

A Locational Data Package that provides the latitudinal/longitudinal coordinates and a map of the Site and the OU II Non-Surface and Ground-Water Impacted Peripheral Properties is available to the public in the Site information repositories identified above.

Site History

The Monticello Millsite, located within OU I of the Site, was constructed with government funding in 1942 by the Vanadium Corporation of America (VCA) to provide vanadium, a steel hardener, during World War II. Vanadium was produced through the milling of uranium-bearing ore. The VCA operated the Millsite until early 1944 and again from 1945 through 1946, producing vanadium as well as a uranium-vanadium sludge for the Manhattan Engineer District. The U.S. Atomic Energy Commission (AEC) purchased the Millsite in 1948. Uranium and vanadium milling operations began again in 1949 under the auspices of the AEC. Vanadium milling operations ceased in 1955, with uranium milling continuing until 1960 when the Millsite was permanently closed. Four piles of tailings, the processing wastes remaining from uranium ore milling, were left at the Millsite following the cessation of milling operations. The total volume of tailings and soil mixed with tailings in these four piles was originally estimated to be approximately 1,570,000 cubic yards.

The tailings had significant radioactivity, especially from the presence of radium-226 (Ra-226), and contained certain potentially toxic, nonradioactive metals. Properties in and around the City became contaminated primarily by windblown tailings from these four piles. Tailings from the Millsite also were used as construction material and backfill on properties in and around the City. In addition, tailings were transported from the Millsite to downstream properties via Montezuma Creek. The Millsite and certain surrounding properties also became contaminated with residues from ore stockpiles and with by-product materials generated during Millsite operations. It was originally estimated that properties outside the boundary of the Millsite contained approximately 400,000 cubic yards of tailings-contaminated soils. Surface water and ground water on the Millsite and on certain properties outside the boundary of the Millsite became contaminated with radioactive materials and with toxic nonradioactive metals associated

with tailings, such as arsenic, selenium, and vanadium.

In 1961, the four tailings piles were stabilized and covered with uncontaminated rock and dirt to minimize the spread of contamination. Millsite buildings and equipment also were dismantled, some of which were buried on the Millsite. In 1974–1975, additional contouring of the Millsite and demolition of the mill foundations were undertaken to reduce exposure levels. In 1980, the Monticello Millsite was accepted into the U.S. Department of Energy's Surplus Facilities Management Program (SFMP), which was established for caretaking and decommissioning of inactive government facilities that still had radiological contamination. Also in 1980, the U.S. Department of Energy-Grand Junction Office (DOE-GJO) established the Monticello Remedial Action Project (MRAP) to isolate tailings-related sources and thereby prevent them from causing harm to human health or the environment.

Two separate NPL sites were established in the Monticello area because of the spread of radioactive mill tailings. On June 10, 1986, the Monticello Vicinity Properties (MVPs), which eventually totalled 424 private and commercial properties in the City, were established as the first NPL site, designated as the Monticello Radioactive Contaminated Properties (51 FR 21054 (June 10, 1986)). Mill tailings removed from the Monticello Radioactive Contaminated Properties Site were stockpiled temporarily at the Millsite pending final disposal in the repository south of the Millsite. Once removal of tailings-related contamination in accordance with project cleanup standards was completed, the Monticello Radioactive Contaminated Properties Site was fully deleted from the NPL on February 28, 2000 (64 FR 73423 (December 30, 1999)).

The Monticello Mill Tailings (USDOE) Superfund Site (the Site) was the other NPL site established in the Monticello area. In December 1988, EPA, UDEQ, and DOE entered into a Federal Facility Agreement (FFA), pursuant to section 120 of CERCLA, 42 U.S.C. 9620, to facilitate remediation of the Site. The FFA established that the DOE was a responsible party (RP) and the lead agency for remediation at the Site. The DOE-GJO was tasked with providing principal staff and resources to plan and implement response actions at the Site. The EPA was identified as the lead regulatory agency with ultimate responsibility and authority for oversight of activities performed by

DOE-GJO, but it was to share its decision making with UDEQ. In June 1989, prior to the Site being placed on the NPL, remedial action was initiated at the Site at one of the 22 OU II Non-Surface and Ground-Water Impacted Peripheral Properties. The EPA placed the Site on the NPL on November 21, 1989 (54 FR 48184 (November 21, 1989)). Removal of tailings-related contamination in accordance with project cleanup standards was completed at the last of the OU II Non-Surface and Ground-Water Impacted Peripheral Properties in January 2000. The EPA, UDEQ, and DOE-GJO agreed on March 28, 2000, that deletion of the Site from the NPL would be accomplished with partial deletions. Deletion of the OU II Non-Surface and Ground-Water Impacted Peripheral Properties from the NPL was deemed appropriate because radioactive materials in soils and sediment had been removed to levels protective of human health and the environment and because no radiological or nonradiological contamination was present in surface water or ground water located on these properties.

Remedial Investigation and Feasibility Study (RI/FS)

The RI/FS for the Site was completed in January 1990. The RI determined that Millsite operations had resulted in the spread of tailings-related contamination to the soil, surface water, ground water, and air. Most soils on the Millsite (OU I) were found to be contaminated with tailings and ore, some to a depth of 18 feet. Soils contaminated with tailings and ore were also identified on at least 200 acres of the peripheral properties (OU II) located adjacent to the Millsite. Tailings-contaminated sediments (OU II), transported off the Millsite by Montezuma Creek, were found approximately three miles down-gradient from the Millsite boundary. Radiological contamination was also detected in surface water (OU III) (Montezuma Creek) approximately three miles down-gradient from the Millsite boundary. Radiological contamination and other nonradiological contaminants of concern, such as molybdenum, selenium, and vanadium, were detected in ground water (OU III) beneath the Millsite and beneath properties located approximately 4,600 feet down-gradient from the Millsite boundary. Air at all locations sampled within the Millsite boundary was found to be contaminated with radon gas.

Besides characterizing the extent of contamination on the Site, analytical data collected for the RI were used to perform human health risk assessments.