 32 millimetres long, 26 millimetres wide by 3 millimetres thick and is made of Onondaga chert (**Plate 9**). This find will be registered with the Ontario Ministry of Tourism, Culture and Sport and assigned a borden number at a later date. Intensified assessment at 1 metre intervals over a 20 metre radius did not reveal any further cultural resources.

This artifact has been inventoried using a numeric coding system that incorporates functional classes and groups adapted from South (1977) (**Appendix B: Archaeological Inventories**).

Given the isolated context in which this artifact was found within the T38 turbine area, CRM Group recommends that no further archaeological assessment is required for T37, T38 and T39 as well as their associated underground cable alignments, access road, etc.

#### **Turbine Sites T35 and T36**

Turbine sites T35 and T36 are located within Lot 22 and 23, Concession 4 of Melancthon Township. The sites are situated between 5<sup>th</sup> Line and 4<sup>th</sup> Line, north of 20<sup>th</sup> Sideroad. Access to the proposed location of turbines T35 and T36 was gained from 5<sup>th</sup> Line (**Figure 2**). The access road extends east from 5<sup>th</sup> Line for a distance of approximately 600 metres through active agricultural fields. The turbine sites extend north and south

Assessment of the T36 turbine site yielded no evidence of cultural resources. However, an isolated “Lorraine quartz” biface fragment was recovered 25 metres north of the southern edge of the field and 20 metres west of the eastern edge of the field on the T35 turbine site.

The biface recovered on T35 measures 71 millimetres long, 39 millimetres wide by 13 millimetres thick and is made of a white to light-grey Lorraine quartz (**Plate 10**). The closest possible source of this Lorraine quartz is the Le Croche Mountains, which are a series of hills that are located along the north shore of Lake Huron/ Georgian Bay near Manitoulin Island. The widest part of the tool occurs at the break. The opposite end is rounded and not pointed, which may indicate it was the hafted end of the tool. A microscopic examination (30x) of the edge shows light to moderate grinding on both edges. This is consistent with this area being hafted. Intensified assessment at 1 metre intervals over a 20 metre radius did not reveal any further cultural resources. This find will be registered with the Ontario Ministry of Tourism, Culture and Sport and assigned a borden number at a later date.

This artifact has been inventoried using a numeric coding system that incorporates functional classes and groups adapted from South (1977) (**Appendix B: Archaeological Inventories**).

Given the isolated context in which this artifact was found within the T35 turbine area, CRM Group recommends that no further archaeological assessment is required for T35 and T36 as well as their associated underground cable alignments, access road, etc.

### **2.2.3 Cultural Resources Requiring No Further Evaluation**

Cultural resource finds requiring no further evaluation were made in conjunction with six of the proposed turbine locations (including 1 alternate turbine location) (**Table 3.2**).

These locations are discussed separately below.

#### **Turbine Sites T10, T11 & T12**

Turbine site T10 is located within Lot 29, Concession 2 in Melancthon Township, and turbine sites T11 and T12 are located within Lot 28, Concession 2 in Melancthon Township. These sites are situated between 3<sup>rd</sup> Line and County Road 124, just south of 30<sup>th</sup> Sideroad and north of County Road 21. Access to the proposed turbine sites was gained from 3<sup>rd</sup> Line (**Figure 2**).

The access road for turbine sites T10, T11 and T12 extends from 3<sup>rd</sup> Line east for a distance of approximately 600 metres, through active agricultural fields. The T10 turbine site extends north from the access road a distance of 200 metres into active agricultural fields, while the T11 and T12 sites extend south from the access road a distance of 200 metres into active agricultural fields.

Archaeological assessment at 5 metre intervals was conducted on October 17, 2011 under sunny and cool conditions. The fields had been recently ploughed and weathered by several moderate rain events. Ground visibility was excellent (100%) (**Appendix A: Turbine Sites T10, T11 and T12 Site Plans**). Archaeological assessment of turbine sites T10 and T12 did not yield any cultural resources. However, a large nineteenth century Euro-Canadian domestic site was discovered in the middle of turbine site T11.

The large late nineteenth to early twentieth century historic scatter, measuring roughly 40 metres north/south by 40 metres east/west, was located in the center of turbine site T11, close to the top of a small knoll.

A total of 129 artifacts were observed within this historic site of the T11 turbine site. Among the cultural resources observed in the field, ceramics represented 67% (n=86), glass represented 31% (n=40) and “other” (including coal, slate and a snap fastener) represented 2% (n=3). A representative sample of 39 artifacts (30% of total number of artifacts) was collected. Collection criteria focussed on diagnostic artifacts and/or objects. Initially, the scatter was thought to exhibit the characteristics of a site requiring Stage 3 archaeological assessment. This is why extensive artifact analysis was conducted on this site. However, after a detailed analysis and careful assessment, it was determined that Site 1 of T11 did not warrant a recommendation for Stage 3 assessment. No further archaeological assessment is required for T11.

### **Material Culture Analysis of Historic Site 1**

A sample collection of 39 Euro-Canadian artifacts was removed from Site 1 on turbine site T11. The manufacturing dates of this material suggest that the principal occupation may have occurred in the latter half of the nineteenth century and continued into the early twentieth century. The artifact sample (**Table 4.1**) includes the following: a selection of transfer printed ironstone (n=5), undecorated ironstone (n=3), yellow earthenware (n=3), red earthenware (n=2), salt-glazed stoneware (n=1), semi-porcelain (n=6), brown earthenware (n=2), painted whiteware (n=1), porcelain (n=2), vitrified earthenware (n=6), clear glass (n=3), aqua glass (n=1), brown glass (n=1), dark blue glass (n=1), slate (n=1) and a snap fastener (n=1). The artifacts have been inventoried using a numeric coding system that incorporates functional classes and groups adapted from South (1977) (**Appendix B: Archaeological Inventories**).

### **Food Preparation and Consumption**

The foodwares or kitchen group consists of those objects pertaining to food preparation, preservation, storage, table service, discarded leftovers and waste. With a total of 37 (95% of collected sample) artifacts, it comprised the largest category on Site 1, T11.

TOTAL FOOD PREPARATION/CONSUMPTION		37	95
<b>UNASSIGNED ACTIVITIES</b>			
	Snap Fastener	1	2.5
	Miscellaneous Material	1	2.5
	<b>TOTAL UNASSIGNED ACTIVITIES</b>		5
	<b>TOTAL ARTIFACTS</b>	39	100

### Ceramics

Ceramic tableware and utilitarian vessels were the most common object type (n= 23, 74.1%) in the sample from Site 1 on turbine site T11. Of these, the three most common types of ceramics were ironstone (25.8%, n=8), vitrified white earthenware (19.3%, n=6) and semi-porcelain (19.3%, n=6) (**Plate 18**). The manufacturing dates of this material suggest that the principal occupation may have occurred in the latter half of the nineteenth century and continued into the early twentieth century. Ironstone is generally seen as an indication of a post-1850 occupation (South1977:211). The ironstone occurred in both transfer printed (16.1%, n=5) and undecorated styles (9.7%, n=3). Two of the pieces of transfer-printed ironstone were also decorated in a flow blue style, a technique most popular between 1840 and 1870 (Burke 1991: 41). The sample also contained vitrified white earthenware which represented 19.3% (n=6) of the total sample collected. Three of these vitrified earthenware fragments were transfer printed, most often recovered in contexts dating from 1850 onwards (Burke 1991: 48). Also recovered in the sample was a single piece of pained whiteware (3.2%), which is commonly seen between 1840 and 1860 (Kenyon, ACO Guide). Finally, two pieces of porcelain represented 6.5% of the total artifact sample collected. Porcelain is not introduced until the twentieth century and is often seen as an indication of a later occupation (Kenyon, ACO Guide).

The sample of utilitarian vessels consisted of 2 sherds of red earthenware (6.5%), 3 sherds of yellow earthenware (9.7%), 2 sherds of brown earthenware (6.5%) and a single piece of salt-glazed stoneware (3.2%) which had a dark yellow glaze on the interior and a light yellow and dark yellow banded glaze on the exterior. Stoneware was not introduced until the 1870s, which further supports the idea of a late occupation at this site (Kenyon, ACO Guide).

**Table 4.2: Summary of T11 Historic Site 1 Sample Ware Types**

Ware/decoration	Total	% of Ceramics
<b>FINE TABLEWARE</b>		
Ironstone		
	Brown Transfer Print	3
		9.7

	Blue Flow Transfer Print	2	6.5
	Undecorated	3	9.7
Whiteware			
	Painted	1	3.2
Vitrified Refined White Earthenware			
	Undecorated	2	6.5
	Moulded	1	3.2
	Transfer Printed	3	9.7
Porcelain			
	Moulded	2	6.5
Semi-porcelain			
	Transfer Printed	6	19.1
	<b>TOTAL FINE WARES</b>	<b>23</b>	<b>74.1</b>
<b>COARSE UTILITARIAN WARE</b>			
Earthenware			
	Red	2	6.5
	Yellow	3	9.7
	Brown	2	6.5
Stoneware			
	Salt-glazed	1	3.2
	<b>TOTAL COARSE WARES</b>	<b>8</b>	<b>25.9</b>
<b>TOTALS</b>		<b>31</b>	
% of Ceramics			<b>100</b>

### Glass

The sample contained 6 (15% of collected sample) glass fragments, identified as bottle glass (*Table 4*). The glass occurred in a variety of colours including aqua (n=1), dark blue (n=1), brown (n=1) and clear (n=3) (*Plate 19*).

### Personal Artifacts

One single metal snap fastener was recovered on Site 1 of turbine site T11 (*Plate 19*). It is a clasp fastener that would snap into another metal component on the opposite side of the garment, as opposed to a button that would be sewn on and secured through a hole in the material.

### Unassigned Activities

An unidentified fragment of slate, classified as miscellaneous material was also included in the sample (*Plate 19*).

### Artifact Summary

The main artifact categories within the T11 Site 1 sample were ceramics (n=31) and bottle glass (n=6). The relative scarcity of pre-1840 ceramics fails to constitute a concentration of early ceramics or evidence of a pre-1840s occupation. The prominence of ironstone and semi-porcelain within the ceramic sample suggests that the principal

## **Conclusion**

Assessment of the T10, T11 and T12 turbine sites, as well as their associated access road yielded evidence of a historic scatter on turbine site T11, located in the middle of the turbine pad on top of a small knoll. The scatter is approximately 40 metres north/south by 40 metres east/west. Material culture analysis suggests an occupation that extended throughout the latter half of the nineteenth century into the early twentieth century. A preliminary review of historical documentation suggests that the lot had been occupied from at least the 1860s through the early twentieth century, a date that supports the conclusions drawn from the artifact assemblage analysis.

Due to the modern nature of the cultural resources recovered, further investigation is not warranted. CRM Group recommends that no further archaeological assessment is required for T10, T11 and T12 turbine areas and access road.

## **Turbine Site 24**

Turbine site T24 is located within Lot 27, Concession 3 of Melancthon Township. The site is situated between 3<sup>rd</sup> Line and 4<sup>th</sup> Line, just north of County Road 21. Access to the proposed turbine site was gained from 3<sup>rd</sup> Line (**Figure 2**).

The access road extends from 3<sup>rd</sup> Line west for a distance of approximately 600 metres through active agricultural fields. The turbine site extends west from the end of the access road a distance of 200 metres through active agricultural fields.

Visual assessment at 5 metre intervals was conducted on Wednesday November 16, 2011 under overcast and cool conditions. The field had been recently ploughed and weathered by several moderate rain events. Ground visibility was excellent (100%) (**Appendix A: Turbine Site T24 Site Plan**). No cultural material was encountered within the turbine location; however, a dense scatter of twentieth century domestic Euro-Canadian material was identified within the access road.

Assessment revealed a scatter consisting of approximately 100 historic artifacts, including twentieth century porcelain, semi-porcelain, ironstone, transfer printed ironstone, glass, an ointment jar, a hydro insulator and a wire nail (**Plates 11 & 12**). The only makers mark found is of the Albert pattern from a Dudson Willcox & Till plate, which suggests the pottery was made after 1900 (Kenyon, ACO Guide). Wire nails were also not introduced until the very late 1890s, into the early 1900s (Kenyon, 2008). This also suggests that the scatter is quite modern. Finally, the ointment jar recovered has a “mentholatum” trademark; a company that was created in 1898. The white “milkglass”



that it is made from appeared at the earliest in 1890 (Horn, 2005). The site is approximately 45 metres east/west by 20 metres north/south.

The artifacts have been inventoried using a numeric coding system that incorporates functional classes and groups adapted from South (1977) (*Appendix B: Archaeological Inventories*).

Due to the modern nature of the cultural resources recovered, further investigation is not warranted. CRM Group recommends that no further archaeological assessment is required for the T24 turbine area and access road.

### **Turbine Sites T37, T38 & T39**

Turbine sites T37 and T38 are located within Lot 25, Concession 10 of Melancthon Township. Turbine site T39 is located within Lot 24, Concession 9 of Melancthon Township. The sites are situated between 10<sup>th</sup> Line NE and 8<sup>th</sup> Line NE, west of 5<sup>th</sup> Line. Access to the proposed location of turbines T37, T38 and T39 was gained from 10<sup>th</sup> Line (*Figure 2*).

The access road extends southwest from 10<sup>th</sup> Line for a distance of approximately 1 kilometre through active agricultural fields. The turbine sites extend west from the access road a distance of approximately 200 metres through active agricultural fields.

Visual assessment at 5 metre intervals was carried out on October 18, 2011 under overcast and cool weather conditions. The field had been recently ploughed and weathered by several moderate rain events. Ground visibility was excellent (100%) (*Appendix A: Turbine Sites T37, T38 and T39 Site Plans*).

This area lies within Lots 24 and 25 of Concession 10 in Melancthon Township. Early survey notes by Gibson show that this is a dryer region, likely due to a brook with a gravelly bottom that runs to the north-east (1853). Tree species included Balm of Gilead (a natural cross between balsam poplar and the eastern cottonwood), maple, cherry, hemlock, balsam and beech (Gibson 1853: 45).

Assessment of the T37 turbine site yielded no evidence of cultural resources. However, an isolated bifacial thinning flake was recovered in the middle of the turbine box near the top of a hill on the T38 turbine site (See Section 4.2.2). Assessment of the T39 site yielded a small lithic scatter, located at the intersection of the crane path and the turbine box, in the south-eastern corner of the turbine pad.

Assessment revealed two artifacts, including a bifacially worked utilized flake and an additional utilized flake. Both of the artifacts recovered were made of Onondaga chert (*Plate 13*).

The bifacially worked utilized flake is roughly ovate in shape, and measures 42 millimetres long, 29 millimetres wide by 13 millimetres thick. It appears to be made from a core rejuvenation flake that was first bifacially worked. When the piece could not be

one area of use wear, a small slightly concave area with small step fracture flakes and no polish. These characteristics indicate that it was used for only a short period of time. This type of use is to be expected on these expedient, informal tools. This site will be registered with the Ontario Ministry of Tourism, Culture and Sport and will be assigned a borden number at a later date.

These artifacts have been inventoried using a numeric coding system that incorporates functional classes and groups adapted from South (1977) (*Appendix B: Archaeological Inventories*).

Given the small number of artifacts recovered, and the informal nature of the tools, further investigation is not warranted. CRM Group recommends that no further archaeological assessment is required for turbine sites T37, T38 and T39 and their associated access road.

### **Turbine Sites T48 and T49**

Turbine sites T48 and T49 are located within Lot 30, Concession 6 of Melancthon Township. The sites are situated between 6<sup>th</sup> Line NE and County Road 2, south of County road 9 and north of Sideroad 240. Access to the proposed turbine sites was gained from 6<sup>th</sup> Line (*Figure 2*).

The access road extends southwest from 6<sup>th</sup> Line for a distance of approximately 700 metres through active agricultural fields. The turbine sites extend south from the access road a distance of 200 metres through agricultural fields.

Visual assessment at 5 metre intervals was conducted on November 21 and 22, 2011 under overcast and cool conditions. The field had been recently ploughed and weathered by several moderate rain events. Ground visibility was excellent (100%) (*Appendix A: Turbine Sites T48 and T49 Site Plans*).

Assessment of the T49 turbine site yielded no evidence of cultural resources. However, a late nineteenth century to early twentieth century Euro-Canadian domestic scatter was discovered along the north-eastern edge of turbine site T48.

Assessment revealed a scatter consisting of late nineteenth century to early twentieth century historic artifacts, an old cement water trough and a stone lined well with remnants of wind mill pumping machinery, near what appears to be a filled-in house foundation. The cultural resources consist of ironstone, green, brown and black transfer printed ironstone, glass, stoneware and cut and wire nails which represent late nineteenth

century to early twentieth century artifacts (Kenyon, ACO Guide & 2008) (**Plates 14 and 15**). The majority of the bottle glass recovered is purple, which dates between 1885 and 1920 (Horn, 2005). The house appears to have been demolished within the past 10 to 30 years, and a rubber wheel with wooden spokes was noted protruding from the center of the foundation. This site is believed to represent a farmstead occupation from the late nineteenth century to the early twentieth century. The appearance of a “Johnston Bros.” or “Hanley” maker’s mark on two of the pieces of transfer printed ironstone also supports this, as these marks date to between 1883 and 1913. These artifacts have been inventoried using a numeric coding system that incorporates functional classes and groups adapted from South (1977) (**Appendix B: Archaeological Inventories**). The house foundation is approximately 10 metres west of the center of the scatter.

This area covers Lot 30 and 31 for Con. 6. Gibson’s early survey field notes indicate heavy swamp consisting of cedar, tamarack, spruce, birch and balsam while dryer areas also included maple, hemlock, birch, basswood and some cedar (1853). A clay subsoil was also noted for Lot 31 (Gibson 1853: 37). Due to these environmental conditions, it seems unlikely there would be any early pioneer structures.

Due to the modern nature of the cultural resources recovered, further investigation is not warranted. CRM Group recommends that no further archaeological assessment is required for turbine sites T48 and T49, as well as their associated access road.

#### **Turbine Sites T13 & T14 & MET Tower Site**

Turbine sites T13 and T14, as well as the MET tower site are located within Lot 26, concession 2 of Melancthon Township. The sites are situated between County Road 124 and 3<sup>rd</sup> Line, just north of County Road 21. Access to the proposed turbine sites and the MET tower was gained from County Road 21 (**Figure 2**).

The access road extends from County Road 21 north for a distance of approximately 300 metres through active agricultural fields, and then turns and extends west for a distance of approximately 200 metres through active agricultural fields. The turbine sites extend west from the access road a distance of 200 metres in agricultural fields. A lay-down yard was also assessed on this property, which extended roughly 400 metres by 200 metres in active agricultural fields. The MET Tower is situated directly along County Road 21 to the north and extended roughly 40 metres into ploughed agricultural field.

Visual assessment at 5 metre intervals was conducted on November 21, 2011 under sunny and cool conditions. The field had been recently ploughed and weathered by several moderate rain events. Ground visibility was excellent (100%) (**Appendix A: Turbine Sites T13, T14 and MET Tower Site Plans**).

Assessment of the T13 and T14 turbine sites yielded no evidence of cultural resources. However, a twentieth century Euro-Canadian domestic scatter was discovered in the north-eastern corner of the MET tower location.

Assessment revealed a small and thin scatter consisting of 11 late nineteenth to early twentieth century find spots, over a 30 metre by 12 metre area with 14 artifacts noted, including an 1898 Canadian penny (**Plates 16 and 17**). The ceramics found display a

moulded wheat pattern design, which first occurs in Ontario during the 1860s and became quite popular after the 1870s (Kenyon, ACO Guide). It was still being produced into the early twentieth century, with a revival of the pattern also occurring in the late twentieth century. Overall, the cultural resources show that the scatter is quite modern, dating from the late nineteenth century to the early twentieth century and no earlier.

These artifacts have been inventoried using a numeric coding system that incorporates functional classes and groups adapted from South (1977) (***Appendix B: Archaeological Inventories***).

Due to the modern nature of the cultural resources recovered, and the small, thin distribution of the artifacts, further investigation is not warranted. CRM Group recommends that no further archaeological assessment is required for turbine sites T13, T14, the lay down yard and the MET tower site.

### **Alternate Turbine Site AT1**

Alternate turbine AT1 is located within Lot 20 and 21, concession 7 NE of Melancthon Township. The sites are situated between County Road 6<sup>th</sup> Line NE and 8th Line, south of Sideroad 240. Access to AT1 was gained from 6<sup>th</sup> Line NE (***Figure 2***).

The access road extends from 6<sup>th</sup> Line NE north-east for a distance of approximately 400 metres through active agricultural fields. The turbine site extends north-east from the end of the access road a distance of 200 metres into agricultural fields.

Visual assessment at 5 metre intervals was conducted on December 5, 2011 under overcast and cool conditions. The field had been recently ploughed and weathered by several moderate rain events. Ground visibility was excellent (100%) (***Appendix A: Alternate Turbine Site AT1***).

Assessment of AT1 yielded evidence of a late nineteenth century Euro-Canadian refuse dump along the access road near 6<sup>th</sup> Line.

Assessment revealed a large scatter consisting of 111 late nineteenth century artifacts, over a 30 metre by 20 metre area. The cultural resources consisted mainly of ironstone and bottle glass, with several modern machine-cut nails and stoneware (***Plates 23 and 24***). The manufacturing dates of this material suggest that the principal occupation may have occurred in the latter half of the nineteenth century and continued into the early twentieth century. Ironstone is generally seen as an indication of a post-1850 occupation (South1977:211). As well, stoneware does not appear until the late 1870s (Kenyon, ACO Guide). Several pieces of ironstone also display a brown or green transfer print, colours that do not become prevalent until the late nineteenth century (Kenyon, ACO Guide). A single “beaded” white glass button was also recovered from Site 1 of AT1, a type of button that is predominately seen in the last half of the nineteenth century (Kenyon, 2008). These artifacts have been inventoried using a numeric coding system that incorporates functional classes and groups adapted from South (1977) (***Appendix B: Archaeological Inventories***). Overall, the cultural resources show that the scatter is quite

modern, dating from the late nineteenth century to the early twentieth century and no earlier.

The lot covering this area is Lot 20 of Concession 7 in Melancthon Township. Gibson's survey journal notes conditions of heavy underbrush and swamp (1853). Tree species associated with this area are tamarack, cedar, spruce, birch, black ash and balsam (Gibson 1853: 32-33). It seems unlikely there would be any early pioneer structures in this area due to swampy conditions. The historic atlas shows that this area, although officially laid out, had not as yet been developed.

Due to the modern nature of the cultural resources recovered from this refuse dump, further investigation is not warranted. CRM Group recommends that no further archaeological assessment is required for alternate turbine site AT1.

#### **2.2.4 Cultural Resources Requiring Further Evaluation**

Substantial cultural resource finds were made in conjunction with two of the proposed turbine locations (**Table 3.2**). These are discussed separately below in numerical sequence. Artifact inventories are found in **Appendix B**.

#### **Turbine Sites T31 & T32**

Turbine site T31 is located within Lot 27, Concession 4 in Melancthon Township, and turbine site T32 is located within Lot 26, Concession 4 in Melancthon Township. These sites are situated between 4<sup>th</sup> Line and 5<sup>th</sup> Line, just north of County Road 21 and south of 30<sup>th</sup> Sideroad. Access to the proposed turbine sites was gained from 5<sup>th</sup> Line (**Figure 2**).

The access road for turbine sites T31 and T32 extends from 5<sup>th</sup> Line east for a distance of approximately 300 metres, through active agricultural fields, at which point it turns north for an additional 300 metres through agricultural fields. The T31 turbine site extends north from the access road a distance of 200 metres into active agricultural fields, while the T32 site extends south from the access road a distance of 200 metres into active agricultural fields.

Archaeological assessment at 5 metre intervals was conducted on October 24, 2011 under overcast and cool conditions. The fields had been recently ploughed and weathered by several moderate rain events. Ground visibility was excellent (100%) (**Appendix A: Turbine Sites T31 and T32 Site Plans**). Archaeological assessment of turbine site T32 did not yield any cultural resources. However, a large early to mid-nineteenth century Euro-Canadian domestic site was discovered on the T31 turbine site.

The large early to mid-nineteenth century historic scatter, measuring roughly 50 metres north/south by 35 metres east/west, was located in the south-eastern corner of turbine site T31. This site will be registered with the Ontario Ministry of Tourism, Culture and Sport and will be assigned a borden number at a later date.

A total of 105 artifacts were observed within this historic site of the T31 turbine pad. The cultural resources observed in the field were almost entirely represented by ceramics

(98% of scatter). The remaining 2% was comprised of 2 clay pipe stems. A representative sample of 46 artifacts (44% of total number of artifacts) was collected. Collection criteria focussed on diagnostic ceramic sherds and diagnostic objects. A preliminary analysis of the collected assemblage is provided below.

**Material Culture Analysis of Historic Site 1**

A sample collection of 46 Euro-Canadian artifacts was removed from Site 1 on turbine site T31. The manufacturing dates of this material suggest that the principal occupation may have occurred in the early to mid-nineteenth century. The artifact sample (**Table 5.1**) includes the following: a selection of stoneware (n=5, 11.1%), red earthenware (n=3, 6.7%), ironstone (n=6, 13%), painted whiteware (n=4, 8.9%), yellowware (n=2, 4.4%), transfer printed whiteware (n=18, 40%), sponged whiteware (n=4, 8.9%), edgeware (n=2, 4.4%) and pipe stems (n=2, 4.4%) (**Plate 20**). The artifacts have been inventoried using a numeric coding system that incorporates functional classes and groups adapted from South (1977) (**Appendix B: Archaeological Inventories**).

**Food Preparation and Consumption**

The foodwares or kitchen group consists of those objects pertaining to food preparation, preservation, storage, table service, discarded leftovers and waste. With a total of 44 (95% of collected sample) artifacts, it comprised the largest category on Site 1, T31.

**Table 5.1: Summary of All T31 Site 1 Sample Artifacts by Functional Groups**

CLASS/Group	Site Total	Total Class	% of Sample
<b>FOOD PREPARATION/CONSUMPTION</b>			
Ceramic Cooking/Storage	8		17.4
Ceramic Tableware	36		78.3
Glass Beverage Containers	0		0
<b>TOTAL FOOD PREPARATION/CONSUMPTION</b>	44		95.7
<b>SMOKING</b>			
Pipe	2		4.3
<b>TOTAL SMOKING</b>	2		
<b>TOTAL ARTIFACTS</b>	46		100

**Ceramics**

Ceramic tableware and utilitarian vessels were the most common object type (n= 44, 95.7%) in the sample from Site 1 on turbine site T31. Of these, the two most common types of ceramics were transfer printed whiteware (40%, n=18), and ironstone (13%, n=6). The transfer printed whiteware has both a blue willow pattern and a purple transfer print which is indicative of the time between 1830 and 1850 (Kenyon, ACO Guide). The presence of “late palette” polychrome painted whiteware also supports this (Kenyon, ACO Guide). The sample also contained sponged whiteware which represented 8.9% (n=4) of the total sample collected. This blue sponge pattern often occurs in ceramics made between 1830 and 1850 (Kenyon, ACO Guide). Also recovered in the sample was 5 pieces (11.1% of sample) of stoneware, which becomes extremely prevalent between 1850 and 1875 (Kenyon, ACO Guide). This, coupled with the presence of unscaloped

edgeware and yelloware (also both prevalent from 1850-1875) shows that the site is likely dating to the mid nineteenth century (Kenyon, ACO Guide). Ironstone is also known to appear in 1850, which further supports this (South 1977).

**Table 5.2: Summary of T31 Historic Site 1 Sample Ware Types**

Ware/Decoration	Total	% of ceramics
<b>FINE TABLEWARE</b>		
Whiteware		
Blue Willow Transfer Print	15	34.2
Purple Transfer Print	3	6.8
“Late palette” Painted	4	9.1
Sponged	4	9.1
Unscaloped Blue Edged	2	4.5
Yelloware		
Thin White Banding	2	4.5
Ironstone		
Undecorated	6	13.6
<b>TOTAL FINE WARES</b>	<b>36</b>	<b>81.8</b>
<b>COARSE UTILITARIAN WARE</b>		
Stoneware		
Salt-glazed with Dark Brown Interior	4	9.1
Salt-glazed with Medium-Brown Interior	1	2.3
Red-earthenware		
Dark Brown Glaze	3	6.8
<b>TOTAL UTILITARIAN WARE</b>	<b>8</b>	<b>18.2</b>
<b>TOTALS</b>	<b>44</b>	
% of ceramics		<b>100</b>

**Smoking**

Two fragmentary pipe stems were collected. While one has no visible decoration on it, the second has a maker’s mark that reads “Montreal”, which indicates that this pipe was manufactured between 1847 and 1876 (Kenyon, 2008) (*Plate 20*).

**Artifact Summary**

The T31 historic Site 1 is almost entirely comprised of ceramic artifacts, with 95% (n=44) of the total sample collected consisting of ceramics, and only 5% (n=2) of the total sample consisting of clay pipe stems. The abundance of potential pre-1850s ceramics constitutes a concentration of early ceramics and evidence of a pre-1850s occupation. The prominence of transfer printed whiteware within the ceramic sample suggests that the principal occupation may have occurred throughout the early to mid-nineteenth century.

The range of domestic artifacts identified included kitchen and tablewares, suggesting a family or minimally a married couple. The absence of any architectural hardware, brick,

and window glass suggests that the principal structures for the site were situated outside of the study area.

### **Conclusion**

Assessment of the T31 and T32 turbine sites, as well as their associated access road yielded evidence of a historic scatter located in the south-eastern corner of the T31 turbine pad. The scatter measures approximately 50 metres north/south by 35 metres east/west. Material culture analysis suggests an occupation that extended throughout the first half of the nineteenth century. A preliminary review of historical documentation suggests that the lot had been occupied from at least the 1870s through the early twentieth century, a date somewhat later than suggested by the artifact assemblage. If the site is to be impacted by development, Stage 3 Testing and CSP (Controlled Surface Pick-up) are warranted.

### **Turbine Sites T43 & T44**

The north half of turbine site T43 is located within Lot 26, Concession 8 in Melancthon Township, where the south half of T43, as well as turbine site T44, are located within Lot 25, Concession 8 in Melancthon Township. These sites are situated between 8<sup>th</sup> Line NE and Sideroad 250, just south of Sideroad 240 and north of County Road 21. Access to the proposed turbine sites was gained from 8<sup>th</sup> Line (*Figure 2*).

The access road for turbine sites T43 and T44 extends from 8<sup>th</sup> Line south-west for a distance of approximately 550 metres, through active agricultural fields, at which point it turns south-east for an additional 300 metres through agricultural field. The T43 and T44 turbine sites extend north-east from the access road a distance of 200 metres into active agricultural fields.

This area cover lots 25 and 26, Con 8. Both lots are described in Gibson's field notes as having rolling land with maple, beech, elm and birch with thick underbrush (1853). This suggests the land was drier than areas to the west along 6<sup>th</sup> Line NE (Gibson 1853:42-43)

Archaeological assessment at 5 metre intervals was conducted on November 15 & 16, 2011 under overcast and cool conditions. The fields had been recently ploughed and weathered by several moderate rain events. Ground visibility was excellent (100%) (*Appendix A: Turbine Sites 43 and 44 Site Plans*). Archaeological assessment of turbine site T44 did not yield any cultural resources. However, a large mid-nineteenth century Euro-Canadian domestic site was discovered within turbine site T43.

The large mid-nineteenth century historic scatter, measuring roughly 30 metres north/south by 22 metres east/west, was located in the north-eastern corner of turbine site T43. This site will be registered with the Ontario Ministry of Tourism, Culture and Sport and will be assigned a borden number at a later date.

A total of 120 artifacts were observed within this historic site on the T43 turbine site. Among the cultural resources observed in the field, ceramics represented 68.3% (n=82), glass represented 20.8% (n=25), pipe fragments represented 7.5% (n=9) and "other"