

DEPARTMENT OF THE ARMY
BALTIMORE DISTRICT, CORPS OF ENGINEERS
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BALTIMORE, MD 21201

CENAB-HM-EI

30 June 2020

MEMORANDUM FOR RECORD

SUBJECT: Summary of Findings, Magnetometer-Assisted Survey of Sand Creek conducted on 7–13 June 2020 as related to the Time Critical Removal Action for Open Demolition Area #2 at Camp Ravenna Joint Military Training Center, Newton Falls, OH

1) References.

- a) US Army Corps of Engineers Baltimore District (CENAB), Final Action Memorandum, Time-Critical Removal Action (TCRA), RVAAP-004-R-01 Open Demolition Area #2, Former Ravenna Army Ammunition Plant, Ravenna, Ohio, 30 October 2015.
- b) Final Work Plan, Time Critical Removal Action (TCRA), RVAAP-004-R-01 Open Demolition Area #2 Former Ravenna Army Ammunition Plant, Revision 1. March 18, 2016.

2) Purpose.

- a) The purpose of this Memorandum for Record (MFR) is to document the results of the Magnetometer-Assisted Survey of Sand Creek conducted by USACE Ordnance and Explosive Safety Specialist (OESS) personnel at Camp Ravenna on 7–13 June 2020.
- b) The purpose of the creek walk was to assess the potential for Munitions and Explosives of Concern (MEC) and Material Potentially Presenting an Explosive Hazard (MPPEH) migration from the RVAAP-004-R-01 Open Demolition Area #2 Munitions Response Site (MRS), and the potential for migration of MEC/MPPEH off the installation at creek exit points during the TCRA.

3) Background.

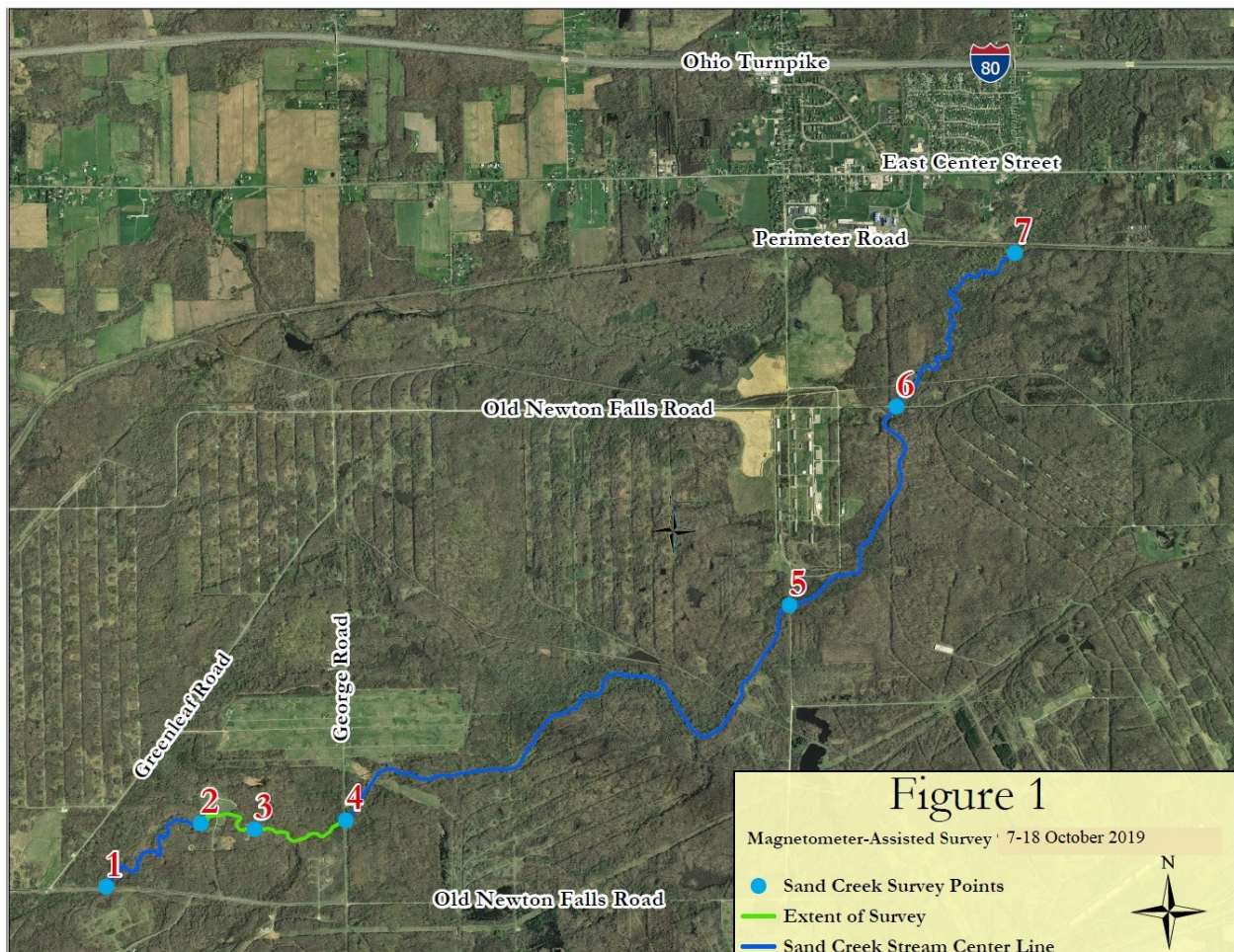
- a) The Open Demolition Area #2 (ODA2) MRS is a former open burning/open detonation (OB/OD) area, dumping ground, and burial site that was used from 1948 to 1991. Large caliber munitions and off-specification bulk explosives that could not be deactivated or demilitarized were detonated within the MRS. The principle sources of MEC/MPPEH at the ODA2 MRS are the result of intentional detonations and potential burial of MEC and bulk explosives. These activities resulted in the potential for MEC/MPPEH to be present in both the surface and subsurface soil at the MRS.

- b) Sand Creek flows through ODA2 MRS and down-gradient areas of the installation. The potential exists for MEC/MPPEH migration within the ODA2 MRS and down-gradient areas during high-energy flood events.

4) Findings.

- a) *Dates of Extent of Survey.* The Sand Creek survey was conducted on 7 – 13 June 2020.
- b) *Personnel.* The survey was conducted by OESS Personnel (Mr. Albert Whittington, and Mr. Lowel Martin).

Areas Surveyed. Seven (7) way-points were established and evaluated during the initial survey (**Figure 1**) completed on 12-16 October 2016. These waypoints were used as markers/reference for the sweep conducted on 7-13 June 2020. For this event, approximately 1.5 line-miles were surveyed in and around the creek line between the ODA2 MRS western boundary (waypoint 2) to George Road (Waypoint 4), as illustrated on **Figure 1**. This survey did not extend beyond Waypoint 4 based on the absence of magnetic anomalies on previous surveys.



5) Observations.

a) Waypoint 2 to Waypoint 3. MEC/MPPEH was recovered between Waypoints 2 and 3. The banks appear to be eroding heavily into the creek in these areas and contain MEC/MPPEH. No MEC/MPPEH was observed to be migrating downstream beyond Waypoint 4. There are two major bends in the creek between the 3-sided culvert (east of Waypoint 2) and Waypoint 3 located at coordinates: N41.19616, W081.09616, and N41.19641, W081.09658 (WGS 84). MEC/MPPEH appear to be collecting in shallow sand bars and these two major bends in Sand Creek. The bulk of the MPPEH in Sand Creek was observed to be west of the 3-sided culvert. During this survey, approximately 100lbs of MEC/MPPEH was recovered. This material was placed in a magazine and will be inspected at a later date. (see **Attachment 1**)

b) Waypoint 3 to Waypoint 4. No MEC/MPPEH was observed/recovered.

6) Conclusions.

a) MEC/MPPEH was identified and removed within the creek between Waypoints 2 and 3. Three MEC items were recovered (unfuzed/unfired). MEC/MPPEH was not observed to be migrating downstream, rather this material appears to be collecting in the shallow areas/sand bars near the 3-sided culvert between Waypoints 2 and 3. Based on this information, future surveys of this area are recommended.

b) Significant erosion of the creek banks was noted between Waypoint 2 and 3.

c) MEC/MPPEH was not observed to be migrating beyond Waypoint 4 or outside of the ODA2 MRS.

Attachment 1



Sweeping Sand Creek, near Waypoint 2.



Erosion of MPPEH/Muniitons Debris (MD) from creek bank, near Waypoint 2.



MPPEH/MD eroding from the creek bank, between Waypoints 2 and 3.



MPPEH/MD eroding from creek bank, between Waypoints 2 and 3.



MPPEH/MD comingled with rock/vegetation in creek, near Waypoint 2.



MPPEH/MD fuze and fuze components recovered from Sand Creek



MPPEH/MD 20mm and components recovered from Sand Creek.



MEC items unfuzed/unfired recovered from Sand Creek.