



U.S. DEPARTMENT OF  
**ENERGY**

Legacy  
Management

## Weldon Spring, Missouri, Site History

This site is managed by the U.S. Department of Energy Office of Legacy Management.

### Early Years

The U.S. Army acquired 17,232 acres in St. Charles County near Weldon Spring, Missouri, in 1940 as part of the World War II defense effort. From 1941 to 1945, the Army produced explosives at the Weldon Spring Ordnance Works. After the war, the government transferred ownership of some of the land to the State of Missouri, which used it to create the August A. Busch Memorial Conservation Area. Another portion went to the University of Missouri, which used it for agricultural purposes. Later the University land was sold to the State of Missouri to create the Weldon Spring Conservation Area. The Army retained the remainder of the land for use as a training area. Several small parcels transferred to St. Charles County and the Francis Howell School District.

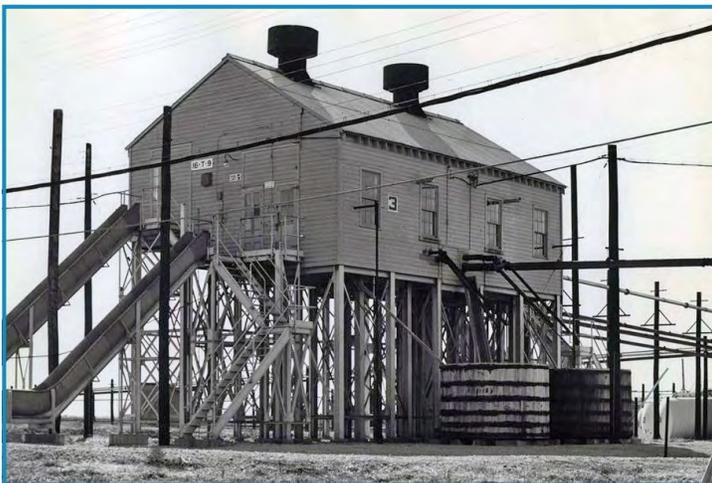
In 1956, 205 acres of the former Ordnance Works property was transferred to the U.S. Atomic Energy Commission (AEC) for construction of the Weldon Spring Uranium Feed Materials Plant, later called the Weldon Spring Chemical Plant. The plant operated from 1957 to 1966 and consisted of about 44 buildings, four settling basins totaling 25 acres called raffinate pits, two ponds, and two former dump areas.

The Army used a quarry 4 miles south of the Chemical Plant for disposal of trinitrotoluene (TNT) residues. In 1958, AEC acquired title to the Quarry and used it to dispose of uranium- and radium-contaminated building rubble and soils from the demolition of a uranium-ore processing facility in St. Louis, Missouri. A small amount of thorium residue was also disposed of in the Quarry. In 1967, AEC closed the Plant and the Army reacquired it. The Army partially decontaminated several buildings, dismantled some of the equipment, and began converting the facilities to produce an herbicide known as Agent Orange for use in the Vietnam War. In 1969, reduced requirements for the herbicide and escalating cleanup costs resulted in the cancellation of the project. No herbicides were delivered or produced at Weldon Spring.

### Cleanup and Disposal

In 1984, the Army repaired several of the buildings at the Chemical Plant; decontaminated floors, walls, and ceilings; and isolated some contaminated equipment to minimize migration of contaminants offsite.

In 1984, at the direction of the U.S. Office of Management and Budget, the Army transferred custody of the Chemical



One of Many Buildings of the Weldon Spring Ordnance Works Which Operated from 1941 – 1945



Weldon Spring Uranium Feed Materials Plant Which Operated from 1957 – 1966

Plant to the U.S. Department of Energy (DOE). Under this direction, DOE was responsible for the cleanup, and the Army was required to pay part of this cost. DOE designated the site a major project called the Weldon Spring Site Remedial Action Project (WSSRAP), and funds for cleanup were requested from Congress. A project office was established at the site in 1986, and cleanup activities were initiated.

The U.S. Environmental Protection Agency (EPA) placed the Weldon Spring Quarry on the National Priorities List (NPL) in 1987 because of the potential for groundwater contamination to adversely affect a drinking water well field less than a mile away that served 60,000 users in rapidly growing St. Charles County. The NPL designation was expanded to include the raffinate pits and the Chemical Plant area in 1989; together the three areas became known as WSSRAP.

WSSRAP's mission was to eliminate potential hazards to the public and environment and to make surplus property available for other uses to the extent possible. The scope of work included dismantling 44 Chemical Plant buildings and structures and disposing of radiologically and chemically contaminated structural materials, sludge, and soils. DOE began decontamination and dismantlement of buildings in 1988 and completed work in fall 1994. The project also involved disposing of as much material as possible from the raffinate pits, Quarry, and vicinity properties (including water, sludge, abandoned waste materials, and structural materials). Removal of bulk waste from the Quarry began in 1993 and was completed in 1995.



*Quarry Cleanup in Progress with Debris, Soil, and Water Removed*

Contaminated material had to be disposed of in a manner that would meet the requirements of the project mission. To meet this need, DOE constructed a 41-acre disposal cell in the area formerly occupied by Chemical Plant production buildings. The cell provides long-term containment and management of waste materials. Approximately 1.48 million cubic yards of waste from the Quarry, the Chemical Plant site, and vicinity properties was placed in the cell. DOE completed construction of the cell cap in October 2001. In 2002, a viewing platform and informational signs on the top of the 75-foot-high disposal

cell were added to allow public access to the cell and to provide a panoramic view of St. Charles County and the Howell Prairie.



*Raffinate Pit 4 Sludge Removal During Cleanup*

## Site Restoration and Public Outreach

DOE's goal beyond the cleanup of contaminants was to restore the site to its natural state and create a publicly accessible area for recreational and educational uses. Haul roads were converted to a hike-and-bike trail, the Hamburg Trail, that traverses the Weldon Spring Site from the Quarry to the Chemical Plant site to the August A. Busch Memorial Conservation Area and links with the historic Katy Trail. Informational markers are posted along the Hamburg Trail at points of historical interest.

The Hamburg Trail was named in recognition of the town of Hamburg, Missouri, one of three towns taken over by the Army to construct the Weldon Spring Ordnance Works during World War II.

Quarry restoration was completed in several phases. Work activities included backfilling the Quarry with specially selected and prepared borrow material, dismantling the Quarry Water Treatment Plant, reclaiming the water collection system, restoring the haul road, and final grading. Backfilling reduced the physical hazards associated with excavated areas such as rock benches, open fractures, ponded water, and potential instability in the high wall. The backfill also provides a gentle slope so rainwater flows over the surface of the Little Femme Osage Creek.

The conversion of the haul road to a hike-and-bike trail and final grading of the Quarry was the last phase of restoration. The final grade minimizes erosion, and the area was returned to its natural contours. Restoration of the Quarry was completed in September 2002.

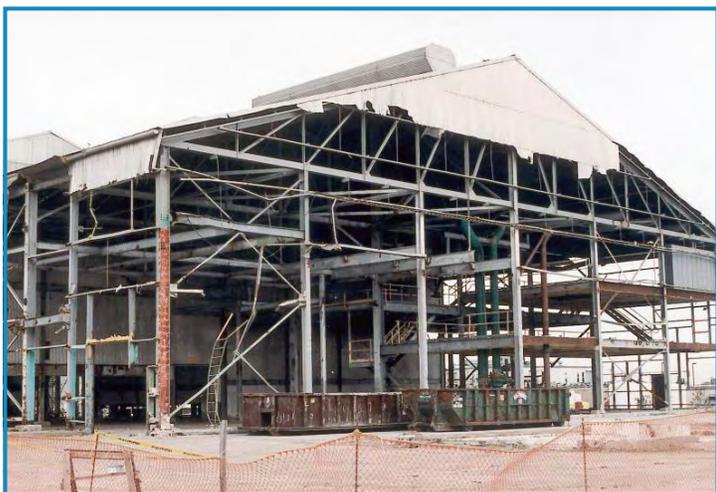
The site restoration effort includes preventing erosion around the disposal cell while creating an environment that benefits birds, insects, and small mammals. The process

of establishing a prairie to revegetate the site for erosion protection began in 2002 with the preparation and seeding of approximately 150 acres of soil surrounding the disposal cell and extending to the site boundary. The Howell Prairie was named in honor of the original prairie on which Francis Howell, Sr., built his homestead in the early 1800s. The creation of the Howell Prairie continued in 2003 and 2004 with the planting of approximately 80 species of native forbs and prairie grasses.

To preserve the history of the Weldon Spring Site and tell the story of its interesting past, DOE remodeled one of the buildings at the site into a 10,663-square-foot Interpretive Center. Visitors can now hike or bike the Hamburg Trail through the site, climb to the top of the disposal cell to view the expanse of prairie in bloom at various times of the year, and tour the Interpretive Center and Native Plant Educational Garden. The Native Plant Educational Garden contains extensive plantings of species from the Howell Prairie as well as other perennials, shrubs, and trees.



*Dismantling and Sorting of Chemical Plant Materials During Cleanup*



*Dismantling a Chemical Plant Building During Cleanup*

## Long-Term Surveillance and Maintenance of the Site

LM developed a site-specific Long-Term Surveillance and Maintenance Plan for the Weldon Spring, Missouri, Site to ensure continual monitoring of the site in conjunction with surrounding landowners. This plan details the long-term monitoring program, annual inspection process, and institutional control (restrictions that protect public health and the environment by limiting access) areas associated with the site.

## Contacts

Documents related to the Weldon Spring Site are available on the DOE Office of Legacy Management website at <http://www.lm.doe.gov/weldon/sites.aspx>.

For more information about DOE Office of Legacy Management activities at the Weldon Spring Site contact:

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(877) 695-5322 (toll-free)



*Construction of the Onsite Disposal Cell*



*Placement of Waste Material into the Disposal Cell*



*Backfilling of the Quarry near the End of Cleanup*



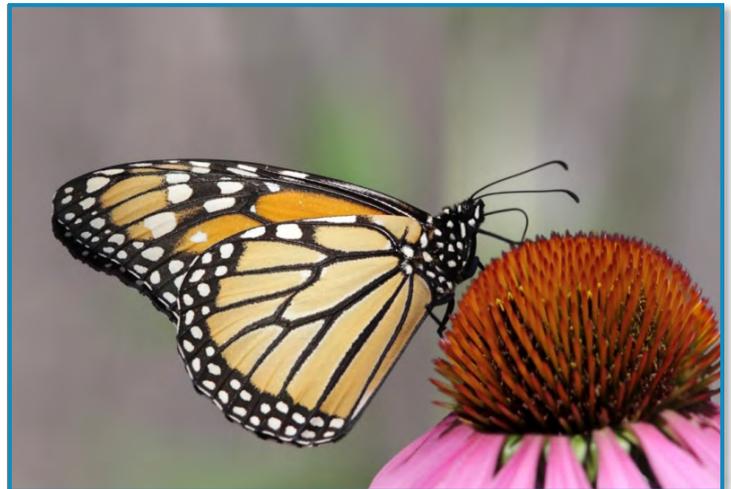
*The Hike-And-Bike Hamburg Trail Looking West Toward the Army Property and Adjoining Weldon Spring Conservation Area*



*Weldon Spring Site's Existing Conditions at Onsite Disposal Cell and Restored Howell Prairie*



*Tickseed Sunflower (*Bidens Aristosa*) in the Howell Prairie*



*Monarch Butterfly (*Danaus Plexippus*) on Purple Coneflower (*Echinacea Purpurea*) in the Native Plant Educational Garden*