

SECRETARY OF THE ARMY ENVIRONMENTAL AWARDS 2026

KIM BIRDSALL, ARIZONA ARMY NATIONAL GUARD ENVIRONMENTAL RESTORATION, INDIVIDUAL



Over the past ten years, the Arizona Army National Guard and its Environmental Remediation Projects Manager, Kim Birdsall, have achieved an impressive milestone: formal closure of three legacy restoration sites. Closure of these sites represents years of effort on the part of the Arizona Army National Guard (AZARNG) and extensive coordination with the state Department of Environmental Quality (DEQ). Two of the sites were located at Papago Park Military Reservation, where underground fuel storage tanks had created soil and groundwater contamination; the third was a legacy construction debris landfill at Camp Navajo, where asbestos materials, some metals, and polyaromatic hydrocarbons required remediation. With comprehensive cleanup actions completed at these sites in 2015, 2022, and 2024, Birdsall applied the diligent oversight and monitoring required over the past two years to obtain DEQ concurrence on site closure, thereby removing the burden of further action from the AZARNG.



Birdsall worked closely with DEQ as the primary regulator, US Army Corps of Engineers (USACE) as the contracting agency, and an 8(a) restoration firm for the two sites at Papago Park Military Reservation. Coordination with these stakeholders ensured that the projects proceeded smoothly and with the greatest efficiency. At the Papago Military Reservation sites, for instance, Birdsall was able to document that the vapor intrusion potential was below regulatory standards, and she consulted with DEQ to avoid an unnecessary risk assessment process for the former underground storage tank (UST) site. Acting as a liaison between the AZARNG, DEQ, and the cleanup contractor, Birdsall was able to minimize the time and expense associated with final monitoring and closure of the sites.



Papago Park Military Reservation supported a wide range of essential activities, including aircraft fueling and maintenance, vehicle fueling and maintenance, fuel and solvent storage, detonation areas, gunnery ranges, and more. Many of these operations involved UST infrastructure. Several aging USTs had been found to have leaked in the late 1980s and 1990s, exposing soil and water resources to leaded gasoline and diesel fuel. While the tanks and related piping were removed in the late 1980s, the full remedial action would continue for decades, beginning with the installation of a groundwater monitoring network followed by deployment of a dual-phased extraction system (groundwater and soil vapor). The dual-phased extraction solution was launched in 2012 followed by the additional of seven dual-phased extraction monitoring wells installed between 2017-2018. In 2021, the system was revamped to more aggressively treat the petroleum hydrocarbons still present, with the installation of five air sparging wells, 21 dual-nested air sparging/soil vapor extraction wells, and six multiphase extraction wells. This system ran until 2023, when Birdsall was able to document contaminant levels below regulatory standards. At that point, she was able to shift to active monitoring rather than treatment, demonstrating that the restoration had been successful and the sites were eligible for closure.



With the closure decision from DEQ, Birdsall has implemented the after-action plan for the UST sites. All the remediation wells have been abandoned in accordance with State requirements,



Program Management



Technical Merit



Orientation to Mission



Transferability



Stakeholder Interaction



Program Impact



with the exception of a handful of groundwater monitoring wells that remain to monitor for per- and polyfluoroalkyl substances (PFAS). The treatment system at the site have also been decommissioned. The subsurface piping, including electrical conduit and process piping within the treatment compound area, have been cut and capped below grade, and Birdsall managed the surface area restoration in conjunction with the AZARNG's natural and cultural resources managers.



Birdsall also managed the closure of a historic construction debris landfill, NAAD-43, on Camp Navajo. Four landfill areas associated with the site were closed with no further action in 2010, but the remaining restoration site had been used to dispose of debris from the deconstruction of Indian Village in the 1970s. Assessments in the 1980s and 1990s found ordinary debris along with asbestos-containing materials as well as evidence of debris burning. Investigations in the 1990s suggested the landfill was sited over porous basalt rock, which could allow for leaching of contaminants to groundwater. The AZARNG installed 39 passive soil gas probes at that point to test for semivolatile and volatile organic compounds (SVOC/VOC), followed by soil boring tests.

At that time, arsenic, beryllium, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene were detected in soil at concentrations exceeding their respective non-residential health-based guidance levels used for regulatory compliance. A human health risk assessment evaluation determined exposure pathways were present through incidental ingestion, dermal contact, and inhalation of chemicals of potential concern in surface and near surface soils (including dust emissions) for current and future on-site workers.

Based on results of this human health risk assessment, it was concluded that limiting worker contact, restricting cattle grazing and elk hunting, and/or conducting a removal action was warranted. Throughout the late 1990s and early 2000s, the AZARNG conducted surficial removal efforts followed by long-term monitoring and access restrictions through 2020. A supplemental soil investigation was also performed in 2020 to evaluate residual concentrations of contaminants, and the presence of asbestos was documented.



The AZARNG's final remedial action for NAAD-43 involved raising the ground surface where contaminated material had been excavated, thereby preventing future ponding of surface water; essentially, the topography of the landfill was restored to its original condition with the addition of clean soil and regrading to improve drainage. Native vegetation was then reestablished to stabilize soils. With continuous monitoring thereafter, Birdsall successfully obtained DEQ concurrence on no further action and closure of the landfill site in 2024.



Closure of these sites represents a significant cost savings to the AZARNG, which will no longer be called on to spend money and expertise on site monitoring or any further actions at the UST or landfill cleanup sites. The closure of NAAD-43, moreover, is in alignment with the Installation Master Plan, with that acreage now available for training activities. The remediations have successfully mitigated risks to human health and the environment in accordance with the AZARNG's commitment to stewardship of its training lands.



Because these restorations involved areas that were not accessible to the public, Birdsall did not engage in significant public outreach on these actions; testing at the three sites demonstrated that there was no migration and no risk of migration of contaminants off AZARNG properties. Her primary stakeholders, therefore, were the internal directorates of the AZARNG and the DEQ; Birdsall's leadership and communication helped to ensure that the closure process was streamlined and fully endorsed by both agencies. After literal decades of investment in these restoration actions, the closure of these sites is a tremendous achievement.