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

MEETING DATE:	September 13, 2017
LOCATION:	Coastal Carolina Community College, Business Technology Building, Room BT 103, Jacksonville, North Carolina
ATTENDEES:	Dave Cleland/NAVFAC Mid-Atlantic Charity Delaney/MCB Camp Lejeune Thomas Richard/MCB Camp Lejeune Jennifer Tufts/EPA Randy McElveen/NCDEQ Laura Bader/RAB Co-Chair Thomas Mattison/RAB Member Steven Thompson/RAB Member Dale Weston/RAB Member Betsy Collins/CH2M Matt Louth/CH2M Dylan Elks/Meadows
FROM:	Betsy Collins/CH2M
DATE:	September 26, 2017

I. Welcome and Introductions

Ms. Delaney began the meeting and reviewed the agenda.

II. Site 82 Groundwater Treatment Plant Optimization

Objective: Provide an overview of recent upgrades to the Site 82 groundwater treatment plant.

Overview: A presentation was reviewed by Mr. Elks. Groundwater treatment plant updates were completed in March 2017 and the plant returned to operation. Updates included reconfiguring carbon units, replacing the air compressor, removing the metals treatment, replacing the feed pumps, replacing the backwash pump and adding recirculation to the backwash tank, adding aeration to the flocculent tank, adding aeration to the mixing tank, reinstating solid flocculation, replacing the transfer pump, installing 1,300 ft of new conduit, pouring new concrete pads, installing new safety switches, installation of new carbon units, adding aeration to the storage tank, installing a new sand filter, installing the shallow tray air stripper, anti-scalant injections. finalizing plumbing and electrical upgrades, carbon replacement in old vessels, and final pump alignment and testing. An as-built was prepared to document the upgrades to the system and includes product specifications and part numbers.

Plant operation from April, May, and June 2017 were reviewed and 99.9-100% removal of volatile organic compounds (VOCs) were observed, 6.8-11.6 million gallons of effluent was treated, and 122-228 pounds of VOCs were removed. In April 2017, there was a detection of tetrachloroethane in effluent and may have been a lab error. Additional sampling was conducted at the same and a different lab and the detection was not reproduced. The new shallow tray air stripper is proving effective in reducing VOC concentrations in shallow influent based on data reviewed before and after the air stripper (and before the carbon). Operations, maintenance, and monthly sampling is ongoing.

III. Upcoming Projects and Investigations to be Conducted at the Base

Objective: Provide an overview of upcoming projects in the Installation Restoration and Military Munitions Response Programs.

Overview: A presentation was reviewed by Mr. Louth.

Polyfluoroalkyl Substances (PFAS) investigations

A work plan is currently being finalized for the PFAS investigation at four sites (Site 9, 54, 86 and Phoenix Landing Zone). The investigation will include installing groundwater monitoring wells and sampling new and existing monitoring wells for analysis of PFAS parameters. Next steps will be evaluated based on analytical results.

Site 3 Pilot Study

The selected remedy at Site 3 is Long-Term Monitoring (LTM) with Land Use Controls (LUCs). In 2015 and 2016, a Phase I pilot study successfully achieved surficial radius of influence. A Phase II pilot study is planned for the upper Castle Hayne (UCH) aquifer as benzo(a)anthracene remains above the cleanup level in MW02IW. An oxygen-releasing compound (ORC) sock will be placed in MW02 and MW14IW, water will be pumped from MW02IW until DO increases, then an ORC sock will be placed in MW02IW. Monitoring will continue for semi-volatile organic compounds (SVOCs) and field geochemistry parameters.

Site 35 Pilot Study

The selected remedy at Site 35 is monitored natural attenuation (MNA) with LUCs. Due to VOCs remaining in the southern plume, a pilot study will be conducted to enhance degradation to accelerate time to site closure. A combination of emulsified vegetable oil and bioaugmentation culture will be injected and monitoring wells will be sampled for three quarters for analysis of VOCs and biological parameters.

Site 49 Pilot Study

The selected remedy at Site 49 is groundwater and porewater LTM with LUCs. Concentrations in one well (MW01) remain slightly above regulatory criteria. A pilot study is planned to enhance degradation in MW01. Air sparging will be conducted in existing UCH aquifer monitoring well MW01IW, located below MW01, for one week. If test sparging is deemed successful, it will continue for 6 months and groundwater samples will be collected quarterly. If test sparging is not deemed successful, then a subgrade bioreactor with recirculation will be implemented.

Site 73 Pilot Study

The current remedy at Site 73 is LTM and MNA with bio-wall and LUCs. A pilot study is planned due to persistent vinyl chloride concentrations in up-gradient locations. Three bio-traps will be deployed in the source area for 45 days and analyzed for microbiology, chemistry, and geochemistry to determine the best injectant. Baseline samples will be collected from five monitoring wells for analysis of VOCs, microbial, and natural attenuation indicator parameters (NAIPs) and five injection wells will be installed based on the results. Carbon substrate and/or bioaugmentation culture will be injected and three quarters of post-implementation groundwater samples will be collected for VOCs, microbial, and NAIPs.

Site 88 Pilot Study

The Site 88 final feasibility study is currently being prepared. In Zone 1, enhanced reductive dechlorination using emulsified vegetable oil (EVO) with bioaugmentation is planned. This will include 21 surficial and 78 UCH aquifer injection wells spaced 20 feet apart. In Zone 3, a biobarrier using EVO with bioaugmentation is planned. Ten new and four existing injection wells will be utilized to target the UCH aquifer.

Site 89 Pilot Study

The current remedy at Site 89 includes a mulch wall, air sparging, LTM/MNA, and LUCs. The mulch wall replenishment project began in spring 2017 but was not completed due to an elevated groundwater table. A Phase II mulch wall replenishment is planned for fall 2017 and will utilize a gravity feed system to inject EVO into the mulch wall and minimize daylighting.

Site 93 Pilot Study

The current remedy at Site 93 is LTM/MNA with LUCs. An initial bioreactor pilot study was successful implemented in 2015 and is ongoing. A Phase II pilot study is planned to bioaugment and continue operation of the bioreactor. Groundwater monitoring will continue to evaluate reduction and effectiveness.

UXO-06

The UXO-06 Proposed Plan and public comment period are complete and no comments were received. Following preparation of the Record of Decision (ROD), the Remedial Design (RD) will be completed to implement the action in the ROD and will include surface clearing, surveying for a plat map, recording with Onslow County, and installing signs in accordance with the LUCs.

UXO-19

The RD is complete and LUCs were surveyed in May 2016 and recorded with Onslow County in September 2016. Warning signs will be installed along the perimeter of the site and at roadways or entrance paths to the site.

IV. Update on the Site Unexploded Ordnance (UXO)-29 Preliminary Assessment and Site Investigation

Objective: Provide an update on the UXO-29 Investigation recently conducted.

Overview: A presentation was reviewed by Mr. Louth. Three former ranges fall within UXO-29: a former Infantry Weapons Demonstration Course, former Artillery Training Area, and former Hand Grenade [Practice] Demonstrator range.

A Preliminary Assessment/Site Inspection (PA/SI) is underway to evaluate the nature and presence of munitions and munitions constituents and whether conditions pose potential risks to human health and the environment. The following PA/SI activities have been completed: a historical records review, Explosives Safety Submission, work plan, site reconnaissance, mag and dig in the Southern Peninsula, clear and survey transects, surface clearing, digital geophysical mapping (DGM), and soil sampling.

Site reconnaissance of the southern peninsula area was conducted in December 2016. The peninsula was found to consist of marsh, thick ground vegetation, and deep ravines. Access from boat was limited due to marsh, false shoreline, fallen trees, and heavy vegetation along shoreline. Mag and dig was conducted where accessible five material potentially presenting an explosive hazard (MPPEH) expended flares were found.

Surface soil samples were collected from 67 decision units (2 acres each) and from 25 discrete sample locations for explosives residues, perchlorate, and metals analysis. The preliminary perchlorate and explosives residues results, pending validation, indicate that in discrete sampling locations in the southern woods and peninsula no perchlorate was detected, 2,4-dinitrotoluene exceeded North Carolina Soil Screening Levels (NCSSLs) at two locations, and no explosives residues were detected above residential screening levels (RSLs) or ecological screening values. In decision unit sampling locations in the northern non-wooded areas, no perchlorate was detected, 2,4-dinitrotoluene exceeded NCSSLs at three locations, 2,6-dinitrotoluene exceeded the RSL and ecological screening values at one location, and 2,4,6-trinitrotoluene exceeded the RSL at one location.

The preliminary metals results (pending validation) indicate that there were no exceedances of industrial RSLs. Five metals exceeded NCSSLs (chromium, cobalt, iron, manganese, and vanadium). Three metals exceeded residential RSLs (arsenic, chromium, and cobalt). And lead exceeded ecological screening values.

In preparation for DGM, transects were flagged, surveyed, and cleared of vegetation and utility locating was conducted. During surface clearing activities, four MPPEH items were discovered, three rocketsone smoke grenade. DGM was conducted in 8.26 miles of transects and 950 anomalies were identified. After removing noise/spikes, below threshold, or suspected/known cultural features, 776 anomalies remained.

Visual Sampling Program (VSP) identified three elevated anomaly density areas and one background area. 466 anomalies were investigated to achieve a 95% confidence level. Anomalies that could not be located/investigated (e.g., too deep or site feature) were replaced with another location. 65 additional anomalies were added to further define extent. No MEC items were found and 59 MPPEH items (later classified as material document as safe) were found.

Data is expected to complete the validation process in September 2017. Subsurface soil sampling and/or groundwater sampling will be conducted in Fall 2017, if necessary. If no additional sampling is required, the PA/SI will be submitted to the Navy and Base in December 2017 and the Partnering Team in early 2018.

V. RAB Business

The next RAB meeting will be conducted in December 2017, tentatively scheduled for December 6, 2017.