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DATE: April 30, 2010

TO: Peter Petrone
Parsons
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FROM: Nina M. Versaggi, PhD RPA

Nina M. Versaggi

SUBJECT: Work Plan Addendum for Onondaga Lake Project, Upland and Shoreline Area, Onondaga County, New York

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INTRODUCTION

On behalf of Honeywell, Parsons authorized archaeologists from the Public Archaeology Facility (PAF) at Binghamton University to create an addendum to the existing work plan (Hohman 2010) for the Phase 1B survey of the selected upland and shoreline areas of potential effect (APE) for the Onondaga Lake Project. The addendum work areas include:

1) the shoreline survey of Wastebeds 1-8;
2) the slurry pipeline; and
3) a water treatment plant on Wastebeds 12 and 13 and associated effluent pipeline from Wastebeds 12 and 13 to a leachate overflow pumping station adjacent to a settling basin east of Wastebed 12.

This work plan is based on the results of previous background research and also includes:

- a Phase 1A assessment of Onondaga Lake by PAF (Hohman 2004);
- archaeological assessments of the Willis Avenue/Semet Lakeshore IRM (Hohman 2004; Versaggi and Hohman 2006);
- a walkover of the project area by Michael Rudler of PAF in May of 2005;
- an examination of additional boring logs and historic maps for the revised approaches in 2007 and 2008 at Ninemile Creek and Geddes Brook, as well as for the Harbor Brook IRM discussed in the spring of 2008; and
- the original Phase 1B work plan for the Onondaga Lake Project, Upland and Shoreline Area (Hohman 2010).

This addendum work plan addresses only the identification of archaeological and architectural resources. PAF understands that USEPA has initiated government-to-government consultations with the Onondaga Nation in compliance with 36 CFR Part 800.4 (a)(b) regarding properties of religious and cultural significance. However, at this time, USEPA has not asked Honeywell, Parsons, or PAF to address the task of identifying religious and cultural properties. Therefore, no analysis has been performed as to whether the remediation of the areas included in this report may have an effect on Properties of Cultural and Religious Significance. In the interim, the Onondaga Nation has provided the following statement.

Onondaga Nation's Spiritual and Cultural History of Onondaga Lake[1]

The region of Onondaga Lake and the Onondaga Lake watershed has been our homeland since the dawn of time. We have been a steward of Onondaga Lake since time immemorial and will continue to do so forever, as that is what has been mandated from the Gayanashagowa, the Great Law of Peace. In the 1794 Treaty of Canandaigua the United States government recognized Onondaga Lake as part of our aboriginal territory.

The Lake is the spiritual, cultural and historic center of the Haudenosaunee Confederacy. Over one thousand years ago, the Peacemaker brought the Mohawk, Oneida, Onondaga, Cayuga, and Seneca Nations together on the shores of Onondaga Lake. At the lakeshore, these Nations accepted the message of peace, laid down their arms, and formed the Haudenosaunee Confederacy. The Confederacy was the first representative democracy in the West.

To symbolize the Confederacy, the Peacemaker planted a white pine, the Tree of Peace, on the shore of Onondaga Lake. It is understood that the Peacemaker chose the white pine because the white pine's needles are clustered in groups of five, just as the five founding Nations of the Confederacy clustered together for strength. The boughs of the white pine represent the laws that protect all the people. An eagle was placed at the top of the tree to watch for danger from without and within. Four white roots of peace reach out in the four directions towards anyone or any Nation who wishes to come under this tree of peace.

As the birth place of the Confederacy and democracy, the Lake is sacred to the Haudenosaunee. The Onondaga Nation has resided on the Lake and throughout its watershed since time immemorial, building homes and communities, fishing, hunting, trapping, collecting plants and medicine, planting agricultural crops, performing ceremonies with the natural world dependent on the Lake, and burying our ancestors - the mothers, fathers and children of the Onondaga Nation. The Onondaga Nation views its relationship to this area as a place where we will forever come from and will return to.

It brings great sadness to the people of the Onondaga Nation that despite our long stewardship of the Lake and its watershed, it took only one hundred years of abuse to wreak havoc to the Lake, its tributaries and all the plants, animals and marine life that depend on the Lake and its watershed. Industry interfered with the Onondaga Nations's relationship to the land and disturbed the ancestors that were interred throughout the watershed - either by direct excavation or contamination, or indirect efforts such as construction on top of grave sites. We wish to bring about a healing between us and all others who live within our homelands around the lake. We must in order to protect the future generations "whose faces are looking up from the earth."

We are one with this land and this Lake. It is our duty to work for a healing of this land, and all of its waters and living things, to protect them, and to pass on a healthy environment to future generations - yours and ours.

[1] The Onondaga Nation requested that the oral tradition concerning the significance of Onondaga Lake to the Onondaga and Haudenosaunee Confederacy be included in this report. The Onondaga Nation's statement may not necessarily reflect the views of the Public Archaeology Facility, Parsons or Honeywell International Inc. Further, the inclusion of the Onondaga Nation's oral traditional shall not constitute an admission of any fact or law in any judicial or administrative proceeding. In addition, the statements and findings made in this report by Honeywell, Parsons, and the Public Archaeology Facility may not reflect the opinions and views of the Onondaga Nation, and do not constitute an admission by the Onondaga Nation of fact or law in any legal or other proceeding.

Proposed Work Plan by Area

This addendum work plan addresses each of the three new APEs and presents summaries from previous background research that are relevant to the proposed APEs. The following sections will address the previous research to date; the field walkover results for each APE; a discussion of the proposed Phase 1B work plan; the general field methodologies; and a proposed schedule to accomplish this work.

SHORELINE SURVEY OF WASTEBEDS 1-8

The APE for Wastebeds 1-8 is located along the eastern and northern shorelines of these wastebeds (Figures 12-15 in Appendix I, pp. 20-23; Figures 1/G-3/G-2 in Appendix II, pp. 31-33; and Figure 1 in Appendix VIII, p. 479) in the Town of Geddes, Onondaga County, New York. Proposed impacts may include the excavation of a ground water collection trench (average depth of 8 ft below existing grade), the excavation of a seep collection trench (approximately 4 ft deep from existing grade), passive wells below the ground water collection trench with the depth of the wells averaging 33 ft deep, placement of graded gravel and live fascines on the surface, crib walls, 5.4 acres of wetlands (Wetland A and Wetland B- see Figure 1 in Appendix II, p. 31), as well as the construction of 2.3 acres of connected wetlands (excavation averaging 10 ft below existing grade). The APE for the shoreline survey to the northeast corner of Wastebeds 1-8 is approximately 91 x 1829m (300 x 6000 ft), with an additional 915 m (3000 ft) of fascines and crib wall being placed on the surface around the northeast corner of Wastebeds 1-8, although surface grading or excavation to 2-4 ft below grade may also be necessary (Ryan Davis, pers. comm. 2010 and Brad Kubiak, pers. comm. 2010). Boring logs (Appendix III and V) and historic maps (Figures 1-10 in Appendix VIII, pp. 479-488) suggest that much of the project area along the east shoreline and a portion of the northern shoreline was either under the water level of the lake or consisted of wetlands adjacent to the lake prior to 1800 (Figure 3 in Appendix VIII, p. 481). By the late 1800's, the lowering of the lake had reclaimed some of the land adjacent to the lake, including area of the Lakeview Point resort at the northeast edge of Wastebeds 1-8. The changes in the lake level for canal purposes, as well as the placement of industrial waste in Wastebeds 1-8, have created the present shoreline.

Detailed geomorphological analysis of boring logs by Geoarchaeology Associates (Appendix IV, pp. 317-322) has determined that the present eastern shoreline was under the lake level prior to the placement of the industrial wastes in Wastebeds 1-8, while the northern shoreline closely approximates the shoreline that existed prior to 1800. Additional boring logs analyzed by PAF, as well as analysis of borings and other literature by O'Brien and Gere (Figures 4-8 in Appendix I, pp. 15-19 and Figures 17, 18 and 20 in Appendix II, pp. 28-30) has determined that soils within the project area on the eastern shoreline include marl, as well as some areas of black silt below Solvay Waste (Appendix V, pp. 324-427). The black silt is suggestive of wetlands along the former shoreline of Onondaga Lake, while the marl is indicative of soil deposition below the water table. Review of an 18th century map, as well as coring samples, suggests that much of the northern shoreline may have been swamps with black ash and a swamp with sugar maple and oak (Figure 3 in Appendix VIII, p. 481). At the northeast corner of Wastebeds 1-8, soil borings (SB235-243) suggest that there is 2 to 6 ft of sand above marl, suggesting that this sand deposit may have been created in the mid to late 19th century during the reclamation of land and used as beach area, especially for the Lake View Point Resort.

Precontact Period History

The area around Onondaga Lake has a long history of land use and settlement during the centuries and millennia prior to European contact. An extensive archaeological record exists from as early as the Late Archaic period (4000-1500 B.C.), and continuing through the Late Woodland period (A.D. 1000-1500). A minimum of 26 known precontact period sites are recorded within a mile of the entire Onondaga Lake project. All of the known sites are either located around Onondaga Lake or adjacent to several major waterways that flow into or out of the lake. These sites include: traces of occupation, campsites, hamlets or villages, burial mounds, and an earthwork (Hohman 2004). This record suggests that the area around Onondaga Lake was important for the resources (e.g., potable water, edible plants, medicinal plants, wood, bark, animals, fish, etc.) found within and adjacent to the lake, as well as for the location of villages, and special use areas.

It is likely that the perimeter of the lake included low-lying wetlands (as shown in Figure 3 in Appendix VIII, p. 481), comprised of water-saturated muck soils, and grasses, ferns, and reed-like vegetation. While wetlands are important natural water features that attract wildlife, and promote the growth of certain types of edible and non-edible plants of importance, it was the higher, dry land nearby that would have contained camps, larger residential sites, and even the short-term stations where the resources collected from these water features would be processed. As is the case today, wetlands are fragile environments that suffer from disturbance to their ecosystems. It is unlikely that evidence of precontact landuse would be found within wetlands, but is highly likely nearby on elevated, well-drained natural soils.

Precontact Sensitivity Assessment

Consultation with members of the Onondaga Nation determined that all areas of the lake were used for important tasks. The area adjacent to Onondaga Lake and the confluence of Ninemile Creek is highly sensitive for precontact cultural resources. These could include a variety of long-term settlements, special use areas, short-term camps, and resource procurement and processing stations related to the collection of salt, black ash staves, and an array of other plant, animal, and fish resources common along the edge of a lake and along a major waterway flowing into the lake. However, much of the shoreline on the late 18th century map is shown as swamp and sedge (which are grasses commonly found associated with wetlands) and it is unlikely that evidence of precontact landuse would be found within these wetlands. This sensitivity is subject to change depending on the land modifications that have occurred through time that would have impacted the archaeological remains of these activities.

Postcontact Period History

At the time of European contact by the French, Dutch, and English, the project area was part of the political, economic, and spiritual heartland of the Onondaga Nation of the Haudenosaunee (Iroquois) Confederacy. Much of the known Onondaga settlements were located to the southeast of Onondaga Lake, although between 1600-1625, the settlement of Kaneenda flourished to the south of Onondaga Lake at the mouth of Onondaga Creek (Bradley 1987).

European settlements developed slowly to the west of Onondaga Lake during the postcontact period. From the 17th century through the mid- to late-19th century, much of the area adjacent to Onondaga Lake was covered with salt marshes, which were used for the production of salt. However, these areas were less favorable locations for residential villages. Salt production allowed settlement in other areas around Onondaga Lake (Syracuse, Geddes, Salina) to grow and prosper through the mid-19th century. Within the general vicinity of Wastebeds 1-8, the area was identified as "Geddes Marsh" in 1859, and as "Geddes Marsh and reclaimed land" in 1874 (Figure 6 in Appendix VIII, p. 484). In 1872, the Lake View Hotel had been built on low lying area at the northeast edge of the area now known as Wastebeds 1-8. The resort was located on low terrain and the grounds became inundated when the lake level rose. The 1892 Sanborn map (Figure 9 in Appendix VIII, p. 487) identifies the resort buildings as within 75 m (250 ft) of the shoreline. When the owner, Frank Haberle, died in 1916, the resort closed. Between 1929 and 1938, the property was fully covered with waste from the Solvay Process Company, and dumping continued on the property through 1943 (Thompson 2002). Soil borings along the northern edge of the northeast corner of Wastebeds 1-8 (SB227-SB232) contain .6 to 4 m (2 to 13 ft) of Solvay waste situated above marl deposits (Figure 5 in Appendix II, p. 25 and Appendix V). Between SB232-SB236, the soil corings suggest deposits of .2 to 1.2 m (6 inches to 4 ft) of Solvay waste on top of marl (Appendix V). However, between SB237 and SB243 (Appendix V), there is between 2.5 to 7.5 ft of sand and silt shoreline on top of marl, suggested of reclaimed land and which matches the area within the shoreline on the 1898 USGS map (Figure 10 in Appendix VIII, p. 488). Much of the interior portion of theformer resort may be covered by 6-24 m (20-80 ft) of waste. The approximate shoreline in 1898 in the vicinity of Wastebeds 1-8 has been overlaid on the 1947 USGS map (see Figure 10 in Appendix VIII, p. 488).

Postcontact Sensitivity Assessment

Much of the area adjacent to Onondaga Lake and near the confluence of Ninemile Creek may have been used by Native Americans (specifically the Onondaga Nation) in the 17th century and beyond for a variety of purposes, including short-term camps, special use areas, and resource procurement/processing tasks. Consultation with members of the Onondaga Nation determined that all areas of the lake were used for important tasks. The area adjacent to

Onondaga Lake and the confluence of Ninemile Creek, would have been sensitive for a variety of long-term settlements, short-term camps, and resource procurement and processing stations related to tasks similar to those described in the Precontact section. This sensitivity is subject to change depending on the land modifications that have occurred through time that would have impacted the archaeological remains of these activities. Much of the current shoreline was either under the water level of Onondaga Lake or was shoreline that consisted of swamp and sedges (as depicted on the late 18th century map and inferred by soil borings -see Figure 3 in Appendix VIII, p. 481 and Appendix V, pp. 324-427). Wetlands are fragile environments and therefore it is unlikely that evidence of landuse prior to the 19th century would be found within these wetlands.

Historic structures from the Lake View Point resort were located under the waste or on the edge of northeast corner of Wastebeds 1-8 during the mid 19th century to the early 20th century. The main saloon and dancing pavilion were located approximately 30 m (100 ft) from the shoreline in the early 20th century (See Figure 9 in Appendix VIII, p. 487). The Lake View Point resort, which appears to have been constructed on reclaimed land in the 19th century, may be located near the edge of the present Wastebeds 1-8 (see Figure 10 in Appendix VIII, p. 488). Based on this information, there is a high sensitivity for postcontact resources associated with the resort, although the resources may be located just north of any areas that may be impacted by construction.

Potential Impacts

Preliminary plans show a series of IRM alternatives (IRM alternatives 2-4) (Figures 13-15 in Appendix I, pp. 21-23) and wetland alternatives (Figures 1/G-3/G-2 in Appendix II, pp. 31-33), which may impact areas from the eastern shoreline to the edge of the wastebeds at 370 ft ASL. Along the northern shoreline, the impact areas are primarily along the edge of the current shoreline. On the eastern shoreline, the impacts may include a ground water collection trench along the edge of the present shoreline (average depth of excavation to be 8 ft below the existing grade), passive wells below the collection trench (with an average depth of 33 ft below existing grade), a seep collection trench at the base of the steeply sloping portion of Wastebeds 1-8 (with an average depth of 4 ft below the existing grade), as well as excavation work associated with the construction of 5.4 acres of wetlands (Wetland A and Wetland B- see Figure 1 in Appendix II, p. 31) and 2.3 acres of connected wetlands (with an average depth of excavation being 10 ft below the existing grade). In addition, graded gravel and live fascines and crib walls will be placed along the eastern shoreline, as well as around the northeast edge of Wastebeds 1-8. The fascines may include surface grading and the crib walls may include grading or removal of waste below the surface (commonly up to 2 ft into the substratum - Ryan Davis, pers. comm, 2010).

Proposed Archaeological Work

Much of the northern shoreline is discussed in the original Phase 1B work plan (Hohman 2010) and will be tested through a series of shovel test pits (STPs), units, or coring samples. The current eastern shoreline was created by the placement of industrial waste in Wastebeds 1-8, as well as the lowering of the lake in the mid to late 19th century, allowing for reclaimed land. The reclaimed land includes the northeastern corner of Wastebeds 1-8 and which is present on the 1898 USGS map (Figure 8 in Appendix VIII, p. 486). Based on soil borings (Appendix III and V, pp. 35-317 and pp. 323-427) and 18th and 19th century historic maps (Figures 3-10 in Appendix VIII, pp. 481-488), the area to be impacted along the eastern shoreline survey consists either of land that was built over swamp or wetlands on the shore of Onondaga Lake or land that was created by the Solvay waste being placed over area that was once under Onondaga Lake. Therefore along the eastern shoreline of Wastebeds 1-8, no further archaeological work is recommended. On the northern edge of the northeast corner of Wastebeds 1-8, the soil borings suggest that Solvay waste has been placed on top of marl and no testing is recommended for that portion of the shoreline survey. At the northeast corner of Wastebeds 1-8, the soil borings suggest sand and silt deposits, probably created during the reclaiming of land in the 19th century and used as part of the Lakeview Point Resort. Because impacts may occur for the fascines and the crib wall below the surface on the edge of the current shoreline in the vicinity of the Lakeview Point Resort, we recommend a series of STPs at 7.5 m (25 ft) intervals (70-90 STPs total) along the route of the proposed fascines and crib wall along the northeastern corner of Wastebeds 1-8.

SLURRY PIPELINE

The slurry pipeline will be located from Wastebed B along the eastern shoreline of Onondaga Lake to Wastebed 13. From Wastebed B, the proposed pipeline will be located in the causeway on the eastern shoreline and will then move up slope along the western edge of Wastebeds 1-8. The pipeline will then run along an area between I-690 and Wastebeds 1-8, crossing I-690 through Ninemile Creek and then running within and along Ninemile Creek to Wastebed 13 (Appendix VI, p. 429-475). The proposed route of the slurry pipeline will be located on the ground surface throughout the length of the pipeline except under a short section of asphalt on top of Wastebeds 1-8 and in the vicinity of two areas that will require the pipeline to be bored underneath the surface: 1) underneath the Erie Lackawanna Railroad and State Fair Boulevard and 2) underneath the CSX Railroad (Appendix VI, p. 475). The steel casing of the pipe will have at least 1.7 m (5.5 ft) of minimum cover. The portion of the proposed pipeline underneath asphalt roadway on top of Wastebeds 1-8 will be placed approximately 1.2 to 1.5 m (4 to 5 ft) below the surface. Much of the APE for the slurry pipeline will overlap the 20th century causeway, industrial wastes in Wastebeds 1-8, the bed of Ninemile Creek, and the north side of Ninemile Creek. The APE for the slurry pipeline is approximately 6047 m (19,833 ft) in length with a maximum of 7.5 m (25 ft) in width.

Precontact Period History

The area around Onondaga Lake as well as within 3.2 km (2 mi) radius of Wastebed 13 has a long history of land use and settlement during the centuries and millennia prior to European contact. An extensive archaeological record exists from as early as the Late Archaic period (4000-1500 B.C.) and continuing through the Late Woodland period (A.D. 1000-1500) in the vicinity of Onondaga Lake, with Parker (1920) noting "traces of occupation" and a number of projectile points along Ninemile Creek (Hohman 2004). The sites around the lake and the adjacent waterways include traces of occupation, campsites, hamlets or villages, burial mounds, and an earthwork (Hohman 2004). This suggests that the area around Onondaga Lake was important for the resources (e.g. potable water, edible plants, medicinal plants, wood, bark, animals, fish, etc.) found within and adjacent to the lake, as well as for the locations of villages and special use areas. Ninemile Creek is labeled as "Ostisca River (Figure 3 in Appendix VIII, p. 481). References in Morgan (1962: 471) show the Onondaga word for Ninemile Creek as *Us-te'-ka*,translated as Butternut Hickory. Consultations with the Onondaga Nation suggest that the word, Ostisca, could mean black or black mud (Anthony Gonyea and Wendy Gonyea, pers. comm., January 29, 2009).

Precontact Sensitivity Assessment

The proposed location of the slurry pipeline is situated across several different areas: along the causeway from Wastebed B, on top of and on the side of Wastebeds 1-8, and within and adjacent to Ninemile Creek. Consultation with members of the Onondaga Nation determined that all areas of the lake were used for important tasks; no specific references to the upper reaches of Ninemile Creek were discussed. The proposed slurry pipeline in the vicinity of the causeway from Wastebed B is located in an area that was either covered by water or was situated in wetlands. These wetlands were comprised of water-saturated muck soils, grasses, ferns and reed-like vegetation. As with the shoreline survey area, it is unlikely that evidence of precontact landuse would be found within these wetlands at the eastern end of the slurry pipeline. This sensitivity assessment is subject to change depending on the land modifications that have occurred through time that would have impacted the archaeological remains of these activities.

In the vicinity of Wastebeds 1-8, low lying areas would likely not contain evidence of precontact landuse; however, slightly higher elevations would be sensitive for overnight camps, camps associated with special purpose resource procurement and processing, as well as for activities that did not require an overnight camp. Evidence may be present under the fill of Wastebeds 1-8 for cultural resources associated with these activities. However, impacts are not expected to reach below the 18 m (60 ft) of fill.

The proposed slurry pipeline moves west from Wastebeds 1-8 and enters into the channelized Ninemile Creek, which flows underneath I-690. This area prior to the rechannelization of Ninemile Creek would have been located on the floodplain or in close proximity to the precontact period location of Ninemile Creek. The area that would have been outside of the former channel of Ninemile Creek may have served as a travel route and would support a sensitivity for short-term camps and activity areas associated with hunting and fishing, as well as collecting wild foods, such as bitternut hickory nuts, wood and bark. During a walkover of the project area on December 17, 2009, archaeologists noted that the area along the north side of Ninemile Creek, near the confluence of Geddes Brook, contained several feet of industrial waste visible above natural soil horizons.

Postcontact Period History

At the time of European contact by the French, Dutch, and English, the project area was part of the political, economic, and spiritual heartland of the Onondaga Nation of the Haudenosaunee (Iroquois) Confederacy. Much of the known Onondaga settlements were located to the southeast of Onondaga Lake, although between 1600-1625, the settlement of Kaneenda flourished to the south of Onondaga Lake at the mouth of Onondaga Creek (Bradley 1987).

European settlements developed slowly to the west of Onondaga Lake during the postcontact period. From the 17th century through the mid- to late-19th century, much of the area adjacent to Onondaga Lake was covered with salt marshes, which were used for the production of salt. However, these areas were less favorable locations for residential villages. The tributaries, including Ninemile Creek, as well as the bordering hills were used for a variety of purposes similar to those during the precontact period.

Much of the area just west of Onondaga Lake and along Ninemile Creek was either on low lying lands or was large lots of land, with little occupation (Figures 3-7 in Appendix VIII, pp. 481-485). Within the general vicinity of Wastebeds 1-8, the area was identified as "Geddes Marsh" in 1859, and as "Geddes Marsh and reclaimed land" in 1874 (Figure 6 in Appendix VIII, p. 484). Between 1929 and 1938, the property in the vicinity of Wastebeds 1-8 was fully covered with waste from the Solvay Process Company, and dumping continued on the property through 1943 (Thompson 2002). The area of Ninemile Creek remained unoccupied, with the creek being rechannelized in 1926.

Postcontact Sensitivity Assessment

Much of the area adjacent to Onondaga Lake and along Ninemile Creek may have been used by Native Americans (specifically the Onondaga Nation) in the 17th century and beyond for a variety of purposes, including short-term camps, special use areas, and resource procurement/processing tasks similar to those described in the precontact section. This sensitivity is subject to change depending on the land modifications that have occurred through time that would have impacted the archaeological remains of these activities, especially the rechannelization of the Ninemile Creek in the 1920s.

Potential Impacts

The proposed route of the slurry pipeline will be located on the ground surface throughout the length of the pipeline except under a short section of asphalt on top of Wastebeds 1-8 and in the vicinity of two areas that will require the pipeline to be bored underneath the surface: 1) underneath the Erie Lackawanna Railroad and State Fair Boulevard and 2) underneath the CSX Railroad (Appendix VI, p. 475). The steel casing of the pipe will have at least 1.7 m (5.5 ft) of minimum cover. The portion of the proposed pipeline underneath asphalt roadway on top of Wastebeds 1-8 will be placed approximately 1.2 to 1.5 m (4 to 5 ft) below the surface.

Proposed Archaeological Work

With the exception of the boring pits adjacent to the Erie Lackawanna Railroad/State Fair Boulevard, as well as the boring pits adjacent to the CSX Railroad, we conclude that the proposed APE for the slurry pipeline will not impact any areas with the potential for intact archaeological cultural resources. Because the Wastebeds 1-8 contain approximately 60 ft (18 m) or more of fill, the depth of impacts for the slurry pipeline will not impact any intact archaeological resources. In the vicinity of the proposed bore pits adjacent to the Erie Lackawanna Railroad and State Fair Boulevard, as well as the proposed bore pits adjacent to the CSX Railroad, we recommend Phase 1B testing for archaeological cultural resources. The Phase 1B testing would consist of either analysis of soil borings or backhoe trenches (under the supervision of a professional archaeologist) at each bore pit location. If soil borings are completed, then the Phase 1B testing would also include the excavation of a backhoe trench at any location that contains potentially culturally bearing soil horizon. If backhoe trenches are not possible, then 1 x 2 m (3.3 x 6.6 ft) units would be excavated by archaeologists at bore pit locations.

TREATMENT PLANT and EFFLUENT PIPELINE FROM WASTEBED 13

The proposed treatment plant is to be placed on the southern edge of Wastebed 13 and northern edge of Wastebed 12 (Appendix VII, p. 477). The treatment plant effluent pipeline will be constructed from the southern edge of Wastebed 13 to the leachate overflow pumping station located east of Wastebed 12 (Appendix VII, p. 477). Wastebeds 12 and 13 are located on a former terrace adjacent to Ninemile Creek at an elevation of approximately 400 to 410 ft ASL based on the 1898 USGS topographic map (Figure 8 in Appendix VIII, p. 486). Ninemile Creek rises from Otisco Lake and meanders along a northeasterly route until its confluence with Onondaga Lake. The impacts of the water treatment plant will not impact below the depth of the fill on the wastebeds, which are at least 18.6 m (55 ft) in height. The first 732 m (2400 ft) of the effluent pipeline will be placed 1.2-1.5 m (4-5 ft) below the surface on Wastebed 13 and on the eastern slope of Wastebed 13. The remaining (eastern) portion of the pipeline, covering approximately 1128 m (3700 ft), will be placed on the surface (initially) between the base of the wastebeds and the leachate overflow pumping station. However, later plans call for placing the pipeline 1.2-1.5 m (4-5 ft) below the surface. The APE for the effluent pipeline is approximately 1860 m (6100 ft) in length with a maximum width of 7.5 m (25 ft).

The 1938 soil survey (Figure 16 in Appendix VIII, p. 494) shows that much of the area in the vicinity of Wastebeds 12-15 consisted of silt and clay loams (Cicero clay loam, Fulton silt loam, Dunkirk silt loam), as well as an alluvial fan (Ps) (USDA 1938). However, the 1977 soil survey depicts the western portion of the project area as wastebeds, gravel pits, or tailing ponds (USDA 1977). The eastern portion of the APE is located along the edge of the gravel pits/tailing ponds and just to the south of an unnamed tributary of Geddes Brook. Gravel operations in the vicinity of Wastebed 13 removed soil to depths as much as 9 m (30 ft) below the surface. The wastebeds were created and used for the disposal of wastes as early as 1944 (Blasland and Bouck Engineers 1989). Dikes were constructed around the waste beds and these used natural soils as well as other fill. A-horizons (topsoils) were removed from Wastebed 13 during gravel operations and some of this topsoil was used to create the dikes. Tailing ponds were noted as being located at the location of Wastebed 12 with the current wastebed being built up by 16.8 m (55 ft) of wastes. Because Wastebeds 12 and 13 were both built up at least 16.8 m (55 ft) in height, the soil deposits above any gravel operation in Wastebed 13 or above any natural soils in Wastebed 12 date from the mid 20th century to the present.

Precontact Period History

The project area is located approximately 3.2 km (2 miles) west of Onondaga Lake, on the south side of Ninemile Creek. A late eighteenth/early nineteenth century map (Figure 3 in Appendix VIII, p. 481) labels the creek as "Ostisca River," probably a reference to Otisco Lake, from which the creek flows. References in Morgan (1962:471) show the Onondaga word for Ninemile Creek as *Us-te'-ka*, translated as Bitternut Hickory. Consultations with the Onondaga Nation suggest the word, *Ostisca,* could mean black or black mud (A. Gonyea and W. Gonyea, personal communication, January 29, 2009). Much of the area adjacent to the current wastebeds is identified in 1852 as being located in close proximity to a meandering Ninemile Creek or in the vicinity of wetlands or swamps adjacent to the creek.

A site files check conducted by the Public Archaeology Facility identified five known precontact sites recorded by Arthur C. Parker (1920:644-45) within the 3.2 km (2 mile) radius of Wastebed 13. These sites are all near the confluence with Onondaga Lake, and include camps, a village or hamlet, two mounds, and an earthworks. In addition, Parker noted "traces of occupation" and a number of projectile points along Ninemile Creek (Hohman 2004). This indicates that the area along Ninemile Creek was used during the precontact period for a variety of purposes (hunting, camps, villages, resource procurement, and ceremonial).

Precontact Sensitivity Assessment

All evidence gathered points to deep impacts in Wastebeds 13 by gravel operations during the 20th century, as well as at least 16.8 m (55 ft) of wastes placed on top of the gravel operations in Wastebed 13 and on top of potentially natural soil horizons in Wastebed 12. This greatly reduces the sensitivity of the western portion of the APE. The eastern portion of the APE is located adjacent to the gravel operations. Within a broad context, Ninemile Creek connects Otsico Lake with Onondaga Lake. This waterway probably served as a travel route, which would support a sensitivity for short-term camps and activity areas associated with hunting and fishing, as well as collecting wild foods, such as bitternut hickory nuts, wood and bark. Consultation with members of the Onondaga Nation determined that all areas of the lake

were used for important tasks; no specific references to the upper reaches of Ninemile Creek were discussed. Wetlands were identified in the region on the 1852 map (Figure 5 in Appendix VIII, p. 483), suggesting that low lying areas adjacent to the course of Ninemile Creek may have been present during the precontact period. It is unlikely that evidence of precontact landuse would be found in the wetlands. However, if higher elevated, well-drained soils were present nearby, overnight camps, camps associated with special purpose resource procurement and processing, and activities that did not require an overnight camp may be found within the undisturbed sections of the APE.

Postcontact Period History

Although few major settlements of the Onondaga bordered the lake during the postcontact period, the lake, its shores, tributaries, and bordering hills were used for a variety of purposes similar to those during the precontact period. Areas to the west of Onondaga Lake, including in the vicinity of Wastebeds 12 and 13 and the proposed effluent pipeline, may have been used for small campsites or resource processing locations.

Historic maps from the 19th and early 20th centuries identified a series of former structures in the vicinity of Wastebeds 12 and 13. By the early 20th century (Figure 15 in Appendix VIII, p. 493) at least 12 structures were present on the north/south road in the area of Wastebed 13, as well as to the south in Wastebeds 12 and 14. Most of these structures were removed in the 1920s to 1930s as the area was transformed into the Amboy Airport and later the Syracuse Municipal Airport (Figure 17 in Appendix VIII, p. 495). After World War II began, the airport turned into a flight training center. After World War II, the airport became a commercial airport, but could not compete with the larger Syracuse Hancock International Airport and closed in 1949 (Freeman 2007). By 1951, the area had been acquired by Allied Chemical and Dye Corporation and gravel pits and tailing ponds had been constructed (Freeman 2007). Beginning in the 1970s, the area of the wastebed was filled in with Solvay waste. The waste continued to be placed in this location through 1985 (Blasland and Bouck Engineers 1989 in Hohman 2010). The wastebed now contains material that is approximately 17-21 m (55-70 ft) higher than the surrounding landscape. In the eastern portion of the APE adjacent to Wastebeds 12 and 13, structures are not present on any of the historic maps.

Postcontact Sensitivity Assessment

Although historic structures and roads were identified within or in the vicinity of Wastebeds 12 and 13 in the 19th and early 20th centuries, the use of the area as an airport in the mid 20th century, the excavation of the area of Wastebed 13 for gravel pits between 1949 and 1957, the use of the area of Wastebed 12 as a tailings pond by 1957, as well as the construction of the Wastebeds 12 and 13 after 1951, has most probably removed evidence of the earlier domestic residences and roadways, especially in the vicinity of Wastebeds 12 and 13. Adjacent to the wastebeds, there remains the potential for postcontact Native American sites, depending on the modifications that have taken place in the 20th century adjacent to the current wastebeds. The lack of historic occupations in the 19th and 20th century in the area adjacent to the wastebeds suggests that there is a low sensitivity for 19th or 20th century resources.

Potential Impacts

The proposed water treatment plant will be placed on the southern edge of Wastebed 13 and the northern edge of Wastebed 12 (Appendix VII, p. 477). The impacts of the water treatment plant will not impact below the depth of the fill on the wastebeds, which are at least 18.6 m (55 ft) in height. The first 732 m (2400 ft) of the effluent pipeline will be placed 1.2-1.5 m (4-5 ft) below the surface on Wastebed 13 and on the eastern slope of Wastebed 13. The remaining (eastern) portion of the pipeline, covering approximately 1128 m (3700 ft), will be placed on the surface (initially) between the base of the wastebeds and the leachate overflow pumping station. However, later plans call for placing the pipeline 1.2-1.5 m (4-5 ft) below the surface. Following the completion of the cultural resource survey, the eastern portion of the pipeline will also be placed below the surface.

Proposed Archaeological Work

Consistent with the recommendations regarding Wastebed 13 in the approved workplan, we recommend no archaeological testing on the proposed APE within Wastebed 12 and Wastebed 13 and on the eastern slope of Wastebed 13 due to the low potential for any intact precontact or postcontact historic resources. Within the APE for the proposed effluent pipeline at the base of Wastebeds 12 and 13, a Phase 1B archaeological survey is recommended to determine if any precontact or postcontact period resources are present. Initially, the pipeline will be placed on the ground surface and the APE for this will not require an archaeological survey. However, later in time, the pipeline will be placed below surface. Prior to the placement of the pipeline beneath the surface, subsurface testing will occur. The subsurface testing will require 60-90 STPs at 7.5 to 15 m (25 to 50 ft) intervals.

SUMMARY

This document represents an addendum to the existing work plan (Hohman 2010) for the Phase 1B survey of the selected upland and shoreline areas of potential effect (APE) for the Onondaga Lake Project, which was approved by the NYSDEC on March 3, 2010. The addendum workplan addresses three new areas. These new areas and our recommendations include:

1) **Shoreline Survey of Wastebeds 1-8.** Much of the northern shoreline area will be tested per the original workplan (Hohman 2010). **Recommendation**: We recommend no further archaeological testing on the eastern shoreline for the shoreline survey and on the northern shore of the northeastern corner of Wastebeds 1-8. On the eastern edge of the northeastern corner of Wastebeds 1-8 (between SB237-SB243), we recommend a series of 70-90 STPS at 7.5 m (25 ft) intervals along the route of the proposed fascines and crib wall. It is estimated that this testing will take no more than one week to complete.

2) **Slurry Pipeline**. **Recommendation**: Phase 1B archaeological survey is proposed at the bore pits located adjacent to Erie Lackawanna Railroad/State Fair Boulevard, as well as the boring pits adjacent to the CSX Railroad; the Phase 1B testing would consist of either analysis of soil borings or backhoe trenches (under the supervision of a professional archaeologist) at each bore pit location. If soil borings are completed, then the Phase 1B testing would also include the excavation of a backhoe trench at any location that contains potentially culturally bearing soil horizon. If backhoe trenches are not possible, then 1 x 2 m (3.3 x 6.6 ft) units would be excavated by archaeologists at bore pit locations. The remainder of the slurry pipeline will be placed above the surface or will be located in fill and will not require a Phase 1B archaeological survey. The backhoe trenches at the bore pit locations will take no more than several days to complete.

3) **Water Treatment Plant and Effluent Pipeline**. **Recommendation**: Phase 1B testing limited to areas where the pipeline will be placed below ground surface at the base of Wastebeds 12 and 13. The subsurface testing will require 60-90 STPs at 7.5 to 15 m (25 to 50 ft) intervals and will take no more than one week to complete. No testing is recommended for the APE within Wastebeds 12 and 13 and on its eastern slope due to depth of industrial waste.

These recommendations apply only to archaeological and architectural cultural resources and do not address properties of religious and cultural significance.

REFERENCES (all others found in Hohman 2010 - Phase 1B Archaeological Work Plan)

Freeman, Paul
2007 *Abandoned and Little-Known Airfields: Central New York.*

Williams, William
1827 *The Tourist's Map of the State of New York.*

Kubiak, Brad and Ryan Davis - personal communication, April 2010