



DEPARTMENT OF THE ARMY  
US ARMY INSTALLATION MANAGEMENT COMMAND  
US ARMY ENVIRONMENTAL COMMAND  
2450 CONNELL ROAD  
JOINT BASE SAN ANTONIO FORT SAM HOUSTON, TX 78234-7664

IMAE-M

January 21, 2020

SUBJECT: Documentation of Annual Maintenance Activities 2019  
Closed, Covered and Capped Sites  
Badger Army Ammunition Plant

Mr. Gregory A. Rudloff, P.G.  
Corrective Action Section  
Waste Management Branch  
Land and Chemicals Division  
USEPA - Region 5  
77 West Jackson Blvd. (LU-9J)  
Chicago, IL 60604-3590

Mr. Jason Lowery  
Wisconsin Department of Natural Resources  
GEF2 Central Office  
PO Box 7921  
Madison, WI 53707-7921

Dear Mr. Rudloff and Mr. Lowery:

This letter report summarizes the 2019 activities associated with maintenance of the closed sites at the Badger Army Ammunition Plant (BAAP) that have been covered or capped. The project sites include:

- Landfill #5 (WDNR License #2813)
- Propellant Burning Ground (PBG) Racetrack Area Including Hazardous Waste Thermal Treatment Unit (HWTTU)
- Landfill #1
- 1949 Pit Cap and PBG Waste Pits (Phases 1 and 2)
- Deterrent Burning Ground (DBG) Area & Landfill #3

Each project site has been maintained following the requirements set forth in the respective approved closure documents. This report provides a brief history of each site followed by a discussion of the maintenance activities performed in 2019. The site history has been condensed for ease of review, since the history of each site has been well documented in previous submittals.

A site inspection form has been prepared for each of the project sites to assess the condition of the cap/cover at the time of the inspection. Maintenance activities are discussed in the narrative portion of this report. It should be noted that the Wisconsin Department of Natural Resources (WDNR) no longer requires annual monitoring of Landfill #2, Landfill #4, and Oleum Landfill cap/covers.

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### **LANDFILL #5 (WDNR LICENSE #2813)**

Landfill #5 (WDNR License #2813), previously known as the Existing Landfill, was a solid waste disposal facility used between 1979 and 1988. In 1988, the landfill was closed with a clay barrier cap which received regulatory approval by the WDNR on September 20, 1989.

The cap is inspected annually for erosion, settlement, undesirable vegetation growth, and other deficiencies. Maintenance includes annual mowing of the vegetation and correction of cap deficiencies to maintain proper grade.

The cap was mowed and vegetation around the two gas probes was cleared during September 2019 and the annual inspection was performed on October 8, 2019. The site was found to be in good condition and no erosion of the cap was identified during the inspection. Settlement of the cap was identified on the west and east sides and in the center of Landfill #5. Settlement on the west side of Landfill #5 was more pronounced. These areas will continue to be monitored for drainage and settlement. A site identification sign on the north side of the cover was replaced. The completed inspection form is attached.

### **PBG RACETRACK AREA INCLUDING HWTTU**

The PBG Racetrack area was used for open burning of propellant and explosive-contaminated wastes and includes the area known as the HWTTU. In 1995, three quarters of the Racetrack area was closed as part of the final closure for the HWTTU, which included the installation of a soil cover system. Closure of this portion of the Racetrack/HWTTU in the PBG area was approved by the WDNR on September 4, 1996. Contaminated soil was removed from the remaining portion of the Racetrack area in 1997 and the WDNR letter dated December 2, 1997 indicated that no additional remedial actions were required for this area.

The cover is inspected annually for erosion, settlement, undesirable vegetation growth, and other deficiencies. Maintenance includes annual mowing of the vegetation and correction of cover deficiencies to maintain proper grade.

The cover was mowed during September 2019 and the annual inspection was performed on October 23, 2019. A site identification sign at the west side of the cover was reinstalled. The site access road was cleared of vegetation. No erosion or settlement of the cover was identified during the inspection. The completed inspection form is attached.

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### **LANDFILL #1**

Landfill #1 was used as a demolition debris disposal facility between 1942 and 1959. The facility was closed with clay and geomembrane barrier cap in 1997. The Final Construction Report for the Landfill #1 cap, which included the long-term care requirements, was submitted to the WDNR on January 29, 1998. Regulatory approval of the Landfill #1 cap was received in a Liability, Clarification and Current Environmental Conditions letter report dated August 27, 2014.

The cap is inspected annually for erosion, settlement, undesirable vegetation growth and other deficiencies. The cap drainage system cleanouts and outlets, drainage culvert under the site access road, gas vents, site identification signs, and access roads are also inspected annually. Maintenance includes annual mowing of the vegetation and correction of cap deficiencies to maintain proper grade and prevent ponding of storm water.

The cap was mowed during September 2019 and the annual inspection was performed on October 23, 2019. No erosion or settlement of the cap was identified during the inspection. The completed inspection form is attached.

### **1949 PIT CAP and PBG WASTE PITS (PHASES 1 and 2)**

The 1949 Pit and PBG Waste Pits consisted of four excavated areas that were used for open burning and debris disposal from 1944 to 1962. Metals contained in the backfill soils and buried debris in the 1949 Pit prompted the installation of a clay and geomembrane barrier cap in 1998. The Cap Construction Report for Phase 1 of the 1949 Pit Closure was approved by the WDNR on March 8, 1999.

Construction of Phase 2 of the 1949 Pit Cap, which covers the three PBG Waste Pits, was completed in November 2008. Consistent with Phase 1, the cap consisted of clay and geomembrane barrier components. The Construction Documentation Report for Phase 2 of the PBG was reviewed by the WDNR. According to their letter dated March 25, 2009, the cap is subject to a performance standard, therefore formal approval would not be given; however, the cap was constructed according to plan and no further construction activities were necessary.

The cap is inspected annually for erosion, settlement, undesirable vegetation growth, and other deficiencies. The cap drainage system cleanouts and outlets, drainage culverts under the site access roads, gas vents, perimeter barbed wire fence and gates, site identification signs, and access roads are also inspected annually. Maintenance includes annual mowing of the vegetation and correction of cap deficiencies to maintain proper grade and prevent ponding of storm water.

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The cap was mowed during September 2019 and the annual inspection was performed on October 28, 2019. Damaged or deteriorated fence posts were repaired or replaced. No erosion or settlement of the cap was identified during the inspection. The completed inspection form is attached.

### **DBG AREA / LANDFILL #3**

The DBG is an inactive site of seven acres that is also referred to as Landfill #3. Approximately four acres of this area was used as a borrow pit and a fly ash disposal site from the 1940s through the 1970s. The remaining three acres consisted of three open burn pits that were used for the open burning of deterrent and other plant waste. In 2003, a geosynthetic clay liner and geomembrane barrier cap was constructed over the entire seven-acre site.

The cap is inspected annually for erosion, settlement, undesirable vegetation growth, and other deficiencies. The cap drainage system outlets, site identification signs, access roads, perimeter barbed wire fence and gates are also inspected annually. Maintenance includes annual mowing of the vegetation and correction of cap deficiencies to maintain proper grade and prevent ponding of storm water.

The cap was mowed during September 2019 and the annual inspection was performed on October 8, 2019. Damaged or deteriorated fence posts and barbed wire were repaired or replaced. A site identification sign on the east side of the cap was replaced. Two outlet drainage pipe covers were also repaired. No erosion or settlement of the cap was identified during the inspection; however, a soft area was identified on the east side of the cap. This area will be monitored for drainage and settlement. The completed inspection form is attached.

Overall, the project sites are in good condition. During the annual inspections, minor deficiencies were identified, and the necessary repairs were completed.

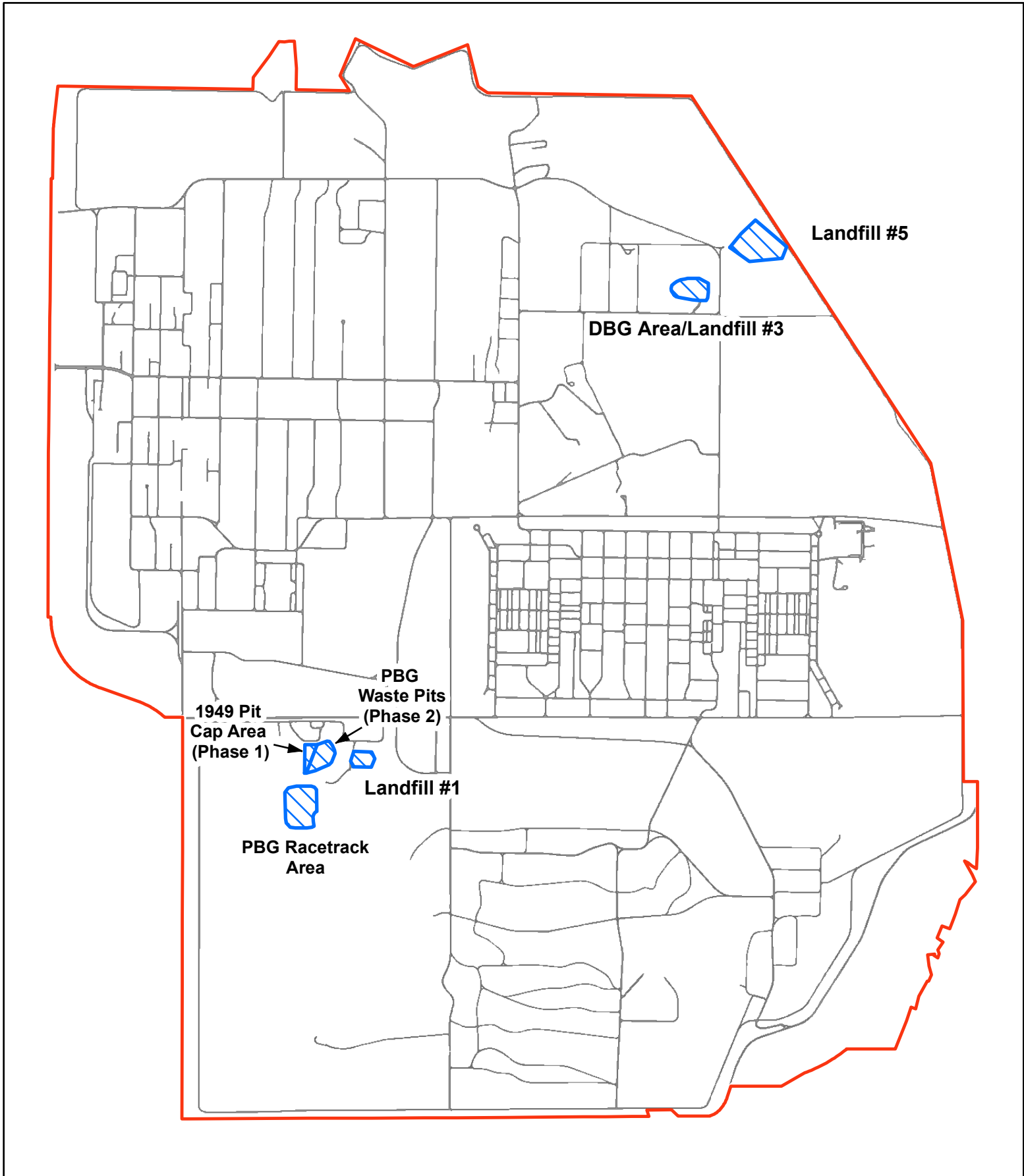
Please do not hesitate to contact me at 210-466-1351 if you have any questions.

Sincerely,




Bryan P. Lynch  
Commander's Representative

Attachments

Copy furn: Steven Martin, Wisconsin Department of Natural Resources  
SpecPro Professional Services, LLC

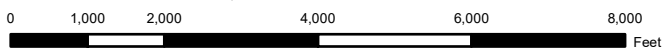


**Legend**

-  Cap & Cover Site
-  Road
-  BAAP Boundary

**Cap & Cover Sites  
Badger Army Ammunition Plant**

Map Scale 1:30,000 or 1" = 2,500'





**ANNUAL CAP & COVER INSPECTION FORM  
 BADGER ARMY AMMUNITION PLANT  
 PBG RACETRACK AREA INCLUDING HWTTU**

**Date:** 10/23/19  
**Inspector:** B. Jacobs

**Weather:** Mostly Sunny  
**Ground Surface Conditions** Dry

**Inspection Checklist**

<b>Component</b>	<b>Comments</b>
<b>Cap and Vegetation</b>	Cover has been mowed and in good condition
<b>Drainage Ditches</b>	Good condition
<b>Access Road</b>	Cleared access road of vegetation
<b>Site ID Signs</b>	Reinstalled sign on west side
<b>General Housekeeping</b>	Removed miscellaneous debris around entry point





**ANNUAL CAP & COVER INSPECTION FORM  
BADGER ARMY AMMUNITION PLANT  
1949 PIT CAP/PBG (Phases 1 and 2)**

**Date:** 10/28/19  
**Inspector:** B. Jacobs

**Weather:** Cloudy  
**Ground Surface Conditions** Dry

**Inspection Checklist**

<b>Component</b>	<b>Comments</b>
<b>Cap and Vegetation</b>	Cap has been mowed and in good condition
<b>Toe Drain Cleanouts</b>	Good condition
<b>Drainage Ditches</b>	Good condition
<b>Drainage Pipes</b>	Trimmed and clear of vegetation
<b>Gas Vents</b>	Good condition
<b>Access Roads</b>	Good condition
<b>Road Culvert</b>	Trimmed and clear of vegetation
<b>Gate and Fencing</b>	Minor fence repair completed including fence post replacement
<b>Site ID Signs</b>	Good condition
<b>General Housekeeping</b>	Good condition

**ANNUAL CAP & COVER INSPECTION FORM  
BADGER ARMY AMMUNITION PLANT  
LANDFILL #3/DBG AREA**

**Date:** 10/8/19  
**Inspector:** B. Jacobs

**Weather:** Clear  
**Ground Surface Conditions** Damp

**Inspection Checklist**

<b>Component</b>	<b>Comments</b>
<b>Cap and Vegetation</b>	Cap has been mowed and in good condition; see Note 1
<b>Drainage Ditches</b>	Good condition
<b>Drainage Pipes</b>	Trimmed and clear of vegetation; repaired two outlet pipe covers
<b>Access Roads</b>	Good condition
<b>Gates and Fencing</b>	Minor fence repair completed including fence post replacement and barbed wire repair
<b>Site ID Signs</b>	Replaced missing sign on east side
<b>General Housekeeping</b>	Good condition

**Notes:**

1. Soft area was identified on east side; monitoring of this area will continue.