

2022 RESTORATION MONITORING SUMMARY REPORT

Bloody Brook
Onondaga County, New York

Prepared for:

Lockheed Martin Corporation
Syracuse, New York

Prepared by:

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September 2022

**2022 RESTORATION MONITORING SUMMARY REPORT
BLOODY BROOK
ONONDAGA COUNTY, NEW YORK**

CERTIFICATION STATEMENT

I, Nickcole M. Evans, certify that I am currently a NYS registered professional engineer as defined in 6 NYCRR Part 375 and that this *2022 Restoration Monitoring Summary Report* was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-10) and that all activities were performed in full accordance with the DER-approved work plan and any DER-approved modifications.



Nickcole M. Evans, P.E.
License Number 085978

In accordance with New York State Education Law, it is a violation for any person, unless he is acting under the direction of a licensed professional engineer, to alter this Work Plan in any way.

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1.0 INTRODUCTION

This 2022 *Restoration Monitoring Summary Report* (RMSR) has been prepared to summarize the results of the monitoring activities completed in June 2022 including an evaluation of the success of the vegetation planting for three remaining areas, listed below, and an inspection for areas of erosion at the Bloody Brook site. The remediation, including construction and restoration activities completed from June 2014 through July 2017, was conducted in accordance with a Voluntary Cleanup Agreement (VCA) between Lockheed Martin Corporation (Lockheed Martin) and New York State Department of Environmental Conservation (NYSDEC) (Index #: D7-0001-01-09, effective July 20, 2002). The remediation included the West Branch of Bloody Brook (WBBB) and Bloody Brook from below the confluence of the West and Middle Branches of Bloody Brook and adjacent property located between the New York State Thruway (Thruway) and Onondaga Lake Parkway (approximately 5,000 foot long section of stream) in the Town of Salina and a portion of the Village of Liverpool, Onondaga County, New York, as shown on Figure 1.¹ The NYSDEC “Release and Covenant Not to Sue” was received by Lockheed Martin for the Bloody Brook site on March 21, 2018.

In compliance with the NYSDEC approved February 2018 *Site Management Plan* (SMP) for Bloody Brook, updated in July 2022 (pending NYSDEC approval) (AECOM, 2018a), a final annual vegetation restoration inspection was completed at the following locations to ensure the vegetation is growing as intended:

- Apartment complex area including the stream side banks and bottom
- Portion of the commercial property outside of the stream side banks and located between the Old Liverpool Road culvert and the railroad tracks
- Construction access area at Onondaga Lake Parkway

Additionally, annual erosion inspections will continue to be completed since there is contamination remaining below areas of the soil cover. These inspections are to ensure no erosion of the channel and banks is occurring. The annual inspections are to be completed in accordance with the March 2014 Decision Document (Decision Document) prepared by NYSDEC (NYSDEC, 2014), property-specific owner restoration agreements, and the SMP.

Consistent with previous monitoring events, activities completed this year and discussed herein were completed in accordance with Appendix J (*Restoration Monitoring Plan*) of the SMP and included the following:

- Inspection of the brook channel side banks and channel bottom for signs of erosion; and

¹ The term “site” in the VCA is defined as: a portion of the banks, surface waters and sediments of the West and Middle Branches of Bloody Brook located in the Town of Salina with a portion of the site located in the Village of Liverpool and commences downstream of Interstate 90, the New York State Thruway, and extends generally southward past the confluence of the West Branch and the Middle Branch of Bloody Brook creating Bloody Brook, and ends on the upstream side of Onondaga Lake Parkway. After examining data developed during remedial investigation work in the Middle Branch, NYSDEC determined that no further action was required for that branch of Bloody Brook. For this reason, the “site” in this document relates only to those areas within the VCA site where the remedial program has been implemented.

- Inspection of vegetation planted during restoration activities on the remaining apartment complex and commercial properties listed above.

Results for each of these inspections from 2022 are presented and discussed in Section 3 of this report.

1.1 SITE DESCRIPTION

The Bloody Brook site was broken into four distinct areas based on land use and characteristics as shown on Figure 2 and described below.

- **Wooded Area** – This portion of the site extends from the Thruway south (downstream) approximately 1,050 feet. This undeveloped area is irregularly shaped and relatively wide (i.e., greater than 150 feet) and includes three wetlands. The wooded area is entirely within the Onondaga County Bloody Brook Drainage District (Drainage District) easement and is owned by the Town of Salina. The Drainage District easement provides Onondaga County personnel permanent access for various projects to improve and maintain drainage. Storm water drainage from the surrounding development enters the WBBB from the west via a drainage channel at the southern end of the wooded area.
- **Residential Area** – The residential area surrounds the wooded area commencing at the Thruway and extending downstream of the wooded area with residential properties abutting the Drainage District easement along the WBBB to the downstream side of Floradale Road.
- **Apartment Complex Area** – The apartment complex area is located on Pearl Street and Town Gardens Drive between the residential properties along Floradale Road and the commercial properties along Old Liverpool Road.
- **Commercial Area** – The commercial area extends from commercial properties located along Old Liverpool Road to Onondaga Lake Parkway.

2.0 RESTORATION MONITORING ACTIVITIES

Restoration monitoring for the apartment complex and commercial areas was completed on June 29, 2022. The monitoring included an erosion inspection completed by a qualified environmental professional. Sections 2.1 and 2.2 below discuss these activities, respectively, and Section 3 summarizes the results. A summary and recommendations are provided in Section 4, and references are provided in Section 5.

2.1 APARTMENT COMPLEX AND COMMERCIAL AREAS

All apartment complex and commercial plantings included in this annual inspection were visually inspected to ensure they are successfully becoming established. Results for the inspections completed on the apartment complex and commercial properties will be discussed, as needed, with the property owner.

2.2 EROSION MONITORING

In accordance with the Decision Document and the SMP, the site was inspected for ponding on the side banks and for erosion of the brook bottom and side banks. Results from this inspection indicated that only minor adjustments were needed that could be made quickly by hand. The soil cover continues to function as designed. The completed field monitoring form for the 2022 site inspection is included in Attachment A.

3.0 RESTORATION MONITORING SUMMARY

Results for the 2022 monitoring activities discussed above are provided in the following sections. Section 3.1 discusses results for the vegetation monitoring for the apartment complex and commercial properties, and Section 3.2 discusses the results for the erosion monitoring. Recommendations for each of the areas, as needed, are provided in Section 4.

3.1 APARTMENT COMPLEX AND COMMERCIAL AREAS

All apartment complex and commercial plantings included in this annual inspection were visually inspected to ensure they are successfully establishing in accordance with the property-specific access/restoration agreements between Lockheed Martin and the property owner. Results for the inspections completed on apartment complex and commercial properties will be discussed, as needed, with the property owner.

3.2 EROSION INSPECTION

In accordance with the Decision Document and the SMP, the site was inspected for ponding on the side banks and for erosion of the brook bottom and side banks. The completed field form from the June 2022 erosion inspection is provided in Attachment A and indicated that the stream bottom and side banks are intact, and that the soil cover continues to function as designed.

4.0 SUMMARY AND RECOMMENDATIONS

4.1 APARTMENT COMPLEX AND COMMERCIAL AREAS

No major issues were identified on the private properties during the monitoring event. Results and recommendations for these inspections completed on private properties will be discussed as needed with the property owner. The first of the annual inspections for the areas listed below was completed in 2018. Therefore, it is anticipated that 2022 will be the final year of monitoring in these areas.

- Apartment complex area including the stream side banks and bottom
- Portion of the commercial property outside of the stream side banks and located between the Old Liverpool Road culvert and the railroad tracks
- Construction access area at Onondaga Lake Parkway

4.2 EROSION

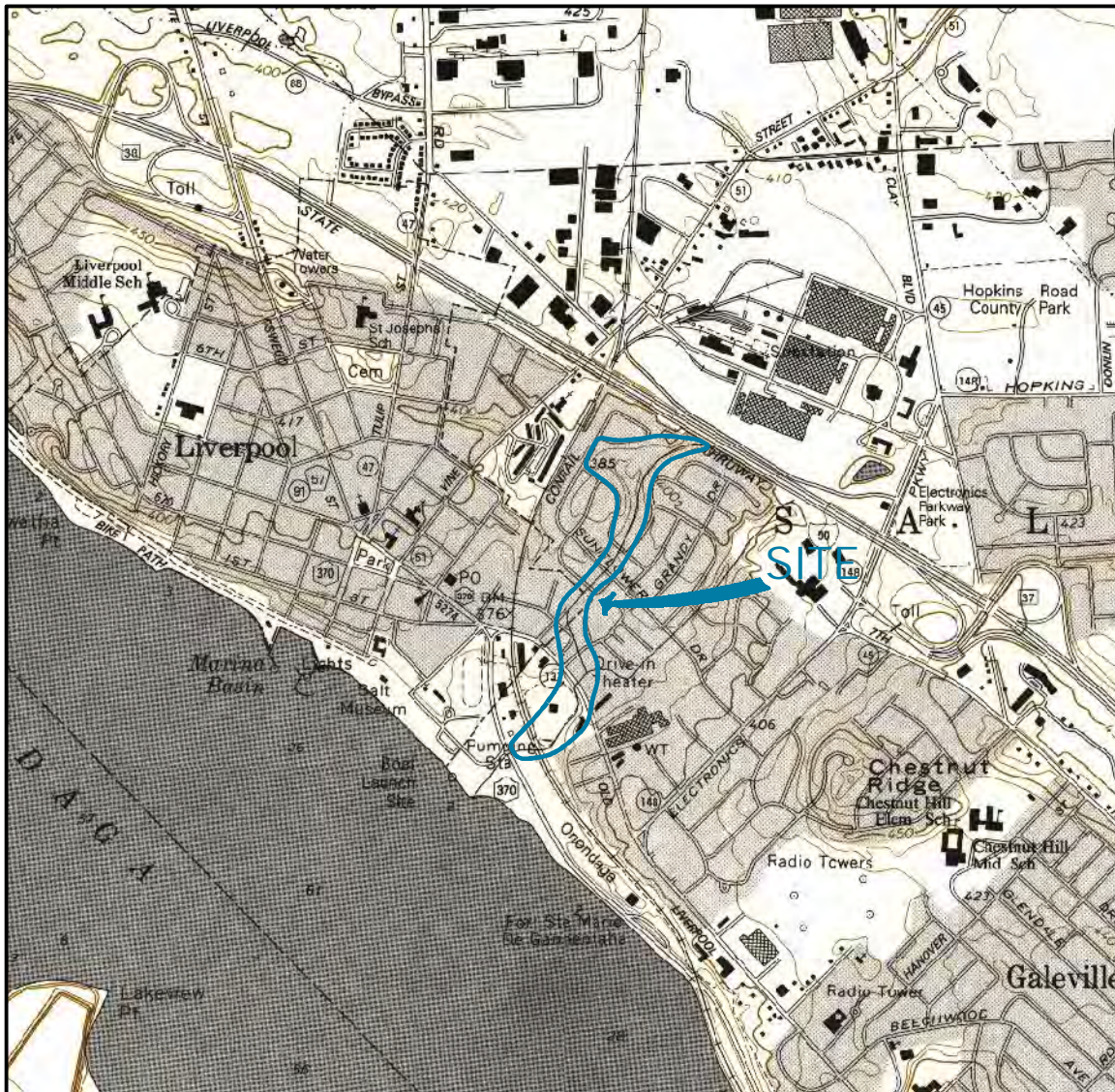
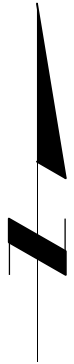
No areas of concern along the brook channel were noted during the 2022 site inspection. The stream bottom and side banks were intact and showed little signs of damage during the June 2022 erosion inspection. No changes to the annual site-wide inspection for erosion of the soil cover are currently proposed. Per the SMP, annual site-wide inspections will be completed.

5.0 REFERENCES

AECOM. 2018a. *Bloody Brook Site Management Plan*. Updated 2022, July, Pending NYSDEC approval.

NYSDEC. 2014 *Decision Document*, March.

FIGURES



APPROXIMATE SCALE

REFERENCE:

1. NYSDOT 7.5 MIN TOPOGRAPHIC MAP OF SYRACUSE WEST, QUADRANGLE 1990, SCALE: 1" = 2000'.

AECOM

LOCKHEED MARTIN CORPORATION

SITE LOCATION MAP

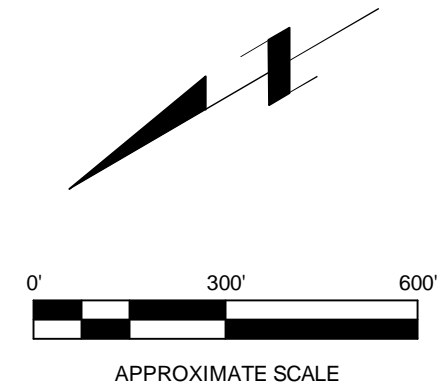
BLOODY BROOK
ONONDAGA COUNTY, NEW YORK

FILE NAME:	DRN	PROJECT NO.	DATE	FIGURE NO.
A1FIG1_2020.dwg	CLS	60624670	9 / 2020	1



Legend

- CURRENT BROOK ALIGNMENT
- WOODED AREA
- RESIDENTIAL AREA
- APARTMENT COMPLEX AREA
- COMMERCIAL-LIGHT INDUSTRIAL AREA
- COMMERCIAL AREAS EXCLUDED FROM MAY 2017 MONITORING



AECOM

LOCKHEED MARTIN CORPORATION
SITE AREA MAP

BLOODY BROOK
ONONDAGA COUNTY, NEW YORK

FILE NAME:	DRN	PROJECT NO.	DATE	FIGURE NO.
SiteAreaMap FIG2.dwg	CLS	60624670	9 / 2020	2

ATTACHMENT A
Site Inspection Form

**Bloody Brook
Liverpool, NY
Site-Wide Inspection Form**

Engineering Control: Soil Cover

Inspection Date: 6/29/22

Item	Yes	No	N/A	Comments
Was ponding observed in any areas of the soil cover? If so, identify the stream mile marker in the comment section of this form.		<input checked="" type="checkbox"/>		
Were areas of erosion observed in the soil cover or along the streambed? If so, identify the stream mile marker in the comment section of this form.	<input checked="" type="checkbox"/>			50m North of Weir 3 - West Bank * North of Sunflower Dr. - West Bank * South of Floradale Dr @ abutment on both sides
Based on the above items, does the engineering control continue to perform as designed?	<input checked="" type="checkbox"/>			
Were the weirs and piezometers within the wetland areas inspected and appear to be in good condition, functioning as designed?	<input checked="" type="checkbox"/>			
Were the permanent plot, transect, and photo locations within the wetlands clearly marked?	<input checked="" type="checkbox"/>			
Has there been any apparent intrusive activity, excavation, or construction at the site? If so, were the activities performed in accordance with the SMP?	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
Were vegetation and wetland monitoring completed during this site inspection? If so, were the vegetation inspection logs completed?		<input checked="" type="checkbox"/>		

Note: Upon completion of the form, any non-conforming items warranting corrective action should be identified here within.

Name of Inspector:

Robert Montione

Inspector's Company:

AECOM

Signature of Inspector:

[Signature]

Date:

7-29-22

* These consist of small scale movement of rip rap which can be quickly corrected by hand. These will be addressed on the next site visit.