# Appendix N

# Example Historical Marker and Plaque

This page intentionally left blank

# The Hamburg Trail

## Historical Marker 10

The Hamburg Trail is an eight-mile hiking and biking trail which links the Katy Trail to the August A. Busch Memorial Conservation Area Headquarters. The trail was created as part of a cooperative effort between the Missouri Department of Conservation, the Missouri Department of Natural Resources, and the United States Department of Energy (DOE) during the Weldon Spring Site Remedial Action Project (WSSRAP).

The WSSRAP was responsible for the environmental cleanup of former explosives production and uranium processing facilities that were located in this part of St. Charles County. As the trail winds through the woodlands and prairies of the Weldon Spring Conservation Area, the August A. Busch Memorial Conservation Area, and the Weldon Spring Site, historical markers depict what life was like for the people that lived and worked in this area, commemorate the lost towns of Howell, Hamburg, and Toonerville, and describe different phases of the WSSRAP cleanup.

## Groundwater Monitoring

The yellow posts that you may notice along the Katy Trail and in the general vicinity are protective posts called bollards which surround groundwater monitoring wells. These wells have been installed by the U.S. DOE for the purpose of monitoring groundwater in the area of the Weldon Spring Quarry. Groundwater monitoring will continue for the long-term and is designed to ensure the safety of the St. Charles County well field which lies to the south. Damaged wells can be reported by calling (636) 300-0012 during normal business hours or 1-877-695-5322 after hours.

A Weldon Spring Site groundwater monitoring well.

For more information, please visit the Weldon Spring Site Interpretive Center at 7295 Hwy. 94 South. The Interpretive Center is located approximately 3.8 miles north along Hwy. 94 and the Hamburg Trail.

## The Weldon Spring Site

**Site History**

From 1941 to 1945, as part of the World War II defense effort, the U.S. Army produced explosives at the Weldon Spring Ordnance Works, a 17,232-acre facility near Weldon Spring, Missouri. After the war, the government transferred ownership of some of this 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 and to St. Charles County and the Francis Howell School District. The Army retained the remainder for use as a training area. Currently, about 15,000 acres of the original Ordnance Works facility is owned by the Missouri Department of Conservation comprising the August A. Busch Memorial and Weldon Spring Conservation Areas.

The Weldon Spring Uranium Feed Materials Plant, Circa 1960.

In 1955, the Army transferred some 200 acres to the Atomic Energy Commission for construction of the Weldon Spring Uranium Feed Materials Plant. From 1957 to 1966, this plant processed uranium ore concentrates and a small amount of thorium.

**Site Cleanup**

Due to the hazards of the wastes that remained on site, in 1986 the DOE created a project office at the Weldon Spring Site and established a cleanup effort known as the Weldon Spring Site Remedial Action Project. Surface remediation activities concluded with construction of a disposal cell as a repository for 1.48 million cubic yards of waste. The disposal cell, which covers about 45 acres, was completed in 2001 and provides long-term isolation and management of the radioactively and chemically contaminated waste materials.

The completed disposal cell. A viewing platform at the top provides a panoramic view of the surrounding area.

For more information about the August A. Busch Memorial and Weldon Spring Conservation Areas, contact the August A. Busch Memorial Conservation Area, 2360 Hwy D, St. Charles, MO 63304.

## Mission

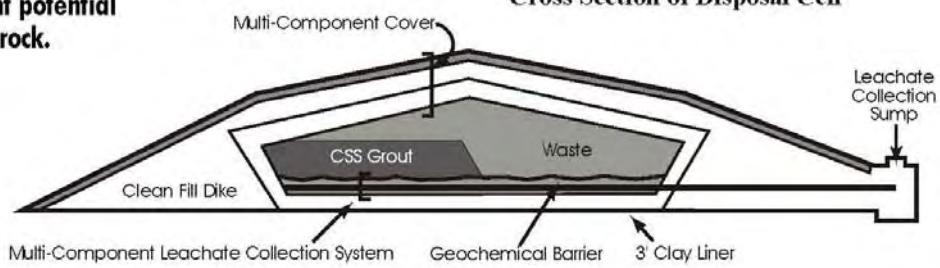
The disposal cell provides long-term isolation and management of waste from the former U. S. Atomic Energy Commission Uranium Feed Materials Plant and the former U. S. Department of the Army Ordnance Works.

## Cell Design

The disposal cell constructed at the Weldon Spring Site has been designed to deter the migration of contaminants and to remain stable for 1,000 years. To achieve these goals the following factors were considered:

- Exposed surfaces engineered to resist long-term erosion potential and a precipitation event greater than has occurred in the recorded history of the region.
- Side slopes and waste placement methods designed to withstand a Maximum Credible Earthquake (MCE) that considered the New Madrid fault system earthquake potential.
- A geographic location about one mile from the nearest known ground trace of a capable fault, and a general siting with no capable faults within a 10 mile radius appearing to have experienced movement in the past 8,000 years.
- Located in a geologically stable area with no significant potential for catastrophic collapse due to voids in the soil or bedrock.
- Located outside a designated 100-year flood plain.

Cross Section of Disposal Cell




## Cell Components

The cell consists of:

1. The base liner with leachate collection and removal systems designed to prevent leachate migration from the bottom of the cell.

2. The contaminated wastes, consisting of chemically stabilized and solidified (CSS) grout waste and untreated wastes have been placed and stabilized within the cell in a controlled and engineered manner to reduce settling, minimize volume, and retard radon emissions.

3. The clean-fill dike, constructed of compacted clay soil material, surrounds the disposal facility in order to resist erosion, limit infiltration of moisture into the waste, minimize radon emissions, and reduce long-term maintenance.

4. The cover systems armor the top of the cell protecting it from erosion, infiltration, bio intrusion, etc. It consists of multiple layers including (from bottom to top) an infiltration/radon barrier of clay, a geosynthetic liner, a gravel drain, sand filters, and a mixture of cobbles.