Fact Sheet

U.S. DEPARTMENT OF ENERGY | Legacy Management

Grand Junction, Colorado, Site

A D&D site

This fact sheet provides information about the **Grand Junction site**. Long-term stewardship responsibilities for this site are managed by the **U.S. Department of Energy Office of Legacy Management** under the **Defense Decontamination and Decommissioning Program**.

Site Information and History

The Grand Junction site is located near the city of Grand Junction, in west-central Colorado, about 26 miles from the Utah border. The Gunnison River flows along the western and northern boundaries of the site and flows into the Colorado River about a half-mile north of the site.

The U.S. War Department acquired the original 55.7-acre property in 1943 for use by the U.S. Army Corps of Engineers Manhattan Engineer District, which operated a refinery on-site from 1943 to 1946 to concentrate uranium oxide. The refinery produced an estimated 2.36 million pounds of uranium oxide and a comparable amount of vanadium oxide, which were shipped off-site for further processing. The U.S. Atomic Energy Commission (AEC), a predecessor agency of the U.S. Department of Energy (DOE), operated a uranium concentrate sampling plant and assay laboratory on-site until 1974.

Beginning in 1953, AEC conducted a research program in a small pilot mill at the site to test experimental uranium ore milling techniques, and in 1954, a larger pilot mill was constructed at the south end of the property. Approximately 30,000 tons of ore were processed before milling operations ceased in 1958.

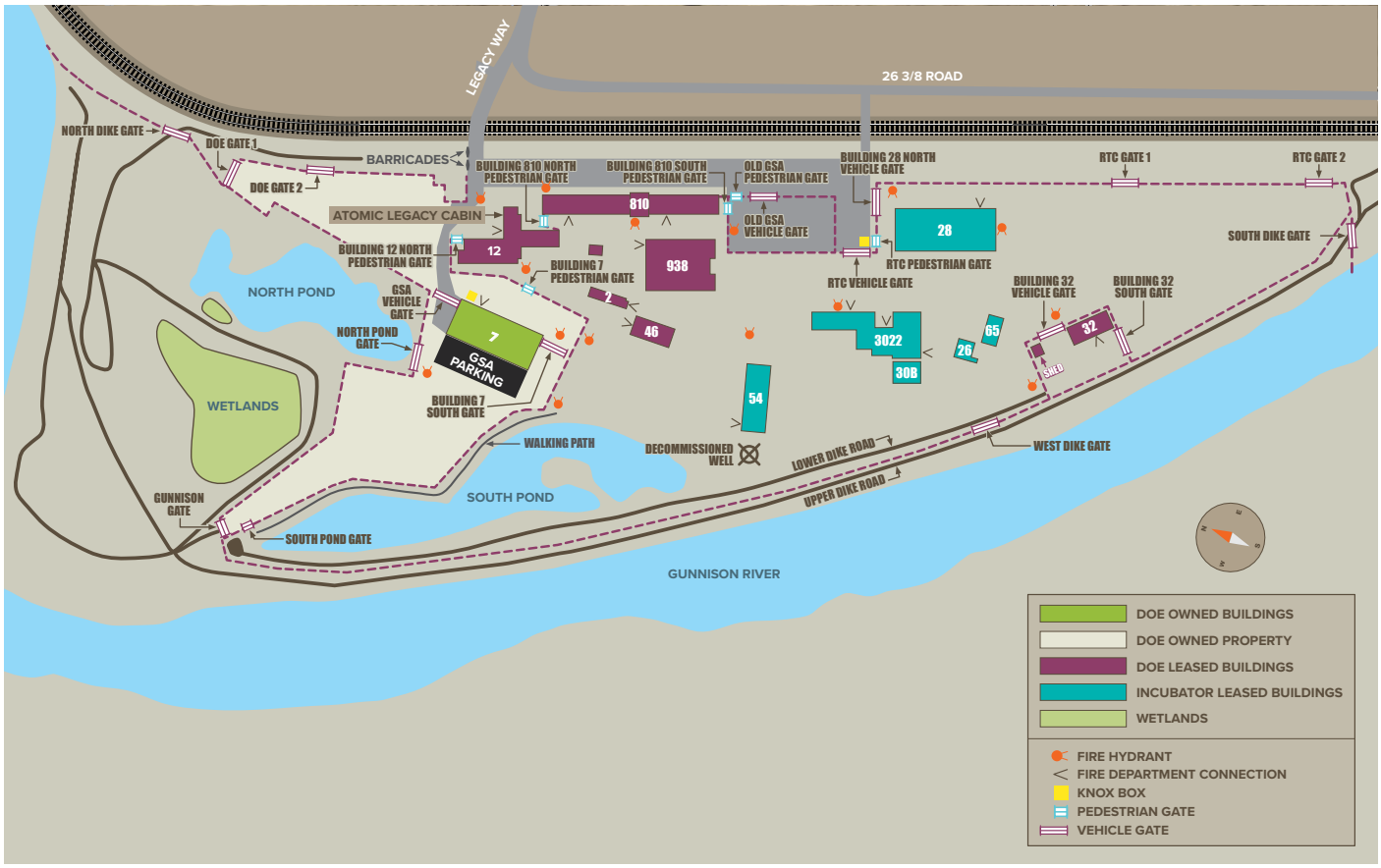
The milling operations resulted in contamination of soil and groundwater at the site. Surplus uranium ore, uranium mill tailings, contaminated equipment, and other waste from the pilot mills and sampling plant were disposed of on-site.

Nonhazardous waste materials were buried in a landfill area in the northwest part of the property. Storm water runoff and waste from an analytical laboratory drained into two on-site ponds. An estimated 100,000 cubic yards of tailings and contaminated soils were stabilized on-site, and another 300 cubic yards of contaminated process equipment were buried at the site.

Contaminants in the stockpile and buried tailings leached into the shallow alluvial groundwater, which is in direct hydraulic contact with the two on-site ponds and wetlands, as well as the Gunnison River. Concentrations of molybdenum, nitrate, selenium, and uranium exceeded federal and state standards in the on-site surface water bodies or in alluvial groundwater beneath the site. Contaminants in groundwater discharging to the river are diluted to levels comparable to levels upstream of the site.

Removal of uranium mill tailings and contaminated soil began in late 1989, and most of the contaminated soil was removed by 1994. Additional small deposits of contaminated soil and material were removed during remedial action conducted from 1998 through 2014. The total volume of uranium mill tailings and tailings-contaminated material removed from open land areas was approximately 256,340 cubic yards. The tailings and related materials occupied approximately 33.3 acres. The primary locations of remediation included the two on-site pond areas, areas located to the north and northwest of the property, and a dike along the Gunnison River.

DOE also identified 24 buildings at the Grand Junction site that were radiologically contaminated as a result of past site activities. Remediation consisted of demolishing the buildings or decontaminating them and releasing them for unrestricted use.



Layout of the Grand Junction, Colorado, Site.

In September 2001, DOE transferred about 46 acres of the site to the Riverview Technology Corporation, a nonprofit business development entity sponsored by Mesa County and the city of Grand Junction. Occupants include the Western Colorado Business Development Corporation Small Business Incubator, various small businesses, and DOE's Office of Legacy Management (LM). In December 2001, DOE transferred ownership of the remaining 8 acres on the northwest portion of the property to the U.S. Army Reserve. In 2018, DOE re-acquired the 8-acre property and associated 18,900-square-foot building from the U.S. Army Reserve.

A decommissioned 300-foot-deep, cased well containing radium foil that was used for calibrating down-hole logging instruments remains on-site. A plaque installed over the well describes the level of radioactivity of the radium foil and provides a warning to not disturb the well without contacting the Colorado Department of Public Health and Environment (CDPHE).

In 2016, the former Grand Junction Office was listed on the National Register of Historic Places in recognition of its important, historic roles in the Manhattan Project and the Cold War.

Regulatory Setting

Most of the historical radioactive materials consisted of uranium mill tailings, which are similar to materials regulated either as residual radioactive material under Title 40 *Code of Federal Regulations* (CFR), Part 192, or regulated as 11(e)(2) by-product material under the Atomic Energy Act of 1989 (Public Law 83-703). Radioactive materials removed from the Grand Junction site were accepted for co-disposal with Uranium Mill Tailings Radiation Control Act residual radioactive materials at the Grand Junction, Colorado, Disposal Site.

The primary relevant and appropriate regulations for the remediation of the Grand Junction site are 40 CFR 192, "Health and Environmental Protection Standards for Uranium and Thorium Mill Tailings;" and DOE Orde 5400.5, *Radiation Protection of the Public and the Environment*. Site groundwater is regulated under Title 5 *Code of Colorado Regulations* (CCR), Part 1002-41, "The Basic Standards for Ground Water;" and 40 CFR 192. Site surface water is regulated under 5 CCR 1002-35, "Classifications and Numerical Standards for the Gunnison and Lower Dolores River Basins."

DOE transferred property to the Riverview Technology Corporation pursuant to provisions in the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), Section 120 (h), "Property Transferred by Federal Agencies."

Compliance Strategies

All soils and buildings at the site have been cleaned up and released for unrestricted use. DOE plans to leave the radium foil in the decommissioned well in place because it poses no present or future risk to human health or the environment.

The compliance strategy for contaminated groundwater and surface water at the site is natural flushing with institutional controls. Contaminants in the alluvial aquifer are projected to flush to acceptable levels in 50 to 80 years after remediation was completed.

Institutional Controls

Institutional controls applied to the Grand Junction site consist of access controls and deed restrictions to prevent inadvertent exposure to contaminated media. The deed restrictions include prohibitions against disturbance or use of any untreated groundwater underlying the site, including drilling wells, excavating soils that expose groundwater, or diverting groundwater through any means without express written consent of CDPHE and DOE. These restrictions are attached to the property deed and are recorded in the Records of Mesa County. The controls will survive subsequent property transfers. DOE will monitor these institutional controls, and CDPHE will enforce them through CERCLA authorities, as specified in the property sale and transfer agreements.

Legacy Management Activities

LM manages the site according to a site-specific Long-Term Surveillance and Maintenance Plan. Current activities at the site include: conducting annual sampling of groundwater and surface water, validating the analytical data generated from the annual sampling event, conducting an annual site inspection and preparing an inspection and monitoring report, monitoring well maintenance, and conducting an evaluation of the groundwater monitoring program every five years.

Atomic Legacy Cabin

On the grounds of the Grand Junction Site, the Atomic Legacy Cabin presents the history of uranium mining and processing on the Colorado Plateau, as well as Grand Junction's unique contribution to the Manhattan Project and the Cold War. Opened in 2019, the cabin's exhibits also detail the environmental cleanup and long-term stewardship of legacy sites by DOE. Visitors are welcome during posted public hours at no cost. Tours and educational programs are also available upon request. More information available online at www.energy.gov/lm/atomic-legacy-cabin.

CONTACT INFORMATION

IN CASE OF AN EMERGENCY AT THE SITE, CONTACT 911

LM TOLL-FREE EMERGENCY HOTLINE: (877) 695-5322

Site-specific documents related to the **Grand Junction, Colorado, Site**, are available on the LM website at **www.energy.gov/lm/grand-junction-colorado-site**

For more information about LM activities at the **Grand Junction, Colorado, Site**, contact:
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