PIF P365-0082-2015
DOUGLAS A. YAHN - P365

2329059 ONTARIO INC.

STAGE 1 ARCHAEOLOGICAL ASSESSMENT

ROCKRIDGE QUARRY

LOT 21, CONCESSION 8
FORMER TOWNSHIP OF HARVEY,
MUNICIPALITY OF TRENT LAKES,
PROVINCE OF ONTARIO

Submitted to:

2329059 Ontario Inc.
P.O. Box 249
Buckhorn, Ontario
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ORIGINAL REPORT MARCH 14, 2016

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LOT 21, CONCESSION 8, FORMER TOWNSHIP OF HARVEY, MUNICIPALITY OF TRENT LAKES, PROVINCE OF ONTARIO

2329059 Ontario Inc.

Project No.: 151-14010-00

March 2016

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EXECUTIVE SUMMARY

WSP Canada Inc. was retained by 2329059 Ontario Inc. to conduct a Stage 1 Archaeological Assessment of the proposed Rockridge Quarry located on Lot 21, Concession 8, Former Township of Harvey, Municipality of Trent Lakes, in the Province of Ontario.

This archaeological assessment has been triggered by an application by the proponent to the Ministry of Natural Resources and Forestry (MNRF) to proceed with a new Aggregate Permit. The Ministry of Natural Resources and Forestry (MNRF) is the approval authority under the *Aggregate Resources Act*. The aggregate permit process includes the requirement for an archaeological assessment as one of the conditions for approval to ensure that the proponent meets their legal obligations under the *Ontario Heritage Act*.

Archaeological activities were carried out in accordance with the *Standards and Guidelines for Consultant Archaeologists* (Ministry of Tourism, Culture and Sport 2011).

This study involved a review of documents pertaining to the property including historic maps, aerial photographs and local histories. A property inspection was conducted on December 18, 2016.

Archaeological recommendations have been made based on the background historic research, property inspection, locations of known or registered archaeological sites, previous archaeological assessments and indicators of archaeological potential. These recommendations include the following:

1. **Stage 2 test-pit survey is required for undisturbed lands located within 100m of the historic Buckhorn Road, 300m from registered archaeological site (BdGo-10), and 50m from identified wetland north of the study area (Figure 3).**

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APPENDICES

PROJECT PERSONNEL

Project Manager	Douglas A. Yahn, M.E.S. (P365) *Senior Archaeologist*
Field Director	Dale G. Langford, M.E.S. (R474) *Intermediate Archaeologist*
Report Preparation	Dale Langford
	Douglas A. Yahn
Mapping/GIS	Dale Langford
Administrative Support	Lyn Pedersen *Administrative Supervisor*

1 PROJECT CONTEXT

1.1 OBJECTIVES

The objective of a Stage 1 background study and property inspection is to evaluate in detail the property's archaeological potential, which will support recommendations for Stage 2 survey for all or parts of the property and to recommend appropriate strategies for Stage 2 survey (if required). In support of the determination of archaeological potential, the Stage 1 will provide information about the property's geography, history, previous archaeological fieldwork and current land condition.

1.2 DEVELOPMENT CONTEXT

WSP Canada Inc. was retained by 2329059 Ontario Inc. to conduct a Stage 1 Archaeological Assessment of the proposed Rockridge Quarry located on Lot 21, Concession 8, Former Township of Harvey, Municipality of Trent Lakes, in the Province of Ontario.

This archaeological assessment has been triggered by an application by the proponent to the Ministry of Natural Resources (MNR) to proceed with a new Aggregate Permit. The Ministry of Natural Resources (MNR) is the approval authority under the *Aggregate Resources Act*. The aggregate permit process includes the requirement for an archaeological assessment as one of the conditions for approval to ensure that the proponent meets their legal obligations under the *Ontario Heritage Act*.

This archaeological assessment was carried out during the pre-approval stage of the aggregate permit process; therefore detailed design mapping was not available. Figure 1 shows the Site Plan along with its location in Ontario.

Permission to access the property to conduct the property inspection was granted by the Client and no limits were placed on this access during the Property Inspection.

1.3 HISTORICAL CONTEXT

1.3.1 PROJECT LOCATION

The property is located on Lot 21, Concession 8, Former Township of Harvey, Municipality of Trent Lakes, in the Province of Ontario. Access to the property was gained via the existing driveways present along County Road 507 (Historic Buckhorn Road).

1.3.2 PRE-CONTACT PERIOD

Paleoindian period populations were the first to occupy what is now southern Ontario, moving into the region following the retreat of the Laurentide Ice Sheet approximately 11,000 years before present (BP). The first Paleoindian period populations to occupy southern Ontario are referred to as Early Paleoindians (Ellis and Deller 1990:39).

Early Paleoindian period groups are identified by their distinctive projectile point morphologies, exhibiting long grooves, or ‘flutes’, that likely functioned as a hafting mechanism. These Early Paleoindian group projectile morphologies include Gainey (ca. 10,900 BP), Barnes (ca. 10,700 BP), and Crowfield (ca. 10,500 BP)(Ellis and Deller 1990:39-43). By approximately 10,400 BP, Paleoindian projectile points transitioned to various un-fluted varieties such as Holocombe (ca. 10,300 BP), Hi-Lo (ca. 10,100 BP), and Unstemmed and Stemmed Lanceolate (ca. 10,400 to 9,500

BP). These morphologies were utilized by Late Paleoindian period groups (Ellis and Deller 1990:40).

Both Early and Late Paleoindian period populations were highly mobile, participating in the hunting of large game animals. Paleoindian period sites often functioned as small campsites (less than 200 m^2) where stone tool production and maintenance occurred (Ellis and Deller 1990).

By approximately 8,000 BP the climate of Ontario began to warm. As a result, deciduous flora began to colonize the region. With this shift in flora came new faunal resources, resulting in a transition in the ways populations exploited their environments. This transition resulted in a change of tool-kits and subsistence strategies recognizable in the archaeological record, resulting in what is referred to archaeologically as the Archaic period. The Archaic period in southern Ontario is dived into three phases: the Early Archaic (ca. 10,000 to 8,000 BP), the Middle Archaic (ca. 8,000 to 4,500 BP), and the Late Archaic (ca. 4,500 to 2,800 BP) (Ellis et al. 1990).

The Archaic period is differentiated from earlier Paleoindian populations by a number of traits such as: 1) an increase in tool stone variation and reliance on local tool stone sources, 2) the emergence of notched and stemmed projectile point morphologies, 3) a reduction in extensively flaked tools, 4) the use of native copper, 5) the use of bone tools for hooks, gorges, and harpoons, 6) an increase in extensive trade networks, and 7) the production of ground stone tools. Also noted is an increase in the recovery of large woodworking tools such as chisels, adzes, and axes (Ellis et al. 1990:65-66). The Archaic period is also marked by population growth. Archaeological evidence suggests that by the end of the Middle Archaic period (ca. 4,500 BP) populations were steadily increasing in size (Ellis et al 1990). Over the course of the Archaic period populations began to rely on more localized hunting and gathering territories. By the end of the Archaic period, populations were utilizing more seasonal rounds. From spring to fall, settlements would exploit lakeshore/riverine locations where a broad-based subsistence strategy could be employed, while the late fall and winter months would be spent at interior site where deer hunting was likely a primary focus with some wild edibles likely being collected (Ellis et al. 1990:114). This steady increase in population size and adoption of a more localized seasonal subsistence strategy eventually evolved into what is termed the Woodland period.

The Woodland period is characterized by the emergence of ceramic technology for the manufacture of pottery. Similar to the Archaic period, the Woodland period is separated into three primary timeframes: the Early Woodland (approximately 800 BC to 0 AD), the Middle Woodland (approximately 0 AD to 700/900 AD), and the Late Woodland (approximately 900 AD to 1600 AD) (Spence et al. 1990; Fox 1990).

The Early Woodland period is represented in southern Ontario by two different cultural complexes: the Meadowood Complex (ca. 900 to 500 BC), and the Middlesex Complex (ca. 500 BC to 0 AD). During this period the life ways of Early Woodland population differed little from that of the Late Archaic with hunting and gathering representing the primary subsistence strategies. The pottery of this period is characterized by its relatively crude construction and lack of decorations. These early ceramics exhibit cord impressions, likely resulting from the techniques used during manufacture (Spence et al. 1990).

The Middle Woodland period is differentiated from the Early Woodland period by changes in lithic tool morphologies (projectile points) and the increased elaboration of ceramic vessels (Spence et al. 1990). In southern Ontario the Middle Woodland is observed in three different cultural complexes: the Point Peninsula Complex to the north and northeast of Lake Ontario, the Couture Complex near Lake St. Claire, and the Saugeen Complex throughout the remainder of southern Ontario. These groups can be identified by their use of either dentate or pseudo-scalloped ceramic decorations. It is by the end of the Middle Woodland period that archaeological evidence begins to suggest the rudimentary use of maize (corn) horticulture (Warrick 2000).

The adoption and expansion of maize horticulture during the Late Woodland period allowed for an increase in population size, density, and complexity among Late Woodland populations. As a result, a shift in subsistence and settlement patterns occurred, with the adoption of a more sedentary village life and reliance on maize horticulture, with beans, squash, and tobacco also being grown (Racher 2014). Nearing the end of the Late Woodland Period (approximately 1400 AD) villages reached their maximum size. During this period, increased warfare resulted in the development of larger villages with extensive palisades.

Early contact with European settlers at the end of the Late Woodland, Late Ontario Iroquoian period resulted in extensive change to the traditional lifestyles of most populations inhabiting southern Ontario.

1.3.3 STUDY AREA SPECIFIC HISTORY IN THE POST CONTACT PERIOD

Euro-Canadian occupation in the study area began with a series of surveying efforts between 1818 and 1864. Two years following the completing of surveying, the Harvey had reached a population sufficient enough to allow for its designation as a Township in 1866.

The growth of Harvey Township was slow, with growth attributed to the establishment of various acts allowing for the harvesting of resources and the clearing and settling of land. The most important of these was the *Crown Tiber Act* in the mid-19th century, which allowed for lumber companies to harvest desirable lumber from claim areas throughout the township. Initially only select lumber was harvested, such as white oak and white pine, that had a ready market. Later, fuel wood was harvested resulting in the clearing of large sections of land. This cleared land subsequently drew in farmers seeking to settle the small areas of property that would have allowed for agriculture.

Initial farming began in the more desirable sections of land in the south and west of the Township. Later, cleared lands in the north began to be occupied. The settling of northern Harvey Township was also facilitated by the completion of Governor (Buckhorn) Road in 1865.

The bedrock controlled nature of Harvey Township made farming difficult, with farmer wishing to utilize the land forced to remove large quantities of rock from fields before they could work them. This has resulted in a high prevalence of large stone piles and dry-laid stone fence lines throughout the Township.

Following World War II, farming for profit in Harvey Township became impractical as the small parcels of difficult to work land was not worth the financial investment or the time required to compete with larger farms elsewhere. Today the majority of farmland is utilized for hobby or seasonal ranches.

1.3.4 SUMMARY

The property is located on Lot 21, Concession 8, Former Township of Harvey, Municipality of Trent Lakes, in the Province of Ontario. Access to the property was gained via the existing driveways present along County Road 507 (Historic Buckhorn Road).

First Nations populations have a deep, rich history within the region spanning from initial migrations of Early Paleoindian period populations following deglaciation, to the time of contact.

Initial Euro-Canadian occupation began with the survey of Harvey Township between 1818 and 1864. Settlement growth in the area was initially slow, beginning with lumber resource extraction in the mid-19th century. With lands cleared, small scale farming began. Following WWII most commercial farming had stopped, with farms today functioning primarily as either hobby or seasonal ranches.

The property area itself is situated along the Historic Buckhorn Road (presently County Road 507). The property was initially used as farmland, possibly as pasture land due to the extremely thin soil veneer and exposed limestone bedrock. No structures are identified in historic mapping to suggest the presence of historically significant occupation on the property.

1.4 ARCHAEOLOGICAL CONTEXT

1.4.1 CURRENT CONDITIONS

A property inspection was carried out on December 18, 2015 to review current conditions. The front half of the property consists of cleared agricultural land with various roadways and paths throughout, while the back half of the property remains forested with some logging activity being conducted concurrent to property inspection.

The study area is located approximately 400m west of Mississauga River. Marsh areas associated with the banks of the Mississauga River extend to the eastern boundaries of the property.

1.4.2 PHYSIOGRAPHY

Ecoregions are parts of an ecozone and are characterized by distinctive regional ecological factors including climate, flora, fauna, physiography, soil, water, and land usage.

The property is located on Canadian Shield Terrain and lies in the Ontario Shield Ecozone, within the Georgian Bay Ecoregion (Ecoregion 5E) (Crins et al. 2009). Climatic and geological characteristics for this ecoregion are provided below, along with a brief description of dominant vegetation and wildlife species.

The Georgian Bay Ecoregion is situated between Lake Superior and the Quebec Border, on the southern portion of the Precambrian Shield. This Ecoregion is typified by humid and cool-temperate weather, with a mean annual temperature ranging from 2.8 to 6.2 °C. Mean annual precipitation ranges between 771 and 1,134 mm, with the means summer rainfall between 204 and 304 mm.

The Ecoregion is located within the Great Lakes-St. Lawrence Forest Region where species such as Eastern White Pine, Red Pine, Eastern Hemlock and Yellow Birch are common. Towards the southern edge of the ecoregion and within mesic sites Sugar Maple, American Beech, Wild Black Cherry, Basswood, and White Ash dominate, while concentrations of boreal species including White Spruce, Black Spruce, Tamarack, and Balsam Fir can be found on certain landform units or within cooler-than normal sites.

Dominant wildlife species in the ecoregion include Moose, Beaver, Black Bear, Fisher, Pileated Woodpecker, Common Loon, Red-spotted Newt, Northern Two-lined Salamander, Gray Tree frog, American Bullfrog, Snapping Turtle, and Northern Ring-necked Snake. Numerous lakes and rivers in the ecoregion provide habitat for fish species such as Lake Trout, Brook Trout, Lake Whitefish, Walleye, Yellow Perch, Northern Redbelly Dace, and many other species.

The Ecoregion is situated on the southern edge of the Precambrian Shield where the surficial geology reflects its bedrock control. Ground moraine of variable depth is common in the region; however, glaciofluvial materials associated with spillways and outwash deposits can be found. Terrain in the ecoregion is highly variable ranging from weakly to strongly broken. Over half of the Ecoregion is characterized by soils with a low capacity to buffer the impacts of acidic precipitation.

Surficial geology in the study area consists of a large limestone plain in the west, dropping of in the east while sediments in the study area consist primarily of sandy loam.

1.4.3 PREVIOUS ARCHAEOLOGICAL ASSESSMENTS

Two previous archaeological assessments have been completed in close proximity to the study area (Table 1). These reports consist of two Stage 1-2 combined archaeological assessments for lands located immediately south and southwest of the study area. Stage 2 shovel testing for Lots 19 & 20, Concession 8 were limited to areas adjacent to the existing stone barn and out-building structures. Both reports indicated that limited archaeological remains were present to suggest that further Stage 3 site specific assessment was required.

Table 1: Previous archaeological assessments conducted in close proximity to the study area.

Assessment	Stage	Results	Consultant
A Stage I-II Archaeological Assessment/Heritage Assessment of the Proposed Stonescape Quarry II: Located in Part Lot 20, Concession 9, Township of Galway-Cavendish-Harvey (Geographic Township of Harvey), County of Peterborough, Ontario	1-2	No further archaeological assessment required	York North
A Stage I-II Archaeological Assessment/Heritage Assessment of the Proposed Stonescape Quarry: Located in Part Lots 19 & 20, Concession 8, Township of Galway-Cavendish-Harvey (Geographic Township of Harvey), County of Peterborough, Ontario	1-2	No further archaeological assessment required	York North

1.4.4 REGISTERED ARCHAEOLOGICAL SITES

Four registered archaeological sites located within 1km of the study area. Three of these sites are located over 500m to the northwest of the study area (BdGo-14, BdGo-15, BdGo-16) while one is located approximately 200m to the south (BdGo-10). All four sites consisted of limited archaeological recoveries associated with Stage 2 test-pit survey and did not represent materials of cultural heritage value or interest requiring Stage 3 site specific assessment.

Table 2: Registered archaeological sites located within a 1km radius of the study area.

Borden Number	Cultural Affiliation	Site Type
BdGo-10	Post-Contact	Homestead
BdGo-14	Post-Contact	Hunting Cabin
BdGo-15	N/A	Findspot
BdGo-16	Post-Contact	Homestead

1.4.5 SUMMARY

The western portion of the property consists of cleared agricultural land with various roadways and paths throughout, while the eastern section of the property remains forested with some logging activity being conducted concurrent to property inspection.

Two archaeological assessments have been conducted in close proximity to the study area and four registered archaeological sites are located within a 1km radius. Archaeological investigations

yielded limited archaeological remains of cultural heritage value or interest and as such no Stage 3 site specific assessment was recommended.

The study area is located approximately 400m west of Mississauga River. Marsh areas associated with the banks of the Mississauga River extend to the eastern boundaries of the property.

2 FIELD METHODS

2.1 PROPERTY INSPECTION AND PROPERTY SURVEY

A property inspection is a visit to the property to gain first-hand knowledge of its geography, topography, and current condition and to evaluate and map the archaeological potential.

An inspection of the property and its periphery was conducted on December 18, 2016. The weather allowed for good visibility of land features. The temperature was roughly 3 degrees Celsius.

Access to the property was gained via the existing driveways present along County Road 507 (Historic Buckhorn Road). Located along the western edge of the property are three houses that are either currently occupied or recently vacant. This area has been heavily modified to contain numerous gravel roadways and outbuildings. In the southwest corner of the property is a large antenna. The construction of this antenna appears to have required the stripping of a large area of topsoil, as evident by a large berm of displaced earth.

Moving throughout the western portion of the site revealed land cleared for agricultural use some time in the past. This past use has left a number of areas where stones have been stacked in piles and along old fence lines. Today the area consists of a thin veneer of sandy loam over a large, flat, limestone plain. As inspection moved towards the centre of the property the land sloped downwards, becoming poorly drained and water saturated. This low, water saturated terrain continues throughout the southern portion of the limestone plain until rising again near the edge of the limestone escarpment. Water saturated terrain in this section of the study area does not represent a wetland environment, but rather poorly drained bedrock controlled topography.

The limestone escarpment consists of an approximately 3m high exposure of limestone with terrain below the exposure sloping steeply downwards towards the low, water saturated terrain associated with the banks of the Mississauga River.

Field notes and photographs of the property were taken during the inspection. The photograph locations and directions were noted and all photographs were catalogued. Locations of images presented in this report can be found on Figure 4.

2.2 RECORD OF FINDS

A Stage 1 archaeological assessment does not include excavation or collection of archaeological resources.

2.3 INVENTORY OF DOCUMENTATION RECORDS

The following list represents all the documentation taken in the field relating to this project and is being retained by WSP Canada Inc.:

- 3 page of field notes
- 14 digital photographs in JPG format of the subject area
- GPS readings of Photo Locations taken during the property inspection (Appendix B)

3 ANALYSIS AND CONCLUSIONS

3.1 ARCHAEOLOGICAL POTENTIAL

A number of factors are employed in determining archaeological potential. Features indicating archaeological potential can be found in Appendix A.

Criteria for pre-contact archaeological potential is focused on physiographic variables that include distance from the nearest source of water, the nature of the nearest source/body of water, distinguishing features in the landscape (e.g. ridges, knolls, eskers, wetlands), the types of soils found within the area of assessment and resource availability. Also considered in determining archaeological potential are known archaeological sites within or in the vicinity of the study area. Historic research provides the basis for determining historic archaeological potential. Land registry records, historical maps and aerial photographic evidence and a property inspection of the project area all assist in determining historic archaeological potential. Additionally, the proximity to historic transportation corridors such as roads, rail and water courses also affect the historic archaeological potential.

Two archaeological assessments have been conducted in close proximity to the study area and 4 registered archaeological sites are located within a 1km radius. Archaeological assessments consisted of Stage 1-2 investigations. No features of cultural heritage value or interest were identified during investigations requiring Stage 3 site specific assessment. Registered archaeological sites identified in a 1km radius of the study area consisted of 3 post-contact and 1 unidentified sites containing limited recoveries (n=2, 6, 22, and 15). Stage 3 site specific assessment was not required for the any of the 4 registered archaeological sites.

As the property is located along the historic Buckhorn Road (presently County Road 507), within 300m of a registered archaeological site (BdGo-10), and permanent water sources (wetlands located north and east of the study area) it is determined that the study area has the potential for the recovery of both pre-contact and historic Euro-Canadian sites.

Property inspection indicated that numerous areas associated with standing structures and radio tower have been impacted by development removing archaeological potential (Section 1.4 Standard 1f, Figure 2). Further potential has been removed for areas in the eastern portion of the study area due to excessive slope (>20^{o}) and low, water saturated terrain (Section 2.1 Standard 2a, Figure 2).

As the property is located on Canadian Shield terrain, 5m Stage 2 test-pit survey is required between 0-50m from modern water sources, and 10m Stage 2 test-pit survey is required between 50-150m for all features of archaeological potential other than modern water sources (Section 2.1.5 Standard 1 and 2).

As such, 5m Stage 2 test-pit survey is required for undisturbed lands located within 100m of the historic Buckhorn Road, 300m from registered archaeological site (BdGo-10), and 50m from identified wetland north of the study area (Figure 3).

3.2 CONCLUSIONS

Stage 2 test-pit survey is required for undisturbed lands located within 100m of the historic Buckhorn Road, 300m from registered archaeological site (BdGo-10), and 50m from identified wetland north of the study area.

4 RECOMMENDATIONS

Archaeological activities were carried out in accordance with the *Standards and Guidelines for Consultant Archaeologists* (Ministry of Tourism, Culture and Sport 2011).

This study involved a review of documents pertaining to the property including historic maps, aerial photographs and local histories. A property inspection was conducted on December 18, 2016.

Archaeological recommendations have been made based on the background historic research, property inspection, locations of known or registered archaeological sites, previous archaeological assessments, indicators of archaeological potential, and property inspection. These recommendations include the following:

1. Stage 2 test-pit survey is required for undisturbed lands located within 100m of the historic Buckhorn Road, 300m from registered archaeological site (BdGo-10), and 50m from identified wetland north of the study area (Figure 3).

5 ADVICE ON COMPLIANCE WITH LEGISLATION

This report is submitted to the Minister of Tourism, Culture, and Sport as a condition of licensing in accordance with Part VI of the *Ontario Heritage Act*, R.S.O. 1990, c 0.18. The report is reviewed to ensure that it complies with the Standards and Guidelines for Consultant Archaeologists (2011a) that are issued by the Minister, and that the archaeological fieldwork and report recommendations ensure the conservation, protection and preservation of the cultural heritage of Ontario. When all matters relating to archaeological sites within the project area of a development proposal have been addressed to the satisfaction of the Ministry of Tourism, Culture and Sport, a letter will be issued by the Ministry stating that there are no further concerns with regard to alterations to archaeological sites by the proposed development.

It is an offence under Sections 48 and 69 of the *Ontario Heritage Act* for any party other than a licensed archaeologist to make any alteration to a known archaeological site or to remove any artifact or other physical evidence of past human use or activity from the site, until such time as a licensed archaeologist has completed archaeological fieldwork on the site, submitted a report to the Minister stating that the site has no further cultural heritage value or interest, and the report has been filed in the Ontario Public Register of Archaeological Reports referred to in Section 65.1 of the *Ontario Heritage Act*.

Should previously undocumented archaeological resources be discovered, they may be a new archaeological site and therefore subject to Section 48(1) of the *Ontario Heritage Act*. The proponent or person discovering the archaeological resources must cease alteration of the site immediately and engage a licensed consultant archaeologist to carry out archaeological fieldwork, in compliance with Section 48(1) of the *Ontario Heritage Act*.

The *Funeral, Burial and Cremation Services Act*, 2002, S.O. 2002, c.33 requires that any person discovering human remains must notify the police or coroner and the Registrar of Cemeteries at the Ministry of Consumer Services.

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7 IMAGES

Image 1: View N towards recently abandoned house showing gravel driveways.

Image 2: View SE showing two occupied properties along with antenna location.

Image 3: View N showing limestone plain with thin soil veneer.

Image 4: View N showing pile of rocks associated with early farming efforts.

Image 5: View E showing Limestone plain with thin soil veneer.

Image 6: View E showing low water saturated terrain.

Image 7: View SE showing rock piles along fence line likely associated with farming activity.

Image 8: View NE showing thin soiled terrain sloping down in distance towards low and wet area.

Image 9: View S showing low water saturated terrain.

Image 10: View SE showing exposed limestone.

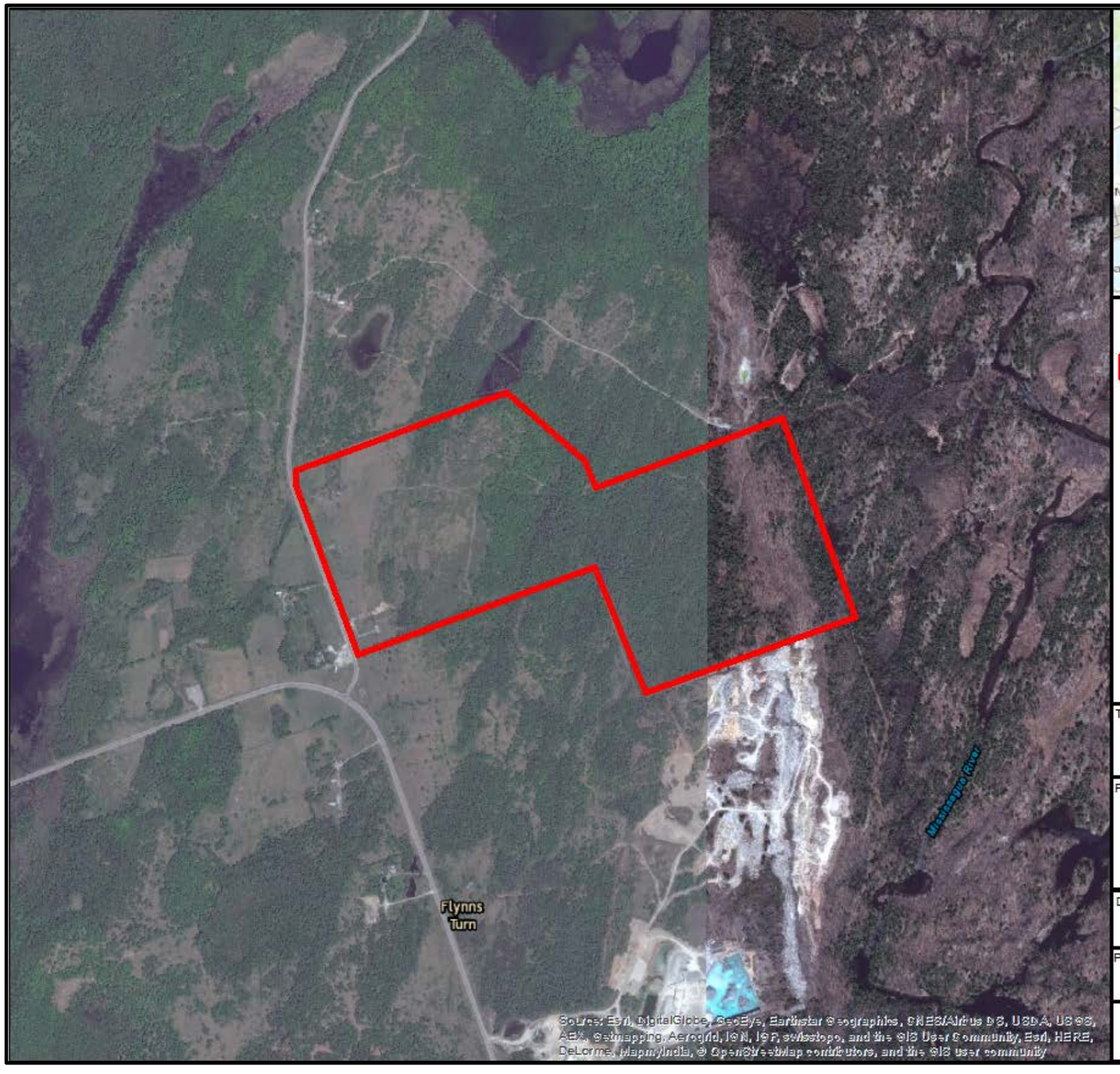
Image 11: View E showing bedrock escarpment with slope downwards.

Image 12: View SW showing slope down towards toe of limestone escarpment.

Image 13: View along top of escarpment showing bedrock immediately below organic growth.

Image 14: View S showing slope down towards water table.

FIGURES



LEGEND

Study Area

0 250 500
M

1:20,000

N

TITLE:

PROJECT LOCATION

PROJECT:

STAGE 1 ARCHAEOLOGICAL ASSESSMENT:
ROCKRIDGE QUARRY

DATE:

2/12/2016

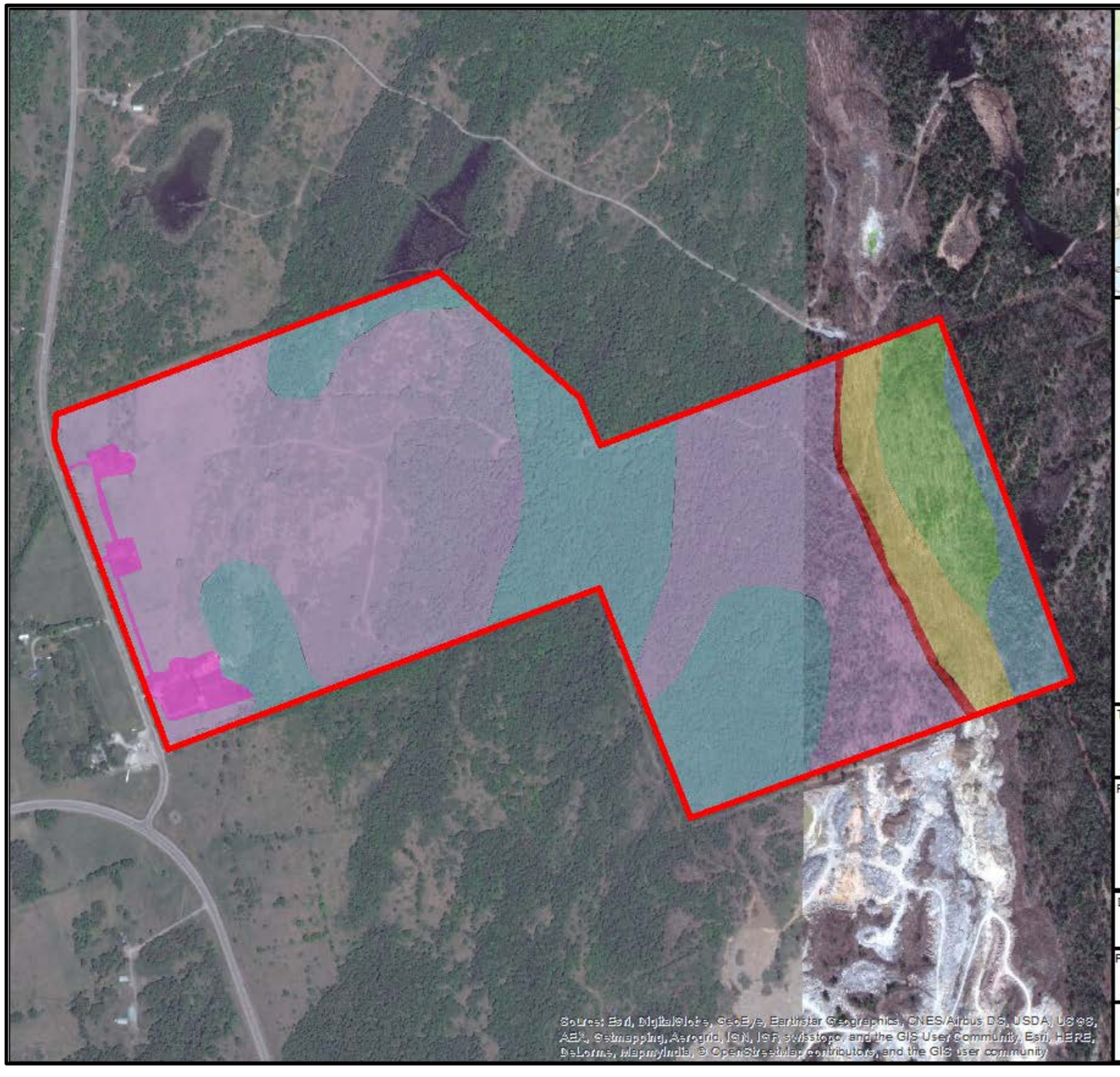
PROJECT NUMBER:

151-14010-00

WSP

FIG:

1



LEGEND

- Study
- Disturbed
- Water Saturated
- Steep Undulations
- Slope (>20 deg)
- Limestone Plain
- Limestone Cliff

0 150 300 M

1:11,000

N

TITLE:

SITE CONDITIONS

PROJECT:

STAGE 1 ARCHAEOLOGICAL ASSESSMENT: ROCKRIDGE QUARRY

DATE:

2/12/2016

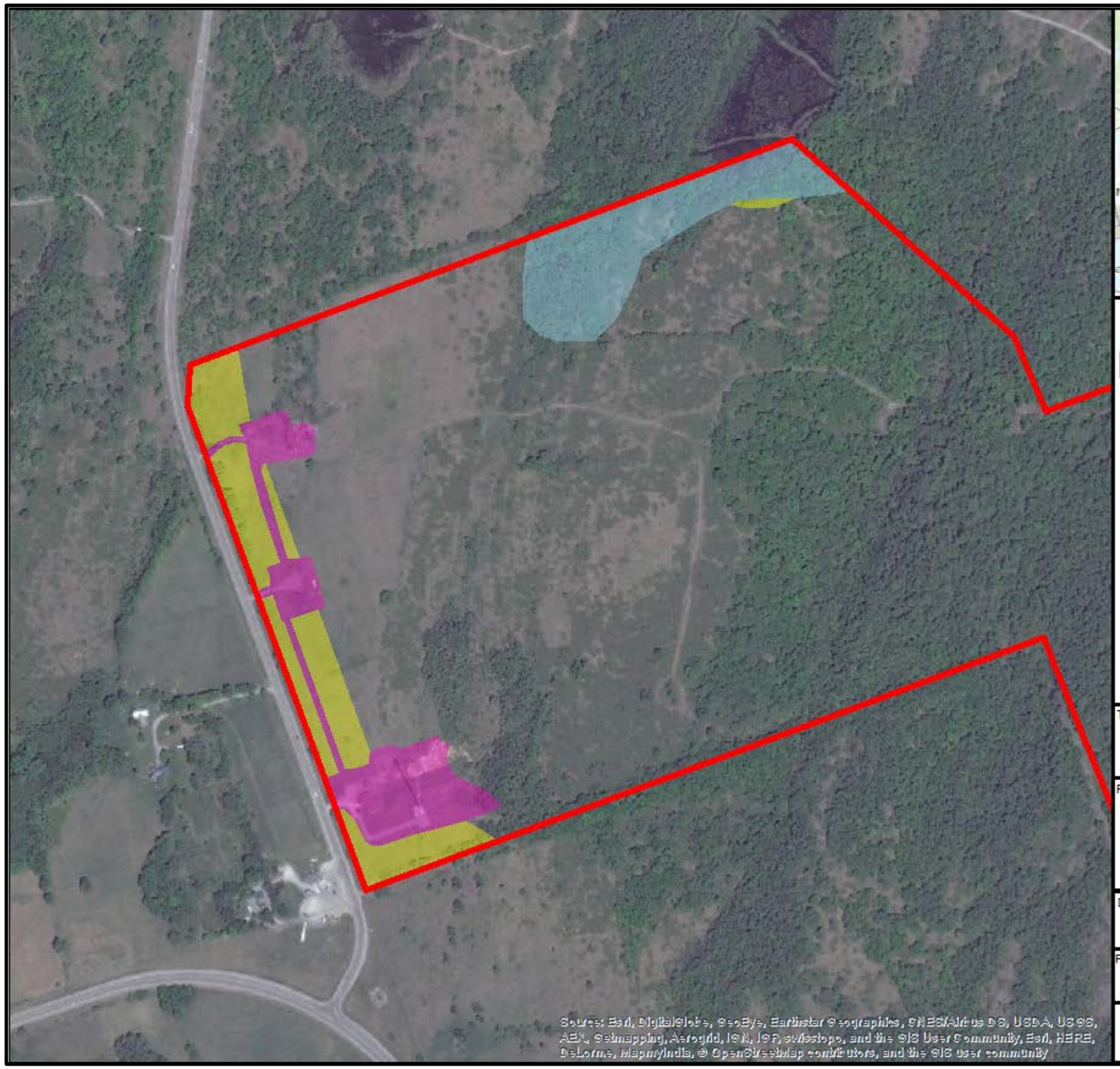
PROJECT NUMBER:

151-14010-00

WSP

FIG:

2



LEGEND

- Study Area
- Archaeological Potential
- Disturbed
- Low and Wet

0 100 200 M

1:7,000

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TITLE:

ARCHAEOLOGICAL POTENTIAL

PROJECT:

STAGE 1 ARCHAEOLOGICAL ASSESSMENT:
ROCKRIDGE QUARRY

DATE:

2/12/2016

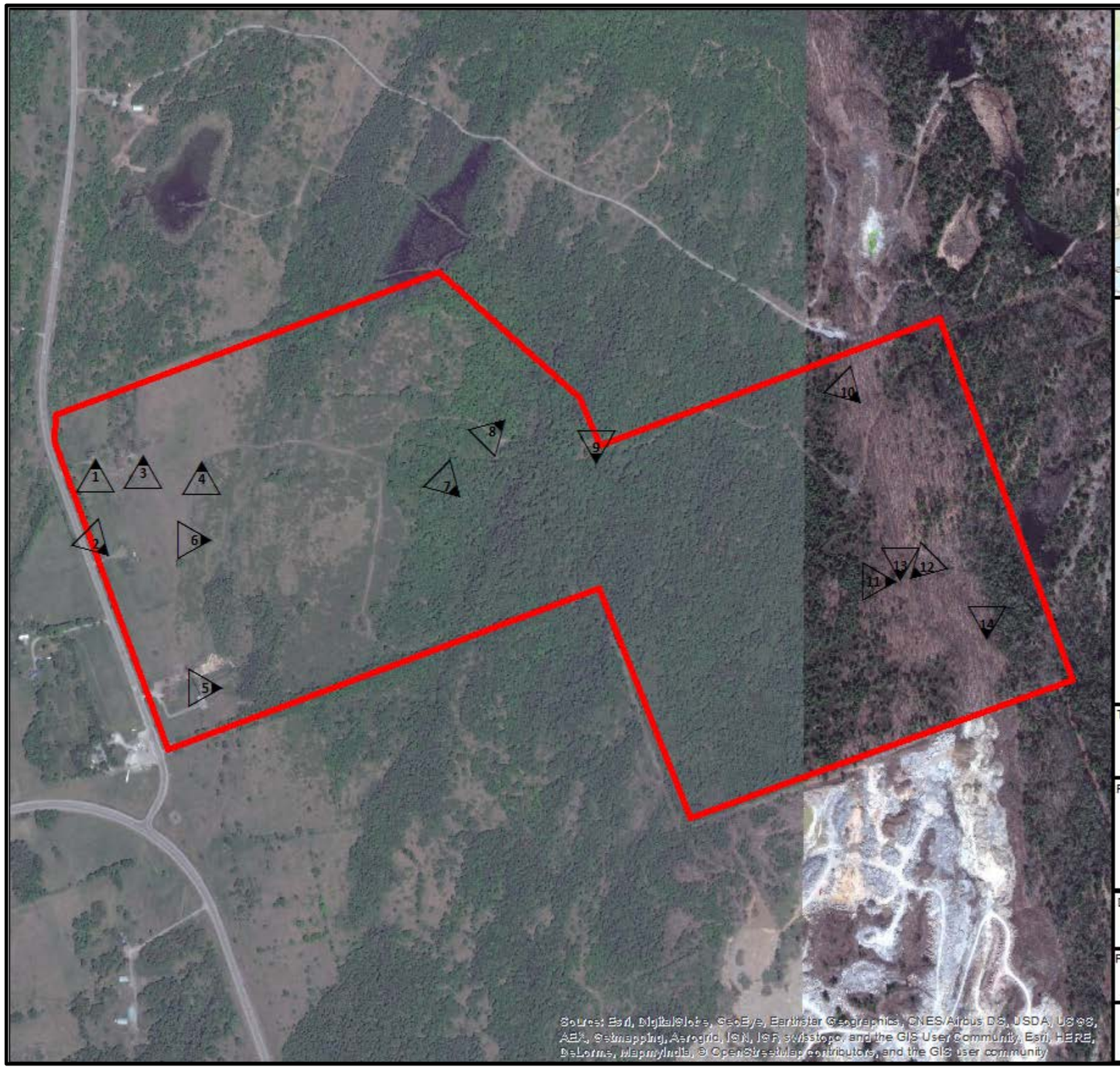
PROJECT NUMBER:

151-14010-00

WSP

FIG:

3



LEGEND

Study Area

Photo Location and Direction

0 150 300 M

1:11,000

N

TITLE:
PHOTO LOCATION AND DIRECTION

PROJECT:
STAGE 1 ARCHAEOLOGICAL ASSESSMENT:
ROCKRIDGE QUARRY

DATE:
2/12/2016

PROJECT NUMBER:
151-14010-00

WSP

FIG:
4

Appendix A

FEATURES INDICATING ARCHAEOLOGICAL POTENTIAL

FEATURES INDICATING ARCHAEOLOGICAL POTENTIAL

The following are features or characteristics that indicate archaeological potential:

- Previously identified archaeological sites
- Water sources:
    - primary water sources (lakes, rivers, streams, creeks).
    - secondary water sources (intermittent streams and creeks, springs, marshes, swamps).
    - features indicating past water sources (e.g. glacial lake shorelines, relic river. or stream channels, shorelines of drained lakes or marshes, cobble beaches).
    - accessible or inaccessible shoreline (e.g. high bluffs, swamp or marsh fields by the edge of a lake, sandbars stretching into marsh).
- Elevated topography (e.g. eskers, drumlins, large knolls, plateaux)
- Pockets of well-drained sandy soil, especially near areas of heavy soil or rocky ground
- Distinctive land formations that might have been special or spiritual places, such as waterfalls, rock outcrops, caverns, mounds, and promontories and their bases
- Resource areas, including:
    - food or medicinal plants (e.g. migratory routes, spawning areas, prairie).
    - scarce raw materials (e.g. quartz, copper, ochre or outcrops of chert).
    - early Euro-Canadian industry (e.g. fur trade, logging, prospecting, mining).
- Areas of early Euro-Canadian settlement. These include places of early military or pioneer settlement (e.g. pioneer homesteads, isolated cabins, farmstead complexes), early wharf or dock complexes, pioneer churches and early cemeteries.
- Early historical transportation routes (e.g. trails, passes, roads, railways, portage routes).
- Property listed on a municipal register or designated under the Ontario Heritage Act or that is a federal, provincial or municipal historic landmark or site.
- Property that local histories or informants have identified with possible archaeological sites, historic events, activities, or occupations.

Source: Ontario Ministry of Tourism, Culture and Sport
2011 Standards and Guidelines for Consultant Archaeologists
Section 1.3.1

Appendix B

PHOTOGRAPH LOCATIONS

PHOTOGRAPH LOCATIONS

Image	Zone	Easting	Northing	Facing
01	17 T	707625	4943874	N
02	17 T	707629	4943760	SE
03	17 T	707705	4943883	N
04	17 T	707806	4943876	N
05	17 T	707822	4943522	E
06	17 T	707796	4943771	E
07	17 T	708223	4943877	SE
08	17 T	708296	4943971	NE
09	17 T	708473	4943950	S
10	17 T	708899	4944058	SE
11	17 T	708974	4943765	E
12	17 T	709021	4943770	SW
13	17 T	708997	4943767	S
14	17 T	709148	4943673	S

Source: Garmin GPSmap 62s (NAD 83)

Appendix C

REGULATORY CONTEXT

REGULATORY CONTEXT

Ontario's aggregate resources are the sand, gravel, clay, earth and bedrock that underlie our natural landscape.

The Aggregate Resources Act (R.S.O. 1990, CHAPTER A.8, Last amendment: 2009, c. 33, Sched. 2, s. 3) is the primary legislation governing the regulation of aggregate operations in Ontario and is administered by the Ministry of Natural Resources (MNR).

The purposes of the ARA are to provide for the management of the aggregate resources of Ontario; to control and regulate aggregate operations on Crown and private land; to require the rehabilitation of land from which aggregate has been excavated; and to minimize adverse impact on the environment in respect of aggregate operations.

The approval process and technical requirements for new applications under the ARA are set out in the 1997 Aggregate Resources of Ontario Provincial Standards (AROPS), which were developed to support the Aggregate Resources Act as amended by Bill 52, the Aggregate and Petroleum Resources Statute Law Amendment Act, in 1996.

The Ministry of Natural Resources Policy A.R. 4.01.07 (2006) outlines the Cultural Heritage Resource Report Standards (Categories 9-12) for Aggregate Permit Applications. However, the 1993 Archaeological Assessment Technical Guidelines of the Ministry of Citizenship, Culture and Recreation have been replaced by the 2011 Standards and Guidelines for Consultant Archaeologists of the renamed Ministry of Tourism, Culture and Sport.

The Standards and Guidelines for Consultant Archaeologists currently form the basis for all work carried out under the ARA.

The purpose of an Archaeological Assessment report is to ensure that archaeological resources are identified, assessed for their significance, and protected (i.e. preserved or collected) in order to better understand and appreciate Ontario's culturally diverse Aboriginal and non-Aboriginal communities heritage.

"Archaeological resources include the physical remains and contextual setting of any structure, event, activity, place, feature or object which, because of the passage of time is on or below the surface of the land or water, and is important to understanding the history of a people or race" (A.R. 4.01.07 (2006).

Various levels of archaeological assessment (Stages 1 to 3) and/or Stage 4 Mitigation of Development Impacts may be required depending on the potential for, and significance of the archaeological resources present on site. All property investigations begin with a Stage 1 archaeological assessment report (referred to in Policy A.R. 4.01.07 a Cultural Heritage Resource Stage 1 report) which determines whether there are any known resources or potential for resources.

The objective of a Stage 1 background study and property inspection is to provide information about the property's geography, history, previous archaeological fieldwork and current land condition and to evaluate in detail the property's archaeological potential to inform the strategies for Stage 2 survey (if required).

The Stage 2 Property Survey provides an overview of archaeological resources on the property and a determination of whether any of the resources might be artifacts and archaeological sites with cultural heritage value or interest. The objectives are to document all archaeological

resources on the property, to determine whether the property contains archaeological resources requiring further assessment, and to recommend appropriate Stage 3 assessment strategies for archaeological sites identified. The property survey involves the on-site documentation and inventory of all archaeological resources through systematic means as appropriate to the characteristics of the property. The chosen survey methods depend on property characteristics such as the nature and extent of the ground cover, the possible depth at which archaeological resources might be located, and the degree and characteristics of past disturbances.

The purpose of Stage 3 Site-specific Assessment is to assess the cultural heritage value of the archaeological site identified in Stage 2 and to determine whether it has been sufficiently documented or if further measures are required to protect or document the site fully. The objectives are to determine the extent of the archaeological site and the characteristics of the artifacts, to collect a representative sample of artifacts, to assess the cultural heritage value or interest of the archaeological site, and to determine the need for mitigation of development impacts and recommend appropriate strategies for mitigation and future conservation (if required).

It is an offence under Sections 48 and 69 of the Ontario Heritage Act for any party other than a licensed archaeologist to make any alteration to a known archaeological site or to remove any artifact or other physical evidence of past human us or activity from the site, until such time as a licensed archaeologist has completed archaeological fieldwork on the site, submitted a report to the Minister stating that the site has no further cultural heritage value or interest, and the report has been filed in the Ontario Public Register of Archaeological Reports referred to in Section 65.1 of the Ontario Heritage Act.