ISSUE 88 – March 2024

Environmental Cleanup Program

Emma Flewell Joins Beale AFB Environmental Restoration Program as New Military Munitions Response Program Manager

Beale Air Force Base (AFB) welcomes Emma Flewell as the Environmental Restoration Program's (ERP's) new Military Munitions Response Program (MMRP) manager. Ms. Flewell replaces Maia Lipschutz in this role.

Ms. Flewell holds degrees in Math and Science from Folsom Lake Community College (2018) and Environmental Science and Management with a focus in Policy and Planning from California State Polytechnic University (Cal Poly) Humboldt (2020). While at Cal Poly Humboldt, she received an Outstanding Student Award from the Environmental Science and Management Department. She is also a Safety Trained Supervisor through the Board of Certified Safety Professionals. Prior to accepting the MMRP manager position with Beale AFB, Ms. Flewell worked as an Environmental Scientist at a small environmental remediation and consulting company in Folsom, California.

Ms. Flewell always wanted to be involved in restoring and protecting the earth as well as minimizing threats to human health and the environment. As a child, she spent most of her time outside and fell in love with nature; she knew that she wanted a career in the environmental field where she could make a difference. Ms. Flewell began her involvement with environmental advocacy while in the fifth grade. She and her best friend created a "No Idling Zone" at their elementary school after they learned the effects of auto emissions on the environment. They created a PowerPoint presentation to convince the school teachers of the need for the No Idling Zone, and then they spent every recess for a few weeks painting signs that are still posted outside the school to this day.

Outside of her career, Ms. Flewell played volleyball on the Cal Poly Humboldt women's team, coached the girls' team at Gold Cal Juniors Volleyball Club, and loves to read. Currently, she is reading "Braiding Sweetgrass," a collection of personal essays about personal experiences and traditional ecological knowledge written by indigenous peoples from all over the United States. She enjoys hiking with her boyfriend and their 6-year-old chocolate Labrador retriever named Moose who loves duck hunting, treats, and long naps.

Plume CG041-039 Vapor Intrusion Data Gap Investigation

Plume CG041-039 is a volatile organic compound groundwater plume underlying the north-central portion of Beale AFB. The plume is primarily located beneath the area near A and C Streets (commonly known as the Cantonment Area). Groundwater in this area is shallow, generally found between 10 and 30 feet below ground surface. The contaminants of concern (COCs) are primarily tetrachloroethene (PCE) and trichloroethene (TCE).

In 2018, a final remedy for Plume CG041-039 was established in the Record of Decision. The remedy includes hot spot treatment of groundwater contamination using a specific type of vegetable oil that, under the right conditions, can help natural bacteria in the soil break down the PCE and TCE. This process is known as enhanced reductive dechlorination. Although this remedy has been started, the PCE/TCE breakdown process takes time.

Vapor intrusion can occur when chemical vapors migrate upward from contaminated groundwater. Vapors can collect beneath a building, seep through small cracks in the building foundation and floor, and then migrate into the indoor air where they can accumulate to potentially harmful levels.

A vapor intrusion data gap investigation was completed for three buildings in the Cantonment Area to make sure the buildings are safe for use while the plume cleanup continues. The buildings selected for the study are Building 2474 (Base movie theater), Building 2425 (Community Activities Center), and Building 24176 (Dormitory Building B, the southern building of a two-building dorm complex).

Sampling for the vapor intrusion data gap investigation was conducted as two events in July 2022 and February 2023. Each event included the following activities:

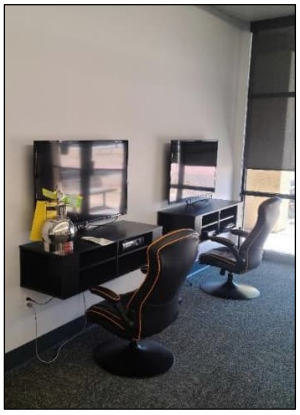
- **Exterior Soil Vapor Sampling –** A drill rig was used to install temporary soil gas probes in the ground around the building perimeter. The probes have tubing that runs from the sample tip to the ground surface. Vapor samples were collected from the tubing into Summa canisters (a stainless-steel container) over a 5-minute duration. Analytical results from these samples tell us the levels and depths at which PCE and TCE might be migrating upward from the groundwater.

Exterior Soil Vapor Sampling

- **Sub-Slab Vapor Sampling –** Temporary vapor pins were installed through the slab of each building. A small hole was drilled through the concrete floor of each building using a roto-hammer drill. Vapor pins fit tightly into the holes and allow for vapor samples to be collected from the base gravel layer beneath the building floor. These samples were also collected in Summa canisters over a 5-minute duration. Analytical results from these samples tell us if harmful vapors are concentrating beneath the floor.

Sub-Slab Vapor Sampling

- **Indoor Air, Crawlspace Air, and Outdoor Air Sampling –** Summa canisters were placed within and outside of the buildings, and samples were collected over a 24-hour period. These samples are collected by sipping small amounts of air at about 1-hour intervals throughout the day and night. Called “time-weighted samples,” this type of sample is the best way to determine the air quality inside and outside the buildings.



Indoor Air Sampling

Outdoor Air Sampling

- **Reporting and Results –** A Vapor Intrusion Data Gap Investigation Assessment Report is currently being prepared and will present the results of the sampling. Results indicate that there is no current indoor air risk from COCs and that Building 2474 (Base movie theater), Building 2425 (Community Activities Center), and Building 24176 (Dormitory Building B, the southern building of a two-building dorm complex) are safe for use while the plume cleanup continues.

Military Munitions Response Program Update

The Beale AFB Military Munitions Response Program (MMRP) has recently obtained approval on two important documents.

- **SR622 RACR –** In early February of this year the Munitions Response Site (MRS) SR622 Remedial Action Completion Report (RACR) was approved by the Wing Commander. The RACR documents the completion of 100 percent surface clearance remedial action to identify and remove potential munitions and explosives of concern (MEC) and the implementation of land use controls (LUCs) at MRS SR622. The LUCs prohibit subsurface intrusive activities without unexploded ordnance technician support conducting anomaly avoidance. The LUCs will be in place in perpetuity or until the intended land use changes and additional subsurface removal actions occur.
- **ED631 Action Memo –** In late January of this year, the MRS ED631 Action Memorandum was approved by the Wing Commander. The Action Memorandum documents the decision to undertake the Non-Time Critical Removal Action (NTCRA) for MEC and munitions constituents (MC)-contaminated soil and sediment at MRS ED631. The selected remedy includes 100 percent MEC surface and subsurface removal of anomalies above the selected millivolt threshold using digital geophysical mapping (DGM) and removal of MC-contaminated soil and sediment posing a potential for exposure to human and ecological receptors. Advanced geophysical classification (AGC) was not considered because the MRS is an open-burn / open-detonation (OB/OD) site.

Restoration Advisory Board Tours and Meetings

You are cordially invited to attend the public Resource Advisory Board (RAB) meetings and tours. **The next RAB meeting is scheduled for May 16, 2024**, from 6:00 p.m. to 7:00 p.m. at the One Stop Center for Business and Workforce Development, Second Floor, 1114 Yuba Street, Marysville, California. **Please stay tuned to your email for updates.**

To find out more about the RAB at Beale AFB, to be placed on the email mailing list, or to inquire about becoming a RAB member, please contact any of the following individuals:

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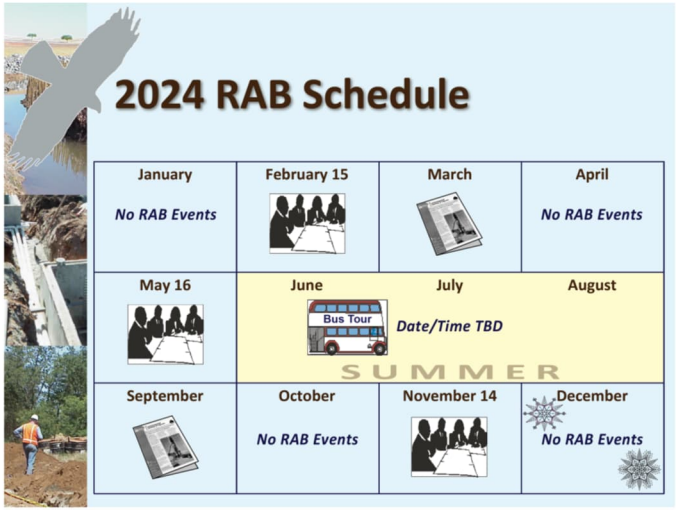

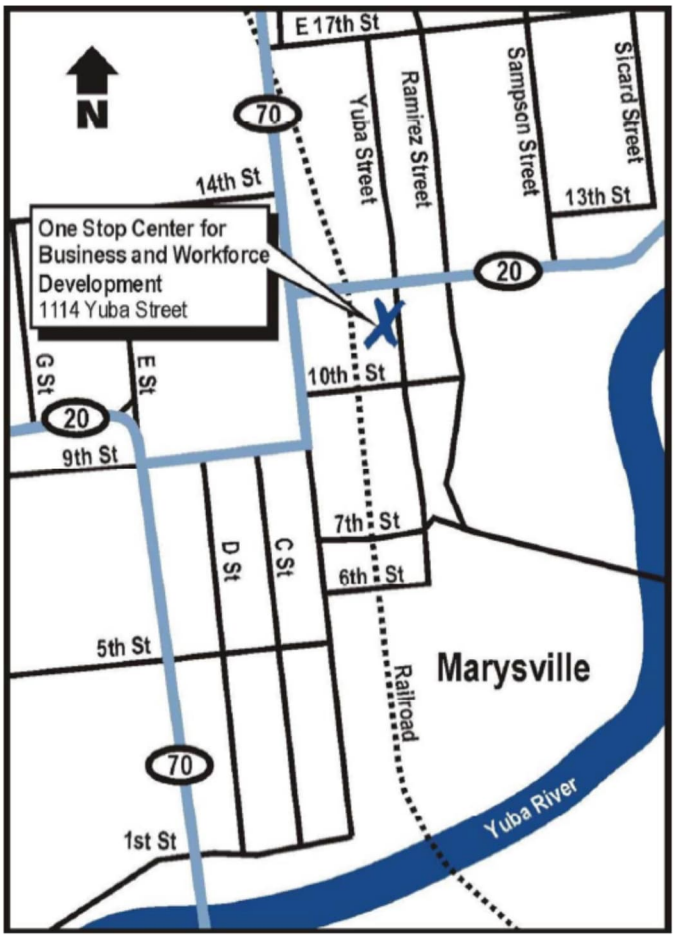
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