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Environmental Restoration Program Overview, Milestone Objectives, and Success in Obtaining Site Closures

Beale Air Force Base (AFB or Base) has participated in the Air Force Environmental Restoration Program (ERP) since the program's inception in the early 1980s. The ERP is designed to identify, confirm, and clean up problems arising from past releases of hazardous substances and petroleum products into the environment. Progress under the ERP is closely coordinated with various California regulatory agencies, including the California Environmental Protection Agency represented by the Department of Toxic Substances Control (DTSC), and the Central Valley Regional Water Quality Control Board (Central Valley Water Board). Beale AFB makes every effort to consider and incorporate regulatory input in all Base investigation and restoration activities. Agreements with, and enforcement action orders from, these agencies can significantly affect the ERP and related activities. The Base also makes every effort to consider and incorporate public comments in its environmental restoration activities.

Interaction and communication between Base personnel and the California regulatory agencies have been ongoing since the ERP's inception. All parties involved work closely together to plan and monitor ERP progress. Program status meetings with core restoration personnel are held on a regular basis to scope new work, resolve technical challenges as they arise, discuss recommendations for closure, determine requirements for regulatory closure approval, keep lines of communication open, maintain transparency, and avoid unnecessary delays in ERP activity.

Beale AFB's Restoration Advisory Board (RAB) is a forum for exchange of information about the ERP and partnership among citizens, the Base, and regulatory agencies. The RAB offers an opportunity for the community to provide input on the cleanup process. The goal of an active RAB is to improve the cleanup program by increasing community understanding and support for cleanup efforts, improving the soundness of cleanup decisions, and ensuring that community needs are considered during cleanup actions.

Beale AFB communicates with the RAB and the public about the ERP through meetings, tours, newsletters, and occasional public notices in the local newspaper. The Base also works directly with residents near the Base boundary through personal letters, phone calls, and home visits.

As part of the efforts of the staff supporting the ERP, Beale AFB has achieved cleanup milestones of response complete (RC) and site closure (SC) at various sites since the start of the performance-based contract in 2012. The RC milestone is defined by (1) achieving the site remedial action objectives or cleanup goals stated in the decision document; (2) implementing land use controls, as appropriate; and (3) demonstrating the site is protective of human health and the environment. RC has been achieved at 10 sites (SD001, TU001, FT003, SD010, WP016, ST021, SD023, SD031, OW034, and SS037).

The SC milestone is defined by (1) demonstrating all applicable Air Force, regulatory, or other legal requirements for the cleanup process have been followed to reach SC; (2) confirming there is no additional funding programmed for the site; (3) demonstrating all conditions for no further action have been achieved, if applicable, and (4) validating the site meets residential cleanup standards or unlimited use and unrestricted exposure (UU/UE). The term UU/UE means houses, hospitals, daycares or other "sensitive uses" could be built in those locations if the base property was ever transferred to the public or another government entity. SC has been achieved at nine sites (SD001, FT003, SD010, WP012, WP016, ST021, SD023, SD031 and SS037).

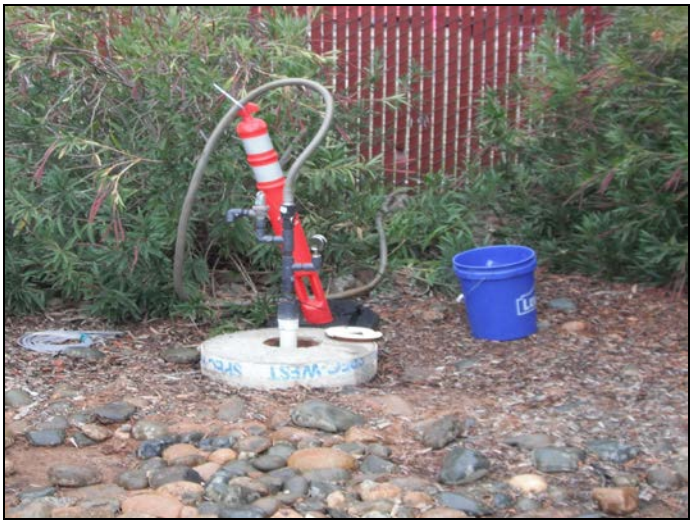
The ERP goal is to achieve RC at 19 additional sites and SC at 16 additional sites by 2020. The RAB will continue to be informed about the cleanup progress under the ERP in future RAB meetings, tours, and newsletters.

Site SS023 In Situ Chemical Oxidation Injection

In Situ chemical oxidation (ISCO) injections were performed near Building 2496 in the Transportation Yard, within Resource Conservation and Recovery Act (RCRA) Solid Waste Management Unit 23 (Site SS023) to address trichloroethene (TCE) in groundwater. Discharges to a grease pit beneath a concrete pad in the Civil Engineering Yard were identified as the source of contamination where TCE migrated through the soil and affected groundwater. Contaminated soil was excavated in 2000. Steam and ozone injection had been conducted previously to treat groundwater. In 2014, ISCO was selected as the improved remedy for TCE in groundwater.

The goal of ISCO is to reduce TCE in groundwater to below 100 micrograms per liter (µg/L). This will allow the rest of the TCE to naturally degrade to the enforceable drinking water quality standard, referred to as the maximum contaminant level (MCL). The MCL for TCE is 5 µg/L.

Site SS023 ISCO injection setup.


Site SS023 ISCO injection well.

Chemicals called oxidants are pumped underground where they react with TCE and convert it into harmless compounds (carbon dioxide and chlorine). In this case, the oxidant used was sodium permanganate, which comes in a purple liquid form. The color is used as an indicator to confirm the oxidant has distributed effectively. The darker the color, the higher the concentration of the oxidant.

The first round of ISCO injections was completed in January 2015. TCE concentrations in two wells downgradient from the source of contamination increased above the target concentration of 100 µg/L following injection. A second round of ISCO injection was performed in October 2015 in these two wells to complete active treatment. Groundwater will continue to be monitored until MCLs for contaminants in groundwater have been achieved.

Public Notice of Signings

The Air Force, California Department of Toxic Substances Control, and Central Valley Regional Water Quality Control Board have signed two Records of Decision (RODs) for Sites WP012 and SD001 at Beale AFB, California. The RODs are legally binding documents that have been approved by all parties.

The Site WP012 ROD selects no further action necessary to protect human health and the environment for all media. The selected final response was chosen in accordance with the Federal Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA). The public was invited to comment on the Air Force's proposed final response during a 30-day public comment period from May 18 to June 17, 2015. One comment was received from the public as documented in the Responsiveness Summary portion of the ROD.

The Site SD001 ROD selects no further action necessary to protect human health and the environment for soil and sediment and no action for surface water. The selected final response was chosen in accordance with CERCLA. The public was invited to comment on the Air Force's proposed final response during a 30-day public comment period from May 14 to June 12, 2015.

Administrative Record

The RODs and related documents are available for public review in the Administrative Record for Beale AFB. The Administrative Record is located at Beale AFB, California 95903. Please coordinate access to Beale AFB and the Administrative Record through Kent Hawley at the contact information below.

For more information contact:

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Closure Corner

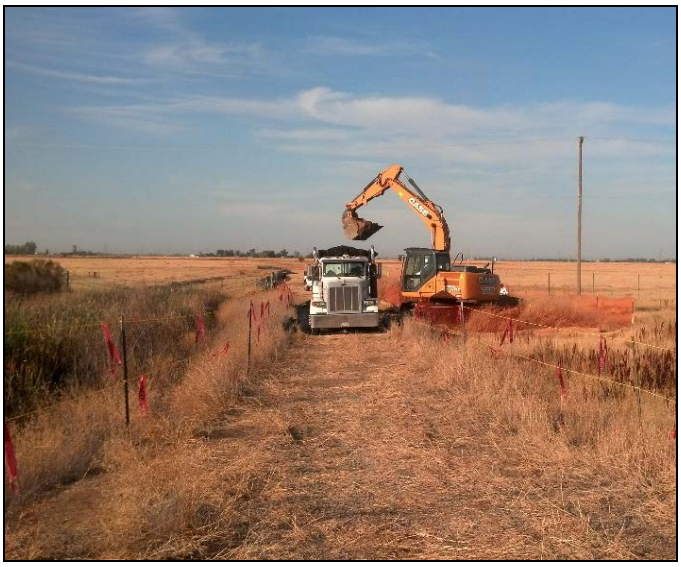
The Air Force is continuing this regular feature in the RAB Newsletter to keep you informed on recently closed sites. These are environmental cleanup sites where the environmental cleanup objectives have been achieved because some form of remedial activity has been completed; therefore, no further action, monitoring, land use restriction, or management is required.

The following Beale AFB sites have been closed since the February 2015 update:

- **Site WP012:** This is the former Entomology Building 440 located on the corner of G and 9th Streets at Beale AFB. Site WP012 includes Building 440 and adjacent grasslands to the north, east, and south as well as drainages that may have transported contaminants away from Building 440. The primary contaminants in soil and sediments were pesticides, which were addressed by previous removal actions. No Further action is necessary for the protection of human health and environment.
- **Site SD001:** This is the Westside Drainage Ditch located in the northwestern portion of Beale AFB. Site SD001 includes the Westside Drainage Ditch, an outfall and drainage ditch that receives surface runoff from the runway/flightline area. A storm drain outfall located approximately 800 feet west of the runway receives surface runoff from the northern two-thirds of the runway/flightline area and discharges into the Westside Drainage Ditch. Runoff from the flightline area resulted in contaminated soil and sediments in the Site SD001 Westside Drainage Ditch. The soil and sediments located in the ditch were periodically dredged and stockpiled on the banks of the ditch. The primary contaminant in soil and sediments is lead which was addressed by excavating and removing the soil piles from the site. No Further action is necessary for the protection of human health and environment.

Keep up-to-date on the status of the Beale AFB site closures with each forthcoming newsletter!

Site WP012 – Former Entomology Building 440.



Site SD001 – Soil Pile Removal.

Restoration Advisory Board Tours and Meetings

You are cordially invited to attend the public RAB meetings. The RAB meetings are held at the One Stop Center for Business and Workforce Development, Second Floor, 1114 Yuba Street, Marysville. The next RAB meeting is scheduled for Thursday, November 19, 2015 from 6:00 to 8:00 p.m.

For more information on the Beale AFB RAB, to be placed on the mailing list, or to inquire about becoming a RAB member, please contact any one of the following individuals:

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For more information on the Beale AFB RAB's upcoming activities, please contact:

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