

Fact Sheet

New River Unit (RAAP-044)

September 2013

The Radford Army Ammunition Plant is located in the mountains of southwestern Virginia and consists of two noncontiguous units: the New River Unit and the Main Manufacturing Area (Figure 1). The New River Unit encompasses approximately 3,000 acres and is located near the town of Dublin, about six miles southwest of the Main Manufacturing Area. Both the Main Manufacturing Area and New River Unit are owned by the Army and they are currently operated and maintained by BAE under contract to the Army.

The New River Unit facility was constructed in 1940 and was operated as a powder bag loading plant for artillery, cannon, and mortar projectiles during World War II. All active manufacturing operations at the New River Unit ceased in 1945 at the end of the war, and since that time, it has served primarily as a storage facility for on-going propellant and explosives manufacturing operations conducted at the Main Manufacturing Area.

Environmental restoration of the New River Unit (NRU) at the Radford Army Ammunition Plant is being managed under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (Figure 1). Six study areas were identified and evaluated within the NRU: Bag Loading Area (BLA), the Igniter Assembly Area (IAA), Building Debris Disposal Trench (BDDT), the Western Burning Ground (WBG), the Northern Burning Ground (NBG), and the Rail Yard (RY) (Figure 2). In addition, groundwater beneath the New River Unit was evaluated as a single unit. Characterization of the environmental conditions at each of the five Study Areas began in 1997. The groundwater investigation activities for the RFAAP-NRU facility began in 2007. The earliest site investigations were conducted for the sole purpose of identifying the potential presence of contaminants associated with historical land uses at the Study Areas. More detailed investigations were then conducted which examined the environmental media (surface soil, subsurface soil, sediment, surface water and groundwater) for full suites of organic and inorganic compounds including volatile organic compounds, semivolatile organic compounds, polyaromatic hydrocarbons, polychlorinated biphenyls, pesticides, herbicides, explosive-related compounds, and metals. In addition, samples collected from both of the burning grounds and groundwater were analyzed for dioxins/furans. Groundwater samples were further analyzed for perchlorate, total organic carbon, and total organic halides. Subsequent site investigations were conducted to further characterize and delineate the extent of compounds that were detected at elevated concentrations within each of the Study Areas.

The Remedial Investigation (RI) and Feasibility Study (FS) conducted at RFAAP-NRU concluded that response actions were required at four of the Study Areas. In addition, a Removal Action was conducted at the NBG. The response actions were coordinated with the Virginia Department of Environmental Quality (VDEQ) and were designed to protect the public health and welfare or the environment from actual or threatened releases of hazardous substances. The final response action for each study area was selected in conjunction with the VDEQ and identified in the Decision Document. Throughout the investigation process, periodic meetings were held to brief the Restoration Advisory Committee on investigation results and proposed actions. In addition, upon the selection of the Proposed Response Actions, the VDEQ provided a public comment period as well as a Public Meeting (or in the case of the NBG a Public Hearing) during which the history, results of the investigations and the Proposed Response Actions were presented. Prior to the public meetings, results of the investigations and the subsequent

selection of the Proposed Response Actions were made available to the public both on-line and at the local library. The Study Areas and the final response actions performed are described herein.

Response Actions

Igniter Assembly and Bag Loading Areas

Former buildings at the IAA and BLA contained a metallic conductive flooring material to prevent buildup of static charges during historical manufacturing operations. This flooring material was exposed to weathering when wooden roofs and walls were removed from the buildings. The flooring material had degraded due to weathering and had leached metals and asbestos to the soils surrounding the buildings.

- *IAA Response Action: The remaining conductive flooring was removed and the soil containing metals and asbestos were excavated and disposed off-site to achieve residential clean up levels. Land Use Controls have been put in place to restrict access due to the presence of the building remnants. These controls are documented in the Land-Use Control Implementation Plan (LUCIP).*
- *BLA Response Action: The remaining conductive flooring was removed and soil containing metals and asbestos were excavated and disposed off-site to achieve industrial/commercial clean up levels. Land Use Controls have been put in place to prevent future residential land use and to restrict access to the building remnants. These controls are document in the Land-Use Control Implementation Plan (LUCIP).*

Building Debris Disposal Trench

The BDDT is located in the southern portion of the NRU and was originally a natural surface water drainage channel. The BDDT was formerly used as a disposal site for construction debris from the NRU buildings. The construction debris and visibly stained soil was removed from the trench in 1998. The excavated soils were replaced with clean fill and the base of the trench was lined with a geotextile material. The trench was then filled with rip-rap to prevent erosion.

- *Response Action: Land Use Controls were put in place to prevent future residential land use and mitigate erosion of soil to the adjacent stream. These controls are document in the Land-Use Control Implementation Plan (LUCIP).*

Western Burning Ground

The Western Burning Ground was used to decontaminate explosives contaminated materials and to dispose of off-spec energetics. A test pitting investigation (excavation) was completed at the WBG in 1999 that effectively removed soils above residential screening levels in the source area. However, lead and chromium were found at elevated levels in sediment within a small area of a pond located near the former burning ground.

- *Response Action: Sediment at the edge of the pond containing lead and chromium was excavated and disposed off-site of to achieve residential clean up levels.*

Northern Burning Ground

The Northern Burning Ground was used to decontaminate explosives contaminated materials and to dispose of off-spec energetic materials. Lead and chromium were identified in surface soil at concentrations that would have precluded industrial or residential use of the site if not removed. In 2009 a Removal Action was conducted under CERCLA's *Guidance on Conducting Non-Time-Critical Removal Actions Under CERCLA*. This process included the completion of an Environmental Engineering Cost Analysis, an Action Memorandum, and public hearing held by VDEQ on 14 October 2009. All documentation presenting the investigation results were made available to the public prior to the hearing.

- *Response Action: A Removal Action was completed at the NBG in December 2009 during which 384 tons of soil containing elevated levels of lead and chromium were excavated and transported to an off-site disposal facility. The Removal Action was designed, executed and achieved unrestricted future land use, and thus, was identified as the final remedy for the Site.*

Rail Yard

The Rail Yard was used as a former loading/unloading area for rail cars (three tracks and three open transfer platforms). The environmental investigations found isolated detections of PAHs and Aroclor-1254 in surface soil, below industrial screening levels. In addition, metals detections were within background limits. There were no exceedances of industrial screening levels in sediment.

- *Response Action: No Action based on unrestricted land use (i.e., residential)*

Groundwater

The geology at the NRU is typical of the surrounding limestone/dolomite karst environment. Groundwater typically occurs within the open fractures in the bedrock. A total of three groundwater sampling events (circa 2007, 2008 and 2010) were completed at the RFAAP-NRU and included a total of eleven monitoring wells installed at the BLA, IAA, NBG, and WBG sites. The monitoring activities have also included the collection of spring water samples from four springs located throughout the facility. Only metals (arsenic, iron, lead, manganese) were detected at concentrations above Federal Maximum Contaminant Levels (MCLs) in samples collected from a few of the monitoring wells; however, metals levels in the dissolved phase (soluble) samples were below MCLs as were the spring water samples. All other analyzed constituents, including perchlorate, were either not detected or determined to be present at concentrations below MCLs or health-based screening levels provided by USEPA and VDEQ. Detections of metals above MCLs only occurred in samples with high levels of suspended solids indicating that the well installation and development techniques may be a contributing factor. In addition, the detected metals appear to be naturally occurring as they are the same metals that are present in background soils. All other compounds were either not detected, or if detected were less than their health-based screening levels and/or MCLs.

- *Recommended Response Action: No Action based on unrestricted land use (i.e., residential)*

Where to Find Project Information

Project Reports can be found on line at <http://radfordaapirp.org/inforepo/online-index.htm>, or in the Information Repositories listed below:

Montgomery-Floyd Regional Library – Christiansburg Branch
125 Sheltman Street
Christiansburg, VA 24073
Ph #: 540-382-6965