

Marine Corps Base Camp Lejeune (MCB Camp Lejeune) Restoration Advisory Board (RAB) Meeting Minutes

MEETING DATE: August 10, 2022

LOCATION: Coastal Carolina Community College, Business Technology Building, Jacksonville, North Carolina

ATTENDEES: Thomas Richard/MCB Camp Lejeune Matt Louth/CH2M
Laura Spung/MCB Camp Lejeune Monica Fulkerson/CH2M
David Towler/MCB Camp Lejeune
Dave Cleland/Navy
Randy McElveen/NCDEQ
Angela Moore/NCDEQ
Bill Hunneke/NCDEQ
Jennifer Tufts/EPA
Laura Bader/RAB Co-Chair
Rich Mullins/RAB member
Thomas Mattison/RAB member
Corey Hamil/community member

FROM: Monica Fulkerson/CH2M

DATE: August 18, 2022

I. Welcome and Introductions

Mr. Richard began the meeting.

II. Marine Corps Base Camp Lejeune Basewide Accomplishments

Objective: The purpose of this agenda item is to outline accomplishments, to review Fiscal Year 2023 goals, and to provide an update on Perfluoroalkyl and Polyfluoroalkyl Substances (PFAS) investigations.

Overview: A presentation was reviewed by Mr. Louth.

Accomplishments between January and June 2022 were summarized by investigation activities, remedy implementation and studies, documentation, sustainability, and meetings and outreach. For investigation activities, over 330 samples were collected including 12 soil samples, 291 groundwater samples, 1 pore water sample, 7 surface water samples, 4 sediment samples, 3 sewer vapor samples, 11 soil gas (subslab or exterior) samples, and 1 influent/effluent sample. Munitions surface clearance was initiated over a 165-acre area at Site UXO-29. For remedy implementation and studies, over 4,200 acres of Land use Controls were inspected and managed. Four vapor intrusion mitigation systems were maintained and monitored. The air sparging system at Site 35 operated for more than 2,900 hours to reduce chlorinated solvent contamination in groundwater. At Site 82, the groundwater extraction and treatment system treated over 64 million gallons of water; the air sparging system operated for more than 3,900 hours to address shallow and deeper contamination; and more than 1.6 million gallons of

water were treated in subgrade geochemical bioreactors. Mr. Mattison asked how long work has been ongoing at Site 82. Mr. Louth indicated that investigation and remediation has been ongoing since the mid-1990s. Mr. McElveen explained that additional sources were identified at Site 82 and that work will continue for many years. At Site 88, more than 1.4 million gallons of 2% sodium permanganate were injected into horizontal wells and almost 10 million gallons of water were recirculated within the treatment area. During this time period, 11 documents were finalized, including the Basewide PFAS Site Investigation Report, 5 long-term monitoring reports, and the Site 82 radiological sampling work plan. Environmental restoration continues to focus on sustainability. Over 850 gallons of aqueous waste was eliminated through passive sampling. Over 170 wells were sampled with passive sampling techniques, with an estimated savings of 5 gallons per well. 55,000 gallons of groundwater were treated using exclusively solar power, with an estimated savings of 35 kilowatts per hour. The Site 93 subgrade biogeochemical reactor (SBGR) was replenished with 275 gallons of unused LactOil from Site 88. Between January and June 2022, 2 RAB meetings were conducted (February 2022 and May 2022) and two success stories were posted on Facebook, including one in February 2022 on Land Use Controls sand one in May 2022 on the RAB. Another success story about Sites UXO-28 and UXO-29 is coming this quarter. Finally, Marine Corps Base Camp Lejeune won the 2022 SECNAV and SECDEF Award of Environmental Restoration – Installation!

The following were identified as Fiscal Year 2023 goals for the Installation Restoration Program (IRP): the Site 78 FS Amendment, the Site 88 Interim Remedial Action Completion Report, the Site 96 Remedial Design following signature of the Record of Decision, the Site 111 PFAS RI, and Work Plans for PFAS Data Gap Site Inspections at 8 sites and for 8 PFAS RIs. The following were identified as Fiscal Year 2023 goals for the Military Munitions Response Program (MMRP): the UXO-28 RI/FS, the UXO-29 FS, the UXO-30 RI/FS, and the UXO-31 Preliminary Assessment/Site Inspection.

An update on PFAS investigations was presented. The Basewide Site Inspection recommended 8 sites for a Data Gap Site Inspection (SI) and 44 sites for RI. The Site 111 PFAS RI is currently underway. Planning for 8 Data Gap SIs and 8 additional PFAS RIs is ongoing. PFAS investigations are being completed under a dynamic regulatory setting. The United States Environmental Protection Agency (USEPA) released new/updated regional screening levels (RSLs) in May 2022 for 6 PFAS and criteria were lower than previously established levels. This may change the number of sites that move forward with investigation.

III. Sites UXO-28 and UXO-29 Remedial Investigation Summaries

Objective: The purpose of this agenda item is to present the site background and previous investigations for Unexploded Ordnance (UXO) Sites 28 and 29; review the Remedial Investigation (RI) objectives, approach conclusions, and recommendations; and review schedule and next steps.

Overview: A presentation was reviewed by Mr. Louth.

Site UXO-28

Site UXO-28 encompasses approximately 81 acres along Parachute Tower Road and included a portion of the former D-9 Skeet Range. 144 acres surrounding UXO-28 were added as the Expanded Investigation Area (EIA) based on a potential training area from the 1940s to 2010. Site UXO-28 also includes portions of the D-9 Skeet Range (Site UXO-23) (1953 – 2011); the Greater Wallace Creek Area (dates unknown), where smoke grenade, cartridge casings, practice mortars, pyrotechnics and small arms ammunition were found in the area; and the Tactical Landing Zone (TLZ) Sparrow (1954 – 2000s) comprised of 80 acres used for troop training (practice munitions and pyrotechnics).

Previous investigations and removal actions at Site UXO-28 included a Focused Site Inspection (2007), the UXO-23 (D-9 Skeet Range) Focused Preliminary Assessment/Site Inspection (2008), the Wallace Creek Expanded Site Investigation (ESI) (2009), a Non-Time Critical Removal Action (NTCRA) of polyaromatic hydrocarbon (PAH)/lead contaminated soil within UXO-23 (2012), during which munitions items were found (81-millimeter [mm] mortars, rifle grenades, rocket parts/motors, and small arms

ammunition), the UXO-23 ESI (2013), during which flares were found, the Fitness Trail Military Construction Investigation (2014), during which empty ammunition containers were found, and surface clearance within 28 acres of Site UXO-28 (2018), during which an empty ammunition can was found.

The objectives of the Site UXO-28 RI are to assess the nature and extent of munitions within the EIA and the areas associated with fighting positions, to evaluate the nature and extent of munitions constituents (MC) in soil and groundwater, to assess the potential hazards and risks to human health and the environment, and to update the site boundary. To accomplish these objectives, a mag and dig investigation of fighting positions identified within the site was conducted, digital geophysical mapping (DGM) and intrusive investigation of anomalies was completed, surface clearance within Site UXO-28 boundary was conducted, and surface soil and groundwater samples were collected for analysis of MC.

The RI concludes that Site UXO-28 was likely used as a maneuver training area. A total of 177 munitions items were found and 80% were found just below the ground surface (less than 1.5 feet below ground surface). Of these, 90% were illumination flares, grenades (hand or rifle), 3.5" inert training rockets, or 60-mm or 81-mm mortars. Potential fighting positions were identified. Explosive hazards associated with munitions potentially remaining is considered to be low, with the exception of the EIA, which is considered to be moderate. The previous NTCRA reduced potential hazards within that area. There are no unacceptable risks to human and ecological receptors from exposure to soil and groundwater.

Based on these findings, no further action is recommended for the NTCRA area. A Feasibility Study (FS) is recommended to evaluate remedial alternatives to address potential explosive hazards for the remainder of the site. Surface clearance is planned for accessible areas of the EIA, covering approximately 118 acres.

The RI was finalized in August 2022. Surface clearance will be conducted in Summer/Fall 2022 and the FS is planned for Winter 2022.

Ms. Moore asked what types of munitions items were found in the area outside of Site UXO-28 boundary and Mr. Louth indicated that those items were typically low explosive hazard items, such as practice rounds. Mr. Louth also explained that there is potential to find munitions items anywhere on the Base and the "3R Training" is promoted so that people know what to do if munitions items are encountered. Mr. Hunneke asked how the northern boundary of Site UXO-28 was determined and it was explained that the marshy wetlands were excluded; however, these items are included in the EIA.

Site UXO-29

Site UXO-29 is comprised of 286 acres adjacent to the southern end of the MCAS New River runway and Morgan Bay. The northern tree-cleared portion is part of the approach and take-off safety zone for the MCAS New River runways. 130 acres of the southern peninsula portion is covered by forest, marsh, and scrub bushes. The Site covers portions of 3 historical terrestrial ranges: the Former Infantry Weapons Demonstration Course, B-17 (1946 to 1947), where small arms up to .50-caliber, 60-mm and 81-mm mortars, 2.36-inch and 4.5-inch rockets, 37-mm guns, and 57-mm, 75-mm, and 90-mm projectiles were used; the Former Artillery Training Area (1941 to 1943), where small arms, rockets and projectiles were used; and the Former Hand Grenade Range (Practice) Demonstrator (1970 to 1977), which was used for hand grenade training, including incendiary M14, illumination Mk1, Smoke M18, and White Phosphorus (WP) M15.

Previous investigations at Site UXO-29 include Perimeter Road construction (2013), during which 329 munitions items were found, primarily 2.36" rockets and rocket motors, 60-mm projectiles, and 81-mm mortars, including a High-Explosive Anti-Tank (HEAT) rocket; the Preliminary Assessment/Site Inspection (2017), during which 59 munitions items were found within the northern portion of site, primarily 2.36" rockets and rocket motors, smoke grenades, 60-mm projectiles, and 81-mm mortars, as well as 5 expended signal flares found in the southern peninsula area. Investigations concluded that there is no site-related human health or ecological risks from exposure to surface soil. Ms. Moore asked

why the density of munitions items found is so much higher in the 2013 construction investigation compared to the 2017 PA/SI. Mr. Louth explained that the difference was that a 100 percent investigation was conducted in 2013 (meaning that all anomalies were investigated), while the 2017 PA/SI has a lower resolution. Additional investigation will be conducted as part of the RI.

The objectives of the Site UXO-29 RI are to further characterize the nature and extent of munitions and to assess the potential hazards and risks to human health and the environment. To accomplish these objectives, DGM was conducted along 11 miles of transects and within 8 acres of grids (the Recreation Area) to identify metallic anomalies that may represent potential munitions items. Intrusive investigation of the DGM target anomalies and saturated response areas was conducted.

Over 1,400 munitions items identified. Of these, 82% were rockets (whole, components, or fragments). A potential target was identified adjacent to west side of the Recreation Area (where buried rockets were found). Explosive hazards associated with munitions potentially remaining across 10 areas of the site range from low to high. Six areas were identified as low, including the Northern and Southern Recreation Areas, the Airfield Area – Inside Security Fence, the Western Airfield Area – Outside Security Fence, the Perimeter Road Area, and the Airfield EIA. Three areas were identified as moderate, including Area of Concern (AOC) A, the Southern Airfield Area – Outside Security Fence, and the Southern Peninsula. One area, AOC B, was identified as high. Investigations concluded that there is no unacceptable risk from exposure to MC.

Based on these findings, an FS was recommended for all 10 areas to evaluate remedial alternatives to address potential explosive hazards.

The RI was finalized in September 2021. Surface clearance of all accessible areas (approximately 165 acres) is ongoing and will continue through late Summer/Fall 2022. The FS is planned for Winter 2022.

Mr. Hamil asked about the status of the lower area in the peninsula. This area will be carried forward into the FS, but is a “low” explosive hazard area and that the reopening of the area for hunting is being considered. Mr. Hamil asked when hunting may be permitted in this area and Mr. Richard indicated that it will be at least two years.

IV. RAB Business

Mr. McElveen spoke about this being his last RAB meeting and how much he has enjoyed working with this group to make MCB Camp Lejeune safer.

The next RAB meeting will be scheduled for November 2022 and an email with the projected date will be sent to the RAB members. Mr. Mattison suggested a RAB tour would be appreciated, specifically to see the improvements at Site 82.