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LOUDOUN COUNTY
DEPARTMENT OF PLANNING

Archaeological Summary Report
Potomac interceptor Long Term Odor Abatement Program

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INTRODUCTION

The District of Columbia Water and Sewer Authority (DC WASA) proposes to construct six odor abatement facilities along the length of the Potomac Interceptor, a gravity sewer system that transports wastewater through several metropolitan Washington suburban jurisdictions to the Blue Plains Advanced Wastewater Treatment Plant in the District of Columbia. One of the odor abatement facilities, referred to as "Site 46" in this assessment, is located within Loudon County in Algonkian Regional Park northeast of the Potomack Lakes Sportsplex.

The odor abatement facility that DC WASA proposes at Site 46 consists of a rectangular building, approximately 57 feet by 27 feet, that will resemble a stone barn. The proposed building will contain a vacuum like vent to extract the odorous air from the pipe and force it through carbon that strips out the odors.

Straughan Environmental Services, Inc. (SES) undertook the assessment and survey under the provisions of a contract for environmental services and documentation with Black and Veatch Corporation for DC WASA. Field investigations were conducted on October 7, 2009 by principal investigator James G. Gibb.

PROJECT LOCATION AND EXISTING ENVIRONMENT

The study area is situated in a forested corridor in Algonkian Regional Park with the Potomack Lakes Sportsplex to the southwest and the Algonkian Golf Course to the north. Land use within the study area includes forested land, open space, gravel trails, and utility right-of-way.

The study area is located within the Piedmont physiographic province and is within the Middle Potomac-Catoctin River basin, part of the greater Chesapeake Bay watershed. The site elevation is approximately 200 feet above sea level. The site is approximately 365 feet west of an unnamed tributary of Sugarland Run and 2,500 feet south of the Potomac River (see Figure 1).

The Area of Potential Effects (APE) of Site 46 is 0.25 acres in size, and contains the physical limits of disturbance for the project (see Figure 2). Site 46 slopes very gently down to the north. Recent growth covers what likely was once part of a cultivated field. Current plant species on the site include: eastern red cedar (*Juniperus virginiana*), red maple (*Acer rubrum*), northern red oak (*Quercus rubra*), willow oak, (*Quercus phellos*), American beech (*Fagus grandifolia*), pawpaw (*Asimina triloba*), Virginia pine (*Pinus virginiana*), Japanese honeysuckle (*Lonicera japonica*) and various grasses and rushes.

The Soil Survey Geographic (SSURGO) Database for Loudoun County, Virginia (USDA-NRCS, 2008) indicates that two soil series occur within the study area.

- Kinkora-Delanco complex (99A)
 - Kinkora – very deep, poorly drained soils on nearly level to gently sloping stream terraces within the northern Piedmont Plateau and the Blue Ridge Mountains.
 - Delanco – very deep, moderately well drained and somewhat poorly drained soils on terraces, in the heads of drainageways, and on nearly level concave colluvial footslopes.

The ground surface of Site 46 is highly eroded. Stormwater, largely from the south, has washed the surface, removing sediment and exposing tree roots. Deforestation to the south likely altered drainage patterns and led to the loss of sediment. The area to the south has since reforested, diminishing surface flow, but the damage has been done.



Figure 4. Site 46, looking southwest.



Figure 5. Site 46, washed surface and exposed tree roots.

RESEARCH DESIGN AND METHODOLOGY

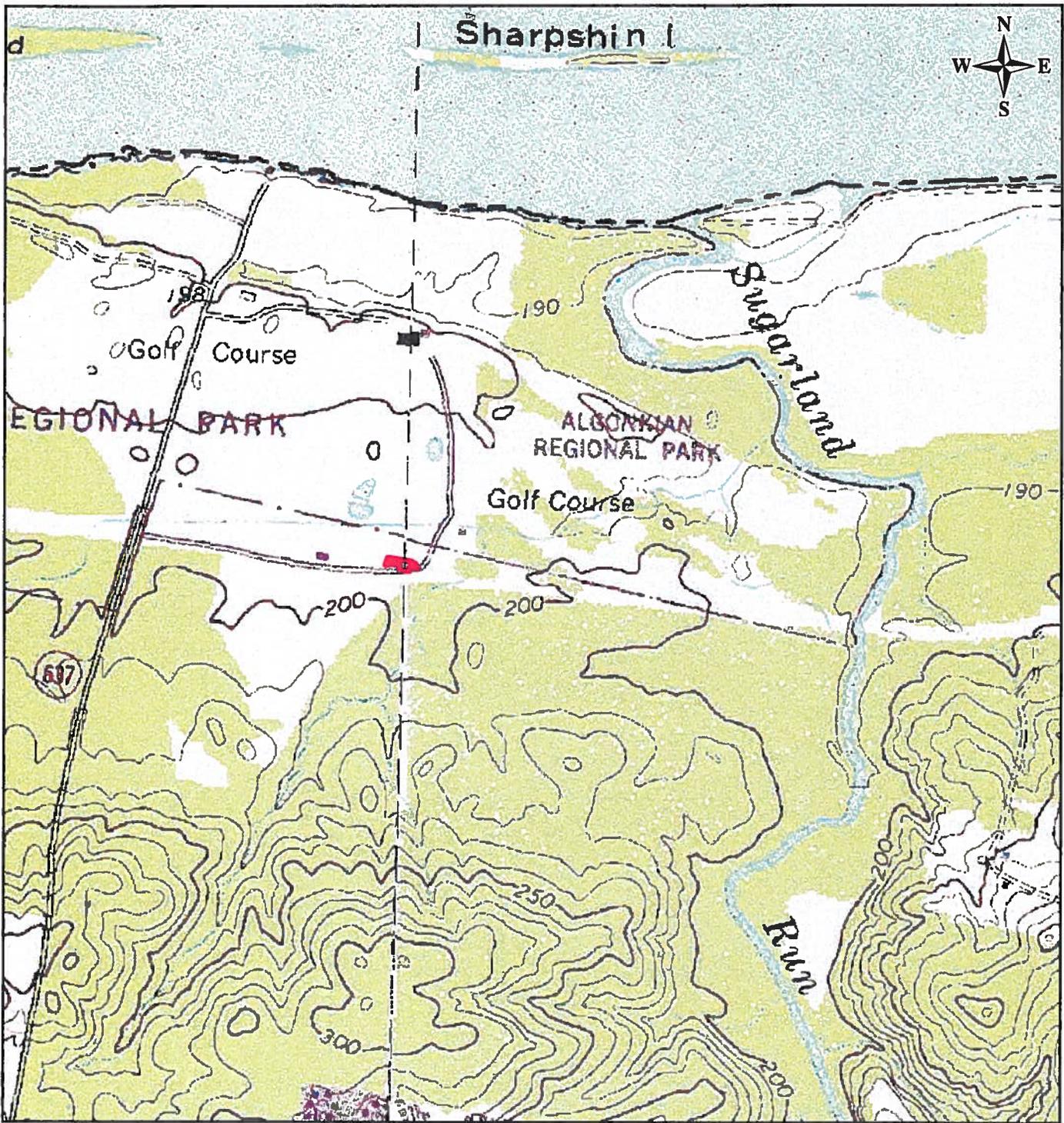
A search of the Virginia Department of Historic Resources (VDHR) archives indicates that no archeological sites have been identified within the study area, and the area has not been previously surveyed (Figure 3). Historic maps (including Madison's 1808 *Map of Virginia*, Yardley Taylor's 1853 *Map of Loudon County*, A.S Barrows 1863 *Map of Fauquier & Loudon Counties*, the 1908 USGS 15' topographic quadrangle of *Seneca, MD* and mid-to late-20th century aerial photographs) indicate that the project area has historically only been sparsely developed, and there do not appear to have been any structures historically in the vicinity of the project area.

Given the loss of soil and the narrowness of the area of potential effects, SES decided that a 50 foot interval between standard shovel tests (1.5 ft diameter, 0.3 ft or more into apparent sterile sediment) on a single transect at, or near, the centerline of the area of potential effects would be adequate to determine the presence of cultural resources and the need for further investigation. The transect was extended for approximately 30 ft beyond that area to check an area that seemed less eroded.

At Site 46, six shovel test pits were dug (see Figure 6). Stratum 1 ranged from 0.3 ft to 1.0 ft in thickness. The soils in Stratum 1 were 10YR 4/3 silt loam and silty clay; 10YR 5/4 and 7.5YR 4/6 silty clay loam; and 5YR 4/3 clay loam. Stratum 2 ranged from 1.0 ft to 1.4 ft below grade. The soils were: 10YR 5/3 silty clay loam; 7.5YR 4/4 silty clay; and 5YR 7/1 and 10YR 5/4 clay. Stratum 3 appeared in STPs 2 and 3 only and went from 1.3 ft to 1.4 ft below grade. The soil was 10YR 5/6 clay and 7.5YR 7/3 silty clay. In all six of the STPs the soil of Stratum 2 and 3 were redox, suggesting poor drainage. No cultural material was found in any of the shovel tests.

Table 1. Shovel test and soils inventory.

Site	STP	Stratum	Depth	Soil Color	Soil Texture
46	1	1	1	10YR4/3	Silt loam
46	1	2	1.4	10YR5/4	Silt loam redox
46	2	1	0.7	10YR5/4	Silty clay loam
46	2	2	1.05	10YR5/3	Silty clay loam
46	2	3	1.3	10YR5/6	Clay redox
46	3	1	0.3	7.5YR4/6	Silty clay loam
46	3	2	1	7.5YR4/4	Silty clay redox
46	3	3	1.4	7.5YR7/3	Silty clay redox
46	4	1	1	5YR4/3	Clayey loam
46	4	2	1.4	5YR7/1	Clay redox
46	5	1	1	5YR4/3	Clayey loam
46	5	2	1.4	5YR7/1	Clay redox
46	6	1	0.5	10YR4/3	Silty clay
46	6	2	1.15	10YR5/4	Clay redox



**Figure 1-1:
Topographical Map**

Potomac Interceptor Long Term
Odor Abatement Program
Site 46

Loudoun County, Virginia



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Legend:  Study Area

Scale: 1 inch = 1,000 feet

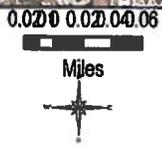
0 500 1,000 2,000
Feet

Source: USDA, NRCS. 2002. *Digital Raster Graphic Mosaic of Loudoun County, Virginia*. Fort Worth, TX.



Data Sources: VDHR 2008, National Geographic 2003, VGIN 2002

DC WASA Site 46
 Potomac Interceptor Long Term Odor Abatement Program
 Loudon County, VA
 Sterling 7.5' USGS Quadrangle
 Prepared by SES at Virginia Dept. of Historic Resources
 September 24, 2009



Legend

- architectural resources
- archaeological resources

Figure 3. Sites Identified in VDHR GIS files.