

APPENDIX B - ARCHAEOLOGICAL ASSESSMENT REPORTS

Stage 1 Archaeological Assessment Lakelands Wastewater Pumping Station Upgrades and New Offline Storage Facility (Lots 9 and 10, Concession 2 East of Centre Road, Township of Chinguacousy, County of Peel) City of Brampton, Regional Municipality of Peel

Original Report

Prepared for:

Associated Engineering (Ont.) Ltd.

Suite 200, 165 Commerce Valley Drive West
Markham ON L3T 7V8

Archaeological Licence: P1066 (Lytle)

PIF P1066-0399-2023

Archaeological Services Inc. File: 23EA-241

24 April 2024



Executive Summary

Archaeological Services Inc. was contracted by Associated Engineering (Ont.) Ltd. to conduct a Stage 1 Archaeological Assessment (Background Research and Property Inspection) as part of the Lakelands Wastewater Pumping Station Upgrades and New Offline Storage Facility project. This project involves three specific areas around the artificially constructed Lakelands Lake and public spaces comprised within Lakelands Village Park, as potential sites for the construction of an offline wastewater storage tank. The Stage 1 scope involves three proposed locations.

The Stage 1 background study determined that two previously registered archaeological sites are located within one kilometre of the Study Area, neither of which is within 50 metres. The property inspection determined that the Study Area does not exhibit archaeological potential and does not require further archaeological assessment.

The following recommendations are made:

- 1) The Potential Storage Tank Location 1 Study Area, Potential Storage Tank Location 2 Study Area, and Potential Storage Tank Location 3 Study Area do not retain archaeological potential on account of deep and extensive land disturbance. These lands do not require further archaeological assessment; and,
- 2) Should the proposed work extend beyond the current Study Area, further archaeological assessment should be conducted to determine the archaeological potential of the surrounding lands.



Project Personnel

- **Senior Project Manager:** Lisa Merritt, MSc. (P094) Partner, Director, Environmental Assessment Division.
- **Project Manager:** Danielle Bella, BA Hons., Archaeologist, Technical Writer, Environmental Assessment Division.
- **Project Director:** Jessica Lytle, MSc (P1066), Lead Archaeologist, Technical Writer and Fieldwork Coordinator, Environmental Assessment Division.
- **Division Coordinator:** Katrina Thach, BA Hons. (R1225), Associate Archaeologist, Assistant Manager, Environmental Assessment Division.
- **Project Administrator:** Catherine Kitchen, BA (R1364), Archaeologist, Project Administrator, Environmental Assessment Division.
- **Field Director:** Jessica Lytle.
- **Field Technician:** Ciprian Ardelean, PhD, Senior Associate, Technical Writer and Researcher, Environmental Assessment Division (Acting Field Director).
- **Report Preparation:** Ciprian Ardelean; Danielle Bella.
- **Graphics:** Andrew Clish, BES (P046), Senior Archaeologist, Senior Field Director, Laboratory and Fieldwork Services, Operations Division; Peter Bikoulis, PhD, Archaeologist, GIS Technician, Operation Division; Robin Latour, MPhil, PDip, Associate Archaeologist, Geomatics Specialist, Operations Division.
- **Report Review:** Danielle Bella; Eliza Brandy, MA (R1109), Associate Archaeologist, Project Manager, Environmental Assessment Division; Lisa Merritt.



Table of Contents

Executive Summary	2
Project Personnel	3
Table of Contents	4
1.0 Project Context	7
1.1 Development Context	7
1.1.1 Treaties	8
1.2 Historical Context	8
1.2.1 Indigenous Land Use and Settlement	8
1.2.2 Post-Contact Settlement	10
1.2.3 Map Review	13
1.2.4 Aerial and Orthoimagery Review	14
1.3 Archaeological Context	14
1.3.1 Geography	14
1.3.2 Previously Registered Archaeological Sites	16
1.3.3 Previous Archaeological Assessments	17
2.0 Property Inspection	17
2.1 Field Methods	17
2.2 Current Land Use and Field Conditions	18
3.0 Analysis of Archaeological Potential	19
3.1 Conclusions	20
4.0 Recommendations	20
5.0 Legislation Compliance Advice	21
6.0 Bibliography and Sources	22
7.0 Images	27
7.1 Field Photography	27
8.0 Maps	33



List of Tables

Table 1: Registered Sites within One Kilometre of the Study Area 16

List of Images

Image 1: Potential Storage Tank Location 1 Study Area is disturbed, no potential. 27

Image 2: Potential Storage Tank Location 1 Study Area is disturbed, no potential. 27

Image 3: Potential Storage Tank Location 1 Study Area is disturbed, no potential. 28

Image 4: Potential Storage Tank Location 1 Study Area is disturbed, no potential. 28

Image 5: Potential Storage Tank Location 1 Study Area is disturbed, no potential. 29

Image 6: Potential Storage Tank Location 2 Study Area is disturbed, no potential. 29

Image 7: Potential Storage Tank Location 2 Study Area is disturbed, no potential. 30

Image 8: Potential Storage Tank Location 2 Study Area is disturbed, no potential. 30

Image 9: Potential Storage Tank Location 3 Study Area is disturbed, no potential. 31

Image 10: Potential Storage Tank Location 3 Study Area is disturbed, no potential. 31

Image 11: Potential Storage Tank Location 3 Study Area is disturbed, no potential. 32

Image 12: Potential Storage Tank Location 3 Study Area is disturbed, no potential. 32

List of Figures

Figure 1: Lakelands Wastewater Pumping Station Study Area. 33

Figure 2: The Study Area (Approximate Location) overlaid on the 1859 Tremainé’s Historical County Map of Peel County. 34



Figure 3: The Study Area (Approximate Location) overlaid on the 1877 Illustrated Historical Atlas. 35

Figure 4: The Study Area (Approximate Location) overlaid on the 1909 Topographic Map Brampton Sheet. 36

Figure 5: The Study Area (Approximate Location) overlaid on the 1994 National Topographic Series Brampton Sheet. 37

Figure 6: The Study Area (Approximate Location) overlaid on Aerial Imagery from 1954. 38

Figure 7: The Study Area (Approximate Location) overlaid on Aerial Imagery from 2000. 39

Figure 8: The Study Area (Approximate Location) overlaid on Aerial Imagery from 2002. 40

Figure 9: Study Area – Surficial Geology..... 41

Figure 10: Study Area – Soil Drainage. 42

Figure 11: Lakelands Wastewater Pumping Station Study Area – Results of Stage 1..... 43



1.0 Project Context

Archaeological Services Inc. (ASI) was contracted by Associated Engineering (Ont.) Ltd. to conduct a Stage 1 Archaeological Assessment (Background Research and Property Inspection) as part of the Lakelands Wastewater Pumping Station Upgrades and New Offline Storage Facility Municipal Class Environmental Assessment. This project involves three specific areas around the artificially constructed Lakelands Lake and public spaces comprised within Lakelands Village Park, as potential sites for the construction of an offline wastewater storage tank.

The Stage 1 scope involves the following three proposed locations:

- Potential Storage Tank Location 1 Study Area is located in the northern portion of Lakelands Village Park, southeast of the Southlake Boulevard and Stonylake Avenue intersection (Figure 1: outlined in blue).
- Potential Storage Tank Location 2 Study Area, located in the southwestern portion of Lakelands Village Park, north of the Stonylake Avenue and Deep Sea Drive intersection (Figure 1: outlined in orange).
- Potential Storage Tank Location 3 Study Area; located in the southeastern portion of Lakelands Village Park, northwest of the Southlake Boulevard and Deep Sea Drive intersection (Figure 1: outlined in purple).

All activities carried out during this assessment were completed in accordance with the *Ontario Heritage Act* (1990, as amended in 2023) and the 2011 *Standards and Guidelines for Consultant Archaeologists (S & G)*, administered by the Ministry of Citizenship and Multiculturalism (MCM 2011).

1.1 Development Context

All work has been undertaken as required by the *Environmental Assessment Act, RSO* (Environmental Assessment Act, R.S.O. c. E.18, 1990 as amended 2022) and regulations made under the Act, and are therefore subject to all associated legislation. This project is being conducted in accordance with the *Municipal Class Environmental Assessment* process (Municipal Engineers Association, 2023).



Authorization to carry out the activities necessary for the completion of the Stage 1 archaeological assessment and property inspection was granted by Associated Engineering (Ont.) Ltd. on October 18, 2023.

1.1.1 Treaties

The Study Area is within Treaty 19, the Ajetance Purchase, signed on October 28, 1818 between the Crown and the Mississaugas (Crown-Indigenous Relations and Northern Affairs, 2016). This treaty excluded lands within one mile on either side of the Credit River, Twelve Mile Creek, and Sixteen Mile Creeks. In 1820, Treaties 22 and 23 were signed which acquired these remaining lands, except a 200 acre parcel along the Credit River (Heritage Mississauga, 2012, p. 18).

1.2 Historical Context

1.2.1 Indigenous Land Use and Settlement

Current archaeological evidence indicates that southern Ontario has been occupied by human populations since the retreat of the Laurentide glacier approximately 13,000 years before present (B.P.) (Ferris, 2013). Populations at this time would have been highly mobile, inhabiting a boreal-parkland similar to the modern sub-arctic. By approximately 10,000 B.P., the environment had progressively warmed (Edwards & Fritz, 1988) and populations now occupied less extensive territories (Ellis & Deller, 1990).

Between approximately 10,000-5,500 B.P., the Great Lakes basins experienced low-water levels, and many sites which would have been located on those former shorelines are now submerged. This period produces the earliest evidence of heavy wood working tools, an indication of greater investment of labour in felling trees for fuel, to build shelter, and watercraft production. These activities suggest prolonged seasonal residency at occupation sites. Polished stone and native copper implements were being produced by approximately 8,000 B.P.; the latter was acquired from the north shore of Lake Superior, evidence of extensive exchange networks throughout the Great Lakes region. The earliest archaeological evidence for cemeteries dates to approximately 4,500-3,000 B.P. and is interpreted by archaeologists to be indicative of



increased social organization, investment of labour into social infrastructure, and the establishment of socially prescribed territories (Brown, 1995, p. 13; Ellis et al., 1990, 2009).

Between 3,000-2,500 B.P., populations continued to practice residential mobility and to harvest seasonally available resources, including spawning fish. The Woodland period begins around 2,500 B.P. and exchange and interaction networks broaden at this time (Spence et al., 1990, pp. 136, 138) and by approximately 2,000 B.P., evidence exists for small community camps, focusing on the seasonal harvesting of resources (Spence et al., 1990, pp. 155, 164). By 1,500 B.P. there is macro botanical evidence for maize in southern Ontario, and it is thought that maize only supplemented people's diet. There is earlier phytolithic evidence for maize in central New York State by 2,300 B.P. – it is likely that once similar analyses are conducted on Ontario ceramic vessels of the same period, the same evidence will be found (Birch & Williamson, 2013, pp. 13–15). As is evident in detailed Anishinaabek ethnographies, winter was a period during which some families would depart from the larger group as it was easier to sustain smaller populations (Rogers, 1962). It is generally understood that these populations were Algonquian-speakers during these millennia of settlement and land use.

From the beginning of the Late Woodland period at approximately 1,000 B.P., lifeways became more similar to that described in early historical documents. Between approximately 1000-1300 Common Era (C.E.), larger settlement sites focused on horticulture begin to dominate the archaeological record. Seasonal disintegration of the community for the exploitation of a wider territory and more varied resource base was still practised (Williamson, 1990, p. 317). By 1300-1450 C.E., archaeological research focusing on these horticultural societies note that this episodic community disintegration was no longer practised and these populations now communally occupied sites throughout the year (Dodd et al., 1990, p. 343). By the mid-sixteenth century these small villages had coalesced into larger communities (Birch et al., 2021). Through this process, the socio-political organization of these First Nations, as described historically by the French and English explorers who first visited southern Ontario, was developed. Other First Nation communities continued to practice residential mobility and to



harvest available resources across landscapes they returned to seasonally/annually.

By 1600 C.E., the Confederation of Nations were encountered by the first European explorers and missionaries in Simcoe County. In the 1640s, devastating epidemics and the traditional enmity between the Haudenosaunee and the Huron-Wendat (and their Algonquian allies such as the Nipissing and Odawa) led to the dispersal of the Huron-Wendat from southern Ontario. Shortly afterwards, the Haudenosaunee established a series of settlements at strategic locations along the trade routes inland from the north shore of Lake Ontario. By the 1690s however, the Anishinaabeg were the only communities with a permanent presence in southern Ontario. From the beginning of the eighteenth century to the assertion of British sovereignty in 1763, there was no interruption to Anishinaabeg control and use of southern Ontario.

1.2.2 Post-Contact Settlement

Historically, the Study Area is located in the Geographical Chinguacousy Township, County of Peel, in Lots 9 and 10 and Concession 2 East of Centre Road.

The S & G stipulates that areas of early Euro-Canadian settlement (pioneer homesteads, isolated cabins, farmstead complexes), early wharf or dock complexes, pioneer churches, and early cemeteries are considered to have archaeological potential. Early historical transportation routes (trails, passes, roads, railways, portage routes), properties listed on a municipal register or designated under the Ontario Heritage Act or a federal, provincial, or municipal historic landmark or site are also considered to have archaeological potential.

For the Euro-Canadian period, the majority of early nineteenth century farmsteads (i.e., those that are arguably the most potentially significant resources and whose locations are rarely recorded on nineteenth century maps) are likely to be located in proximity to water. The development of the network of concession roads and railroads through the course of the nineteenth century frequently influenced the siting of farmsteads and businesses. Accordingly, undisturbed lands within 100 metres of an early settlement road are also



considered to have potential for the presence of Euro-Canadian archaeological sites.

The first Europeans to arrive in the area were transient merchants and traders from France and England, who followed Indigenous pathways and set up trading posts at strategic locations along the well-traveled river routes. All these occupations occurred at sites that afforded both natural landfalls and convenient access, by means of the various waterways and overland trails, into the hinterlands. Early transportation routes followed existing Indigenous trails, both along the lakeshore and adjacent to various creeks and rivers (ASI 2006).

1.2.2.1. Chinguacousy Township

The township of Chinguacousy is considered by some to have been named by Sir Peregrine Maitland after the Mississauga word for the Credit River meaning “young pine”, while other scholars assert that it was named in honour of the Ottawa Chief Shinguacose, which was corrupted to the present spelling of ‘Chinguacousy,’ “under whose leadership Fort Michilimacinac was captured from the Americans in the War of 1812” (Mika & Mika, 1977; Rayburn, 1997). The township was formally surveyed in 1818, and the first legal settlers took up their lands later in that same year. It was recorded that the first landowners in Chinguacousy included settlers from New Brunswick, the United States, and also United Empire Loyalists with their children (Armstrong, 1985; Mika & Mika, 1977; Pope, 1877a).

Due to the small population of the newly acquired tract, Chinguacousy was initially amalgamated with the Gore of Toronto Township for political and administrative purposes. In 1821, the population of the united townships numbered just 412. By 1837, the population of the township had reached an estimated 1,921. The numbers grew from 3,721 in 1842 to 7,469 in 1851. Thereafter the figures declined to 6,897 in 1861, and to 6,129 by 1871 (Pope, 1877a; Walton, 1837). Chinguacousy Township was the largest in Peel County and was described as one of the best settled townships in the Home District. It contained excellent, rolling land which was timbered mainly in hardwood with some pine intermixed, and was known for excellent wheat production. The



township contained one grist mill and seven sawmills. By 1851, this number had increased to two grist mills and eight sawmills (Smith, 1846, 1851).

In 1974, part of the township was amalgamated with the City of Brampton, and the remainder was annexed to the Town of Caledon (Armstrong, 1985; Mika & Mika, 1977; Pope, 1877a; Rayburn, 1997; Smith, 1846).

1.2.2.2. City of Brampton

The land of Brampton was originally owned by Samuel Kenny. Kenny sold this land to John Elliot who cleared the land, laid it out into village lots, and named it Brampton. By 1822 Brampton began to be populated and in 1845 the settlement gained a large influx of Irish immigrants leading to its incorporation as a village in 1852. At this point, Brampton had spread across Etobicoke Creek with three bridges spanning it, had seven churches, five schools, a distillery, a cooperage, and a potashery. In 1858 Brampton was connected with the Grand Trunk Railway. This allowed the founding of two major industries in Brampton, the Haggert Foundry and the Dale Estate Nurseries; Dale Estate Nurseries remained the largest employer in the city until the 1940's. By the 1860s, Brampton had a population of 1627 and became the County Town. In 1867 a courthouse was constructed, and Brampton was incorporated as a town in 1873. The population remained fairly static until the late 1940s and 1950s when rapid population growth in Toronto led to widespread changes in the landscape. New subdivisions developed during this time and in the 1950s Bramalea was created.

Called “Canada's first satellite city”, Bramalea was a planned community built to accommodate 50,000 people by integrating houses, shopping centres, parks, commercial business, and industry. In 1974 the City of Brampton was formed as a result of the amalgamation of Chinguacousy Township, Toronto Gore Township, the Town of Brampton, and part of the Town of Mississauga. In the 1980s and 1990s, development spread further with large subdivisions developed on lands formerly used for farming (City of Brampton 2017; Mika and Mika 1977:250-251).



1.2.3 Map Review

The 1859 Tremaine's Historical County Map of Peel County (Tremaine, 1859), 1877 Illustrated Historical Atlas of the County of Peel (Pope, 1877b), the 1909 topographic map Brampton sheet (Department of Militia and Defence, 1909), and the 1994 National Topographic Series Brampton sheet (Energy, Mines and Resources Canada, 1994) were examined to determine the presence of historic features within the Study Area during the nineteenth and twentieth centuries (Figure 2 to Figure 5).

It should be noted that not all features of interest were mapped systematically in the Ontario series of historical atlases. For instance, they were often financed by subscription limiting the level of detail provided on the maps. Moreover, not every feature of interest would have been within the scope of the atlases. The use of historical map sources to reconstruct or predict the location of former features within the modern landscape generally begins by using common reference points between the various sources. The historical maps are geo-referenced to provide the most accurate determination of the location of any property on a modern map. The results of this exercise can often be imprecise or even contradictory, as there are numerous potential sources of error inherent in such a process, including differences of scale and resolution, and distortions introduced by reproduction of the sources.

The 1859 map (Figure 2) and 1877 map (Figure 3) show the nearest historical road allowances are further than 200 metres from the Study Area. No structures or historical features are depicted within or adjacent to the Study Area. The 1909 map (Figure 4) shows the Study Area situated at the foot of a natural low elevation extending in northwest-southeast direction. Deciduous trees border the northern limits of Potential Storage Tank Location 1 Study Area. The 1994 map (Figure 5) shows the artificial Lakelands Lake constructed as a result of the area being used for aggregate extraction. Roads to access the gravel pit are depicted in the general orientation of Southlake Boulevard and Stoneylake Avenue.



1.2.4 Aerial and Orthoimagery Review

Historical aerial imagery from the 1954 archives (City of Toronto, 1954) indicates that the Study Area consisted of agricultural fields (Figure 6).

Aerial imagery from 2000 (Figure 7) and 2002 (Figure 8) show the development of Lakelands Village Park residential neighborhood including extensive grading within the Study Area and creation of the stormwater management ponds (City of Brampton, 2000, 2002).

A review of available historic Google satellite imagery between 2004 and 2002 shows the continued use for construction in 2004 and 2005. By 2006, the Study Area is shown within naturalized green spaces with paved paths.

1.3 Archaeological Context

This section provides background research pertaining to previous archaeological fieldwork conducted within and in the vicinity of the Study Area, its environmental characteristics (including drainage, soils or surficial geology and topography, etc.), and current land use and field conditions. Three sources of information were consulted to provide information about previous archaeological research: the site record forms for registered sites available online from the MCM through “Ontario’s Past Portal”; published and unpublished documentary sources; and the files of ASI.

1.3.1 Geography

In addition to known archaeological sites, the state of the natural environment is a helpful indicator of archaeological potential. Accordingly, a description of the physiography and soils are briefly discussed for the Study Area.

The S & G stipulates that primary water sources (lakes, rivers, streams, creeks, etc.), secondary water sources (intermittent streams and creeks, springs, marshes, swamps, etc.), ancient water sources (glacial lake shorelines indicated by the presence of raised sand or gravel beach ridges, relic river or stream channels indicated by clear dip or swale in the topography, shorelines of drained lakes or marshes, cobble beaches, etc.), as well as accessible or inaccessible



shorelines (high bluffs, swamp or marsh fields by the edge of a lake, sandbars stretching into marsh, etc.) are characteristics that indicate archaeological potential.

Water has been identified as the major determinant of site selection and the presence of potable water is the single most important resource necessary for any extended human occupation or settlement. Since water sources have remained relatively stable in Ontario since 5,000 B.P. (Karrow & Warner, 1990, fig. 2.16), proximity to water can be regarded as a useful index for the evaluation of archaeological site potential. Indeed, distance from water has been one of the most used variables for predictive modeling of site location.

Other geographic characteristics that can indicate archaeological potential include elevated topography (eskera, drumlins, large knolls, and 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. There may be physical indicators of their use, such as burials, structures, offerings, rock paintings or carvings. Resource areas, including food or medicinal plants (migratory routes, spawning areas) are also considered characteristics that indicate archaeological potential (Standards & Guidelines, Section 1.3.1).

The Study Area is located within the eskera and drumlinized till plains of the South Slope physiographic region of southern Ontario (Chapman & Putnam, 1984). The South Slope is the southern slope of the Oak Ridges Moraine (Chapman & Putnam, 1984, pp. 172–174). The South Slope meets the Moraine at heights of approximately 300 metres above sea level, and descends southward toward Lake Ontario, ending, in some areas, at elevations below 150 metres above sea level. Numerous streams descend the South Slope, having cut deep valleys in the till.

The surficial geology mapping (Figure 9) indicates the Study Area contains clay to silt-textured till derived from glaciolacustrine deposits or shale (Ontario Geological Survey, 2010).



The Study Area is underlain by Jeddo clay loam, a grey-brown podzolic with poor drainages, and by Oneida clay loam, a grey-brown podzolic with good drainage (Figure 10).

No natural water sources are within 300 metres of the Study Area. Etobicoke Creek is the closest water source, located approximately 1.4 kilometres southwest of the Study Area.

1.3.2 Previously Registered Archaeological Sites

In Ontario, information concerning archaeological sites is stored in the Ontario Archaeological Sites Database maintained by the MCM. This database contains archaeological sites registered within the Borden system. Under the Borden system, Canada has been divided into grid blocks based on latitude and longitude. A Borden block is approximately 13 kilometres east to west, and approximately 18.5 kilometres north to south. Each Borden block is referenced by a four-letter designator, and sites within a block are numbered sequentially as they are found. The Study Area under review belongs to Borden block AkGw.

According to the Ontario Archaeological Sites Database, two previously registered archaeological sites are located within one kilometre of the Study Area, neither of which are located within 50 metres (MCM 2023). A summary of the sites is provided below in Table 1.

Table 1: Registered Sites within One Kilometre of the Study Area

Borden number	Site Name	Temporal/ Cultural Affiliation	Site type	Researcher
AkGw-130		Pre-Contact/ Indigenous	Findspot	ASI 1999
AkGw-550	Bovaird	Post-Contact	House	Archaeological Consultants Canada 2022



1.3.3 Previous Archaeological Assessments

Background research determined there are no previous assessments involving fieldwork within 50 metres of the Study Area.

2.0 Property Inspection

2.1 Field Methods

A Stage 1 property inspection must adhere to the S & G, Section 1.2, Standards 1-6, which are discussed below. The entire property and its periphery must be inspected. The inspection may be either systematic or random. Coverage must be sufficient to identify the presence or absence of any features of archaeological potential. The inspection must be conducted when weather conditions permit good visibility of land features. Natural landforms and watercourses are to be confirmed if previously identified. Additional features such as elevated topography, relic water channels, glacial shorelines, well-drained soils within heavy soils and slightly elevated areas within low and wet areas should be identified and documented, if present. Features affecting assessment strategies should be identified and documented such as woodlots, bogs or other permanently wet areas, areas of steeper grade than indicated on topographic mapping, areas of overgrown vegetation, areas of heavy soil, and recent land disturbance such as grading, fill deposits and vegetation clearing. The inspection should also identify and document structures and built features that will affect assessment strategies, such as heritage structures or landscapes, cairns, monuments or plaques, and cemeteries.

The Stage 1 archaeological assessment property inspection was conducted under acting Field Director Ciprian Ardelean under the supervision of Jessica Lytle (P1066) on November 15, 2023, in order to gain first-hand knowledge of the geography, topography, and current conditions and to evaluate and map archaeological potential of the Study Area (see Section 2.2). It was a systematic visual inspection from publicly accessible lands only and did not include excavation or collection of archaeological resources. Fieldwork was conducted when weather conditions were deemed clear with good visibility, as per S & G



Section 1.2., Standard 2. November 15, 2023 was sunny, partially clouded, and 10 degrees Celsius. Field photography is presented in Section 7.1 (Image 1 to Image 12). Field observations are overlaid onto the existing conditions of the Study Area in Section 8.0 (Figure 11).

2.2 Current Land Use and Field Conditions

Potential Storage Tank Location 1 Study Area is situated at the northwest entrance to Lakelands Village Park, at the intersection of Southlake Boulevard and Stonelake Avenue (Image 1 to Image 5). Present day, it is a greenspace with paved footpaths leading to a small stormwater management pond. The pond is one of several stormwater management ponds within Lakelands Village Park created since the 1990s. The eastern and southern margins of the area are largely delimited by houses built between 2002-2005. Potential Storage Tank Location 1 Study Area has utilities such as stormwater grills, electric cables and fiber optics along the western and northern sides. The property inspection noted several manholes along the southern limit of the Potential Storage Tank Location 1 Study Area which connected through a discharge to the smaller northern ponds and the central stormwater management ponds. An overgrown gravel access road serves as a drainage route located along the eastern limits of Potential Storage Tank Location 1 Study Area extending south from Southlake Boulevard to the southern asphalt park trail.

The Potential Storage Tank Location 2 Study Area is a green space at the southwest access to Lakelands Village Park (Image 6 to Image 8). It is bounded by park trails to the east, northwest and northeast, and by backyard fences of houses built in 2005 to the southwest. At the time of the property inspection, a square tank of concrete filled with layers of sand and gravel appeared to have recently been constructed. The tank is connected to the nearby stormwater management pond to the southeast through an underground pipe, as indicated by the visible infilled channel cut transversally through the footpath in a rough west-east direction.

The Potential Storage Tank Location 3 Study Area is at the southeastern end of Lakelands Village Park (Image 9 to Image 12) and is accessible from Deep Sea Drive on its southeastern margin, as well as by an arched entrance through the



playground at the intersection with Southlake Boulevard. The area defined as Potential Storage Tank Location 3 Study Area is bounded by stormwater management ponds to the southwest and northwest, and by a playground to the northeast. Potential Storage Tank Location 3 Study Area represents a largely flat open manicured lawned public area that follows an engineered slope towards the main stormwater management ponds.

A plaque about the Brampton esker lake (Toronto and Region Conservation Authority, n.d.) is mounted at the northern edge of the artificially constructed Lakelands Lake, just south of Potential Storage Tank Location 1 Study Area. On this plaque, the city mentions the role this esker had played in the development of the region by serving “as a source of sand and gravel for the construction of roads and infrastructure as Brampton grew quickly in the 1970s and 1980s”. The map on the plaque shows the Study Area within the Lakelands north subdivision and Lakelands south subdivision, depicted as aggregate extraction sites within the Brampton Esker.

3.0 Analysis of Archaeological Potential

The Ministry’s Standards & Guidelines, Section 1.3.1, lists criteria that are indicative of archaeological potential.

- Previously identified archaeological sites within one kilometre (See Table 2); and,
- Well-drained soils (Oneida clay loam)

According to the S & G, Section 1.4 Standard 1e, no areas within a property containing locations listed or designated by a municipality can be recommended for exemption from further assessment unless the area can be documented as disturbed. The Municipal Heritage Register was consulted and no property within the Study Area is Listed or Designated under the *Ontario Heritage Act*.

The property inspection determined that the entirety of the Potential Storage Tank Location 1 Study Area, Potential Storage Tank Location 2 Study Area, and Potential Storage Tank Location 3 Study Area have been subjected to deep soil disturbance events due to aggregate extraction after 1954, construction of the



Lakelands Lake, and construction of the surrounding residential subdivision within Lakelands Village Park circa 2002-2005. According to the S & G Section 1.3.2 these areas do not retain archaeological potential (Image 1 to Image 12; Figure 11: areas highlighted in yellow) and do not require further survey.

3.1 Conclusions

The Stage 1 background study determined that two previously registered archaeological sites are located within one kilometre of the Study Area, neither of which is within 50 metres. The property inspection determined that the Study Area does not exhibit archaeological potential and does not require further archaeological assessment (Figure 11: areas highlighted in yellow).

4.0 Recommendations

The following recommendations are made:

- 1) The Potential Storage Tank Location 1 Study Area, Potential Storage Tank Location 2 Study Area, and Potential Storage Tank Location 3 Study Area do not retain archaeological potential on account of deep and extensive land disturbance. These lands do not require further archaeological assessment; and,
- 2) Should the proposed work extend beyond the current Study Area, further archaeological assessment should be conducted to determine the archaeological potential of the surrounding lands.

NOTWITHSTANDING the results and recommendations presented in this study, ASI notes that no archaeological assessment, no matter how thorough or carefully completed, can necessarily predict, account for, or identify every form of isolated or deeply buried archaeological deposit. In the event that archaeological remains are found during subsequent construction activities, the consultant archaeologist, approval authority, and the Archaeology Programs Unit of the MCM should be immediately notified.

The above recommendations are subject to MCM approval, and it is an offence to alter any archaeological site without MCM concurrence. No grading or other



activities that may result in the destruction or disturbance of any archaeological sites are permitted until notice of MCM approval has been received.

5.0 Legislation Compliance Advice

ASI advises compliance with the following legislation:

- This report is submitted to the MCM as a condition of licensing in accordance with Part VI of the *Ontario Heritage Act*, RSO 2005, c 0.18. The report is reviewed to ensure that it complies with the S & G that are issued by the Minister, and that the archaeological field work and report recommendations ensure the conservation, preservation, and protection 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 MCM a letter will be issued by the MCM stating that there are no further concerns with regards 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 field work 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 Archaeology 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 archaeological resources must cease alteration of the site immediately and engage a licensed consultant archaeologist to carry out archaeological fieldwork, in compliance with sec. 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 or having knowledge of a burial site



shall immediately notify the police or coroner. It is recommended that the Registrar of Cemeteries at the Ministry of Consumer Services is also immediately notified.

- Archaeological sites recommended for further archaeological field work or protection remain subject to Section 48(1) of the *Ontario Heritage Act* and may not be altered, nor may artifacts be removed from them, except by a person holding an archaeological license.

6.0 Bibliography and Sources

Archaeological Services Inc. (2006). *Historical Overview and Assessment of Archaeological Potential Don River Watershed, City of Toronto*. Report on file with the Ontario Ministry of Tourism, Culture and Sport.

Armstrong, F. H. (1985). *Handbook of Upper Canadian Chronology*. Dundurn Press.

Birch, J., Manning, S. W., Sanft, S., & Conger, M. A. (2021). Refined Radiocarbon Chronologies for Northern Iroquoian Site Sequences: Implications for Coalescence, Conflict, and the Reception of European Goods. *American Antiquity*, 86(1), 61–89.

Birch, J., & Williamson, R. F. (2013). *The Mantle Site: An Archaeological History of an Ancestral Wendat Community*. Rowman & Littlefield Publishers, Inc.

Brown, J. (1995). On Mortuary Analysis – with Special Reference to the Saxe-Binford Research Program. In L. A. Beck (Ed.), *Regional Approaches to Mortuary Analysis* (pp. 3–23). Plenum Press.

Chapman, L. J., & Putnam, F. (1984). *The Physiography of Southern Ontario* (3rd ed., Vol. 2). Ontario Ministry of Natural Resources.

City of Brampton. (2000). *2000 Spring Orthophoto* [Orthoimagery]. City of Brampton. <https://geohub.brampton.ca/datasets/2000-spring-orthophoto-1/explore?location=43.683912%2C-79.763350%2C17.64>



City of Brampton. (2002). *2002 Spring Orthophoto* [Orthoimagery]. City of Brampton. <https://geohub.brampton.ca/datasets/2002-spring-orthophoto/explore?location=43.718312%2C-79.765987%2C15.02>

City of Brampton. (2017). *2017 Brampton History*. 2017 Brampton History. <http://www.brampton.ca/EN/Arts-Culture-Tourism/Tourism-Brampton/Visitors/Pages/BramptonHistory.aspx>

City of Brampton. (2022). *River Walk: Etobicoke Creek History*. City of Brampton. <https://www.brampton.ca/EN/Business/planning-development/projects-studies/riverwalk/Pages/Etobicoke-Creek-History.aspx>

City of Toronto. (1954). *City of Toronto 1954 Aerial Imagery* [Map]. Toronto Maps. <https://map.toronto.ca/torontomaps/>

Crown-Indigenous Relations and Northern Affairs. (2016). *Ajetance Treaty, No. 19*. Treaty Texts – Upper Canada Land Surrenders. <https://www.rcaanc-cirnac.gc.ca/eng/1370372152585/1370372222012#ucls17>

Department of Militia and Defence. (1909). *Brampton Sheet No. 35* [Map].

Dodd, C. F., Poulton, D. R., Lennox, P. A., Smith, D. G., & Warrick, G. A. (1990). The Middle Ontario Iroquoian Stage. In C. J. Ellis & N. Ferris (Eds.), *The Archaeology of Southern Ontario to A.D. 1650* (pp. 321–360). Ontario Archaeological Society Inc.

Edwards, T. W. D., & Fritz, P. (1988). Stable-Isotope Paleoclimate Records from Southern Ontario, Canada: Comparison of Results from Marl and Wood. *Canadian Journal of Earth Sciences*, 25, 1397–1406.

Ellis, C. J., & Deller, D. B. (1990). Paleo-Indians. In C. J. Ellis & N. Ferris (Eds.), *The Archaeology of Southern Ontario to A.D. 1650* (pp. 37–64). Ontario Archaeological Society Inc.

Ellis, C. J., Kenyon, I. T., & Spence, M. W. (1990). The Archaic. In C. J. Ellis & N. Ferris (Eds.), *The Archaeology of Southern Ontario to A.D. 1650* (pp. 65–124). Ontario Archaeological Society Inc.



Ellis, C. J., Timmins, P. A., & Martelle, H. (2009). At the Crossroads and Periphery: The Archaic Archaeological Record of Southern Ontario. In T. D. Emerson, D. L. McElrath, & A. C. Fortier (Eds.), *Archaic Societies: Diversity and Complexity across the Midcontinent*. (pp. 787–837). State University of New York Press.

Energy, Mines and Resources Canada. (1994). *Brampton Sheet 30M/12* [Topographic Map].

Ferris, N. (2013). Place, Space, and Dwelling in the Late Woodland. In M. K. Munson & S. M. Jamieson (Eds.), *Before Ontario: The Archaeology of a Province* (pp. 99–111). McGill-Queen’s University Press.
<http://www.jstor.org/stable/j.ctt32b7n5.15>

Heritage Mississauga. (2012). *Heritage Guide: Mississauga*.
<<http://www.heritagemississauga.com/assets/Heritage%20Guide%20-%20Final%20-%202012.pdf>>

Karrow, P. F., & Warner, B. G. (1990). The Geological and Biological Environment for Human Occupation in Southern Ontario. In *The Archaeology of Ontario to A.D. 1650* (pp. 5–36). London Chapter, Ontario Archaeological Society.

Mika, N., & Mika, H. (1977). *Places In Ontario: Their Name Origins and History, Part I, A-E: Vol. I* (<https://archive.org/details/placesinontariot0001mika>). Mika Publishing Company; Internet Archive.

Ministry of Citizenship and Multiculturalism. (1990). *Ontario Heritage Act, R.S.O. c. O.18*.

Ministry of Citizenship and Multiculturalism. (2022). *Ontario’s Past Portal*. PastPortal. <https://www.pastport.mtc.gov.on.ca>

Ministry of Citizenship and Multiculturalism. (2023). *Ontario’s Past Portal*. PastPortal. <https://www.pastport.mtc.gov.on.ca>

Environmental Assessment Act, R.S.O. c. E.18, (1990).



MTC, (Ministry of Tourism and Culture). (2011). *Standards and Guidelines for Consultant Archaeologists*. Archaeology Programs Branch, Ontario Ministry of Tourism and Culture.

Municipal Engineers Association. (2023). *Municipal Class Environmental Assessment*.

Ontario Geological Survey. (2010). *Surficial geology of Southern Ontario. Miscellaneous Release—Data 128 – Revised*. [Map].
http://www.geologyontario.mndm.gov.on.ca/mndmaccess/mndm_dir.asp?type=pub&id=MRD128-REV

Pope, J. H. (1877a). *Illustrated Historical Atlas of the County of Halton, Ont.* [Map]. Walker and Miles.

Pope, J. H. (1877b). *Illustrated Historical Atlas of the County of Peel, Ont.* [Map]. Walker and Miles.

Rayburn, A. (1997). *Place Names of Ontario*. University of Toronto Press.

Ridout, T. (1819). *Chinguacousy Township* [Map].

Rogers, E. S. (1962). *The Round Lake Ojibwa*. Royal Ontario Museum.

Smith, W. H. (1846). *Smith's Canadian Gazetteer, Comprising Statistical and General Information Respecting All Parts of the Upper Province, or Canada West*. H. & W. Rowsell; Internet Archive.
<https://archive.org/details/smithscanadianga00smit/page/n7/mode/2up?ref=ol&view=theater>

Smith, W. H. (1851). *Canada: Past, Present and Future, Being a Historical, Geographical, Geological and Statistical Account of Canada West*. (Vol. 1). Thomas Maclear; Internet Archive.
https://archive.org/details/cihm_40735/mode/2up



Spence, M. W., Pihl, R. H., & Murphy, C. (1990). Cultural Complexes of the Early and Middle Woodland Periods. In C. J. Ellis & N. Ferris (Eds.), *The Archaeology of Southern Ontario to A.D. 1650*. Ontario Archaeological Society Inc.

Toronto and Region Conservation Authority. (n.d.). *The Esker Lake: A Natural Source of Water Plaque*.

Toronto and Region Conservation Authority. (2019). *Watershed Features—Etobicoke & Mimico*. <https://trca.ca/conservation/watershed-management/etobicoke-mimico-creek/watershed-features/>

TRCA. (2010). *Etobicoke and Mimico Creeks Watersheds, Technical Update Report, Executive Summary*. https://trcaca.s3.ca-central-1.amazonaws.com/app/uploads/2016/03/10152419/EXEC_SUMMARY_BOOKLET.pdf

Tremaine, G. C. (1859). *Tremaine's Map of the County of Peel* [Map]. George C. Tremaine.

Walton, G. (1837). *The City of Toronto and Home District Commercial Directory*. Dalton and Coates.

Williamson, R. F. (1990). The Early Iroquoian Period of Southern Ontario. In C. J. Ellis & N. Ferris (Eds.), *The Archaeology of Southern Ontario to A.D. 1650* (pp. 291–320). Ontario Archaeological Society Inc.



7.0 Images

7.1 Field Photography



Image 1: Potential Storage Tank Location 1 Study Area is disturbed, no potential.



Image 2: Potential Storage Tank Location 1 Study Area is disturbed, no potential.



Image 3: Potential Storage Tank Location 1 Study Area is disturbed, no potential.



Image 4: Potential Storage Tank Location 1 Study Area is disturbed, no potential.



Image 5: Potential Storage Tank Location 1 Study Area is disturbed, no potential.



Image 6: Potential Storage Tank Location 2 Study Area is disturbed, no potential.



Image 7: Potential Storage Tank Location 2 Study Area is disturbed, no potential.



Image 8: Potential Storage Tank Location 2 Study Area is disturbed, no potential.



Image 9: Potential Storage Tank Location 3 Study Area is disturbed, no potential.



Image 10: Potential Storage Tank Location 3 Study Area is disturbed, no potential.



Image 11: Potential Storage Tank Location 3 Study Area is disturbed, no potential.



Image 12: Potential Storage Tank Location 3 Study Area is disturbed, no potential.

8.0 Maps

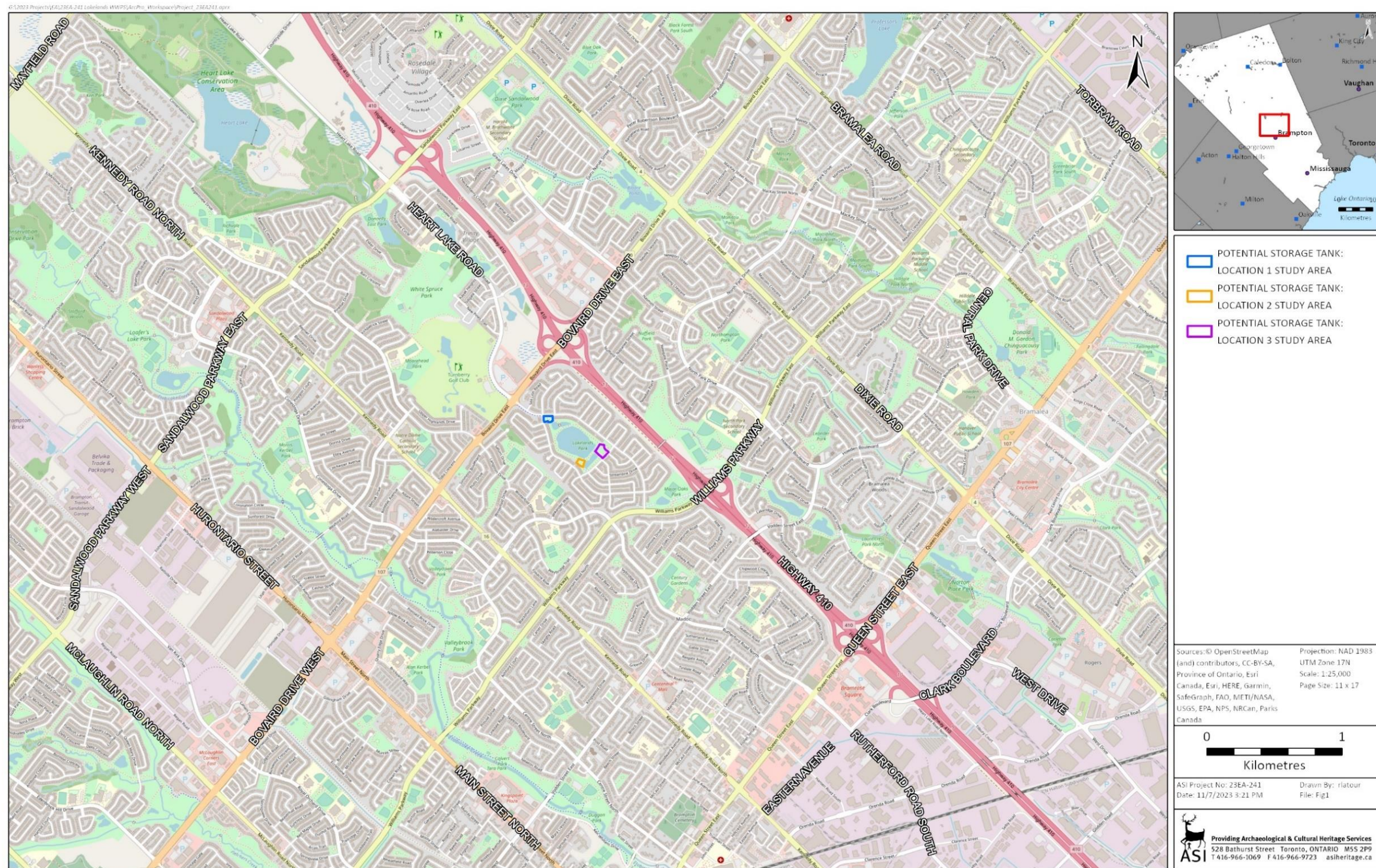


Figure 1: Lakelands Wastewater Pumping Station Study Area.



G:\2023 Projects\EA\23EA-241 Lakelands WWP\view\23EA241_HistMap.mxd

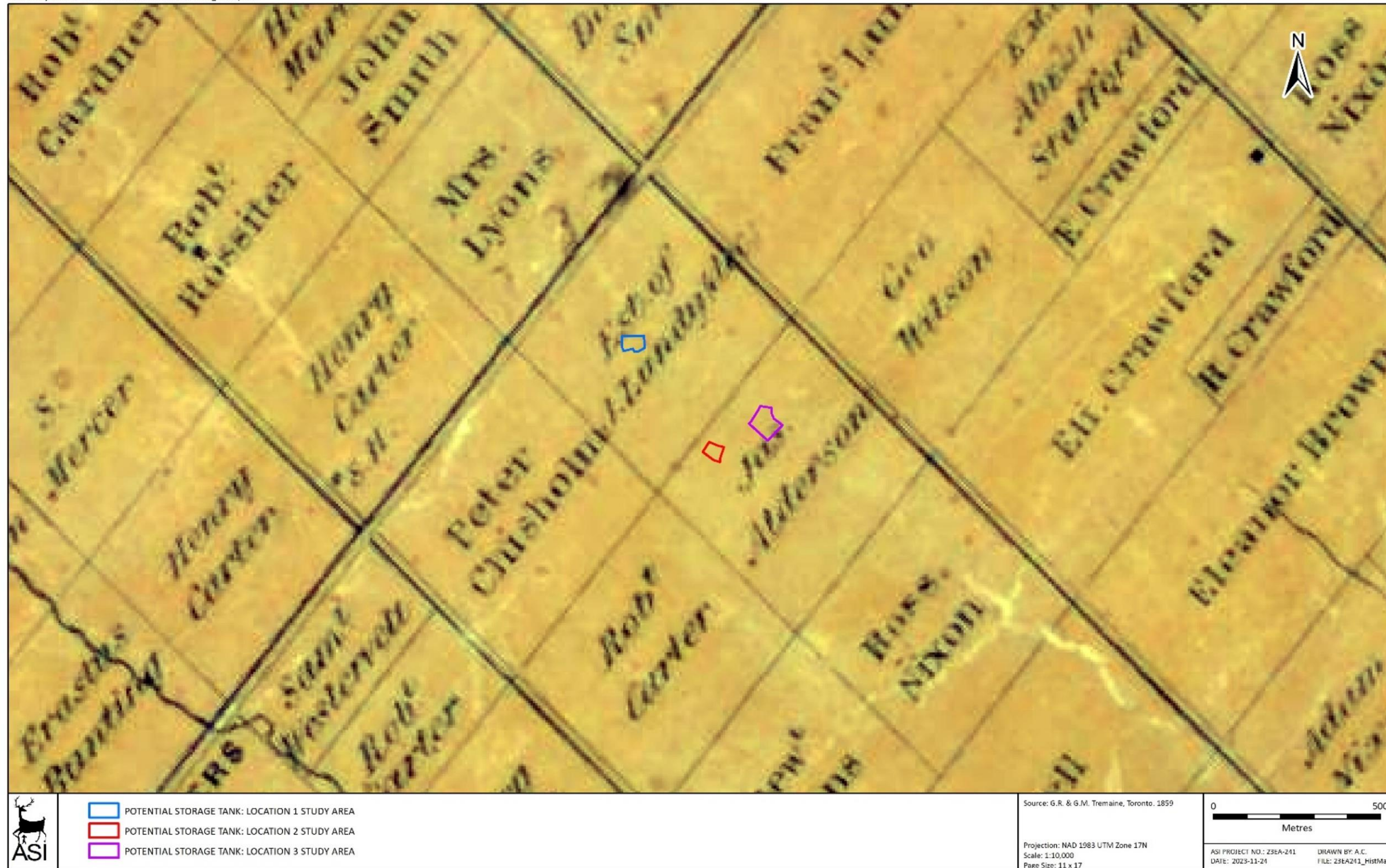


Figure 2: The Study Area (Approximate Location) overlaid on the 1859 Tremaine’s Historical County Map of Peel County.





Figure 3: The Study Area (Approximate Location) overlaid on the 1877 Illustrated Historical Atlas.



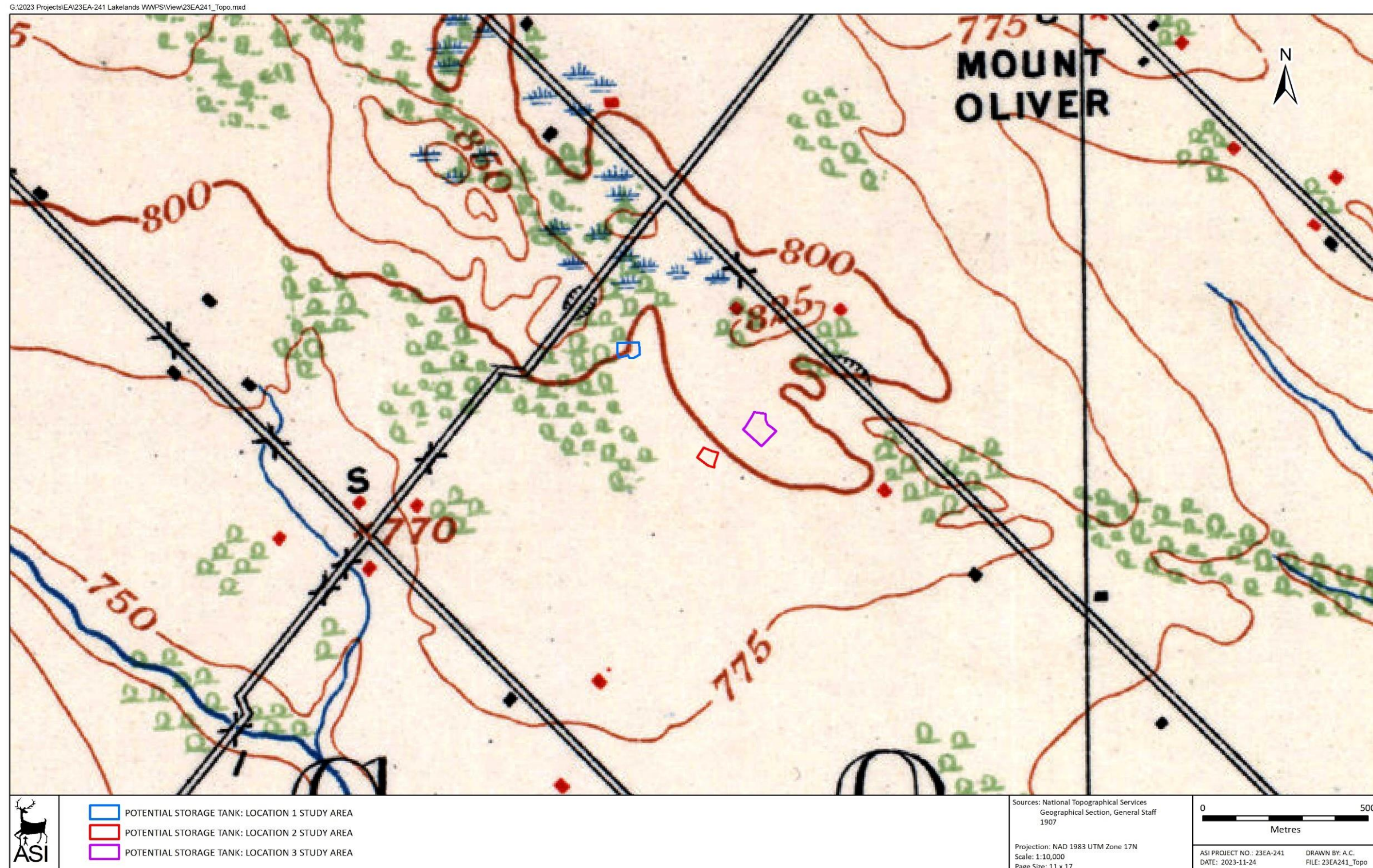


Figure 4: The Study Area (Approximate Location) overlaid on the 1909 Topographic Map Brampton Sheet.

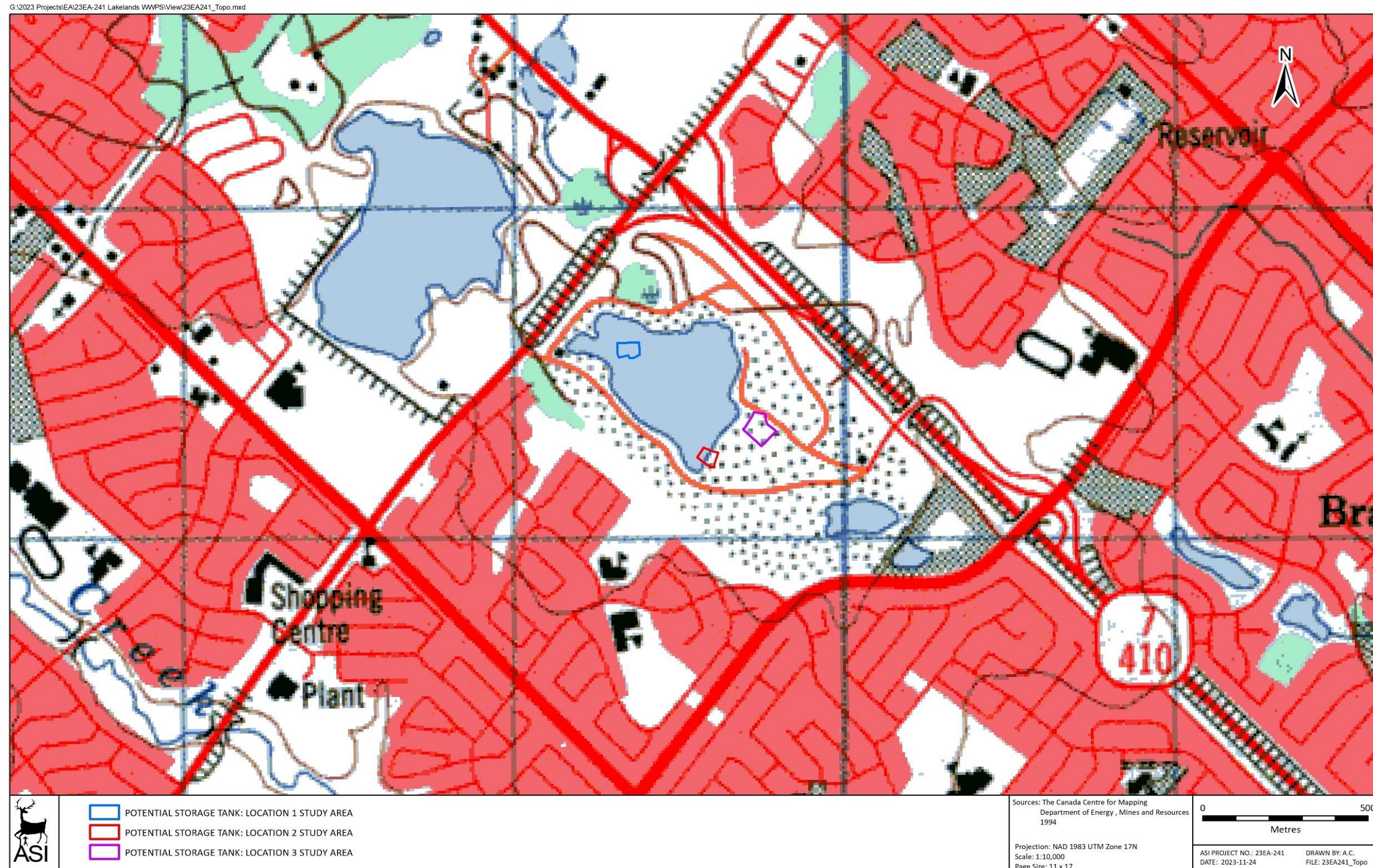


Figure 5: The Study Area (Approximate Location) overlaid on the 1994 National Topographic Series Brampton Sheet.

G:\2023 Projects\EA\23EA-241 Lakelands WWPS\View\23EA241_Aerial.mxd



Figure 6: The Study Area (Approximate Location) overlaid on Aerial Imagery from 1954.



G:\2023 Projects\EA\23EA-241 Lakelands WWFS\view\23EA241_Aerial.mxd



Figure 7: The Study Area (Approximate Location) overlaid on Aerial Imagery from 2000.



G:\2023 Projects\EA\23EA-241 Lakelands WWFS\view\23EA241_Aerial.mxd



Figure 8: The Study Area (Approximate Location) overlaid on Aerial Imagery from 2002.

G:\2023 Projects\EA\23EA-241 Lakelands WWFS\View\23EA241_Geology.mxd



Figure 9: Study Area – Surficial Geology.





Figure 10: Study Area – Soil Drainage.





Figure 11: Lakelands Wastewater Pumping Station Study Area – Results of Stage 1.

