

SELECTED REMEDY: Land Use Controls and Limited Groundwater Monitoring**Site History**

LHAAP-003-R, the Ground Signal Test Area, is located in the southeastern portion of LHAAP and covers an area of approximately 80 acres. LHAAP-003-R was used intermittently starting in April 1963 for aerial and on-ground testing and destruction of a variety of devices, including pyrotechnic signal devices, red phosphorus smoke wedges, infrared flares, illuminating mortar shells and cartridges, button bombs, and various types of explosive simulators. The site was also used intermittently over a 20-year period for testing and burn-out of rocket motors. From late 1988 through 1991, the site was also used for burn-out of rocket motors in Pershing missiles. Occasionally, leaking white phosphorus (WP) munitions were burned at the site as a demilitarization activity. LHAAP-003-R is co-located with Installation Restoration Program site LHAAP-54. LHAAP-003-R was identified as a munitions and explosives of concern (MEC) area of concern based on the reported presence of MEC. In 2008 MEC removal action was conducted and LUCs were developed. A total of 12 MEC/material potentially presenting explosive hazard (MPPEH) items and one inert item were located and destroyed and 6,880 pounds of munitions debris and 5,981 pounds of cultural debris were removed during the course of surface clearance. In addition, LUCs were designed that include restrictions against intrusive activities including digging; signage at the perimeter of the site; and education programs for future refuge visitors, staff, and volunteers. After resolution of a dispute between Army and EPA in March 2016, the 2011 Draft Final ROD was revised and the final ROD was finalized in September with a selected remedy of implementation of LUCs and limited groundwater monitoring for perchlorate, in addition to the completed removal action.

Site Characteristics

The site is located within the watersheds of Saunders Branch and Harrison Bayou. Both Saunders Branch and Harrison Bayou flow into Caddo Lake. Surface water runoff from the site is towards drainage ditches located alongside the circular dirt road forming the outer margin of the site. The ditches converge to the northeast and the southwest directing surface water to Saunders Branch and Harrison Bayou, respectively. The depth to groundwater at the site averages about 15 feet below ground surface with some seasonal fluctuations. The regional groundwater flow direction is to the north-northeast toward Caddo Lake; however, during periods of high precipitation the groundwater flow direction in the southwestern portion of the site diverts to the northwest towards Harrison Bayou. The additional groundwater sampling conducted by the USEPA and U.S. Army in 2009 indicated that perchlorate was detected in one well at a concentration below the Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level (PCL) of 17 ug/L.

Remedial Action Objective (RAO)

- Protection of human health and safety from explosive hazards that may have remained at the site after the MEC removal action and confirmation that perchlorate is present in groundwater at levels below the chemical specific criterion

Description of the Selected Remedy:**Implementation of LUCs:**

- to prohibit the development and use of the property for residential housing, elementary and secondary schools, and child care facilities and playgrounds, and to prohibit intrusive activities such as digging or any other activity which could result in explosive safety risks.
- to prohibit residential land use will remain in place until it is demonstrated that the MEC no longer presents a threat to public/human safety.
- to restrict land use to nonresidential will remain in place until it is demonstrated that the MEC no longer presents a threat to public/human safety.
- to prohibit intrusive subsurface activities, including digging, will remain in place until it is demonstrated that the MEC no longer present an explosive hazard

Limited groundwater monitoring:

Limited groundwater monitoring for perchlorate will confirm perchlorate level in groundwater is below the TRRP Tier 1 Groundwater Residential PCL which is the state remedial standard utilized in the absence of a federal drinking water standard.

Five Year Reviews will be conducted because explosive hazards may remain at the sites that do not allow for unlimited use and unrestricted exposure.

LHAAP-003-R, Ground Signal Test Area

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