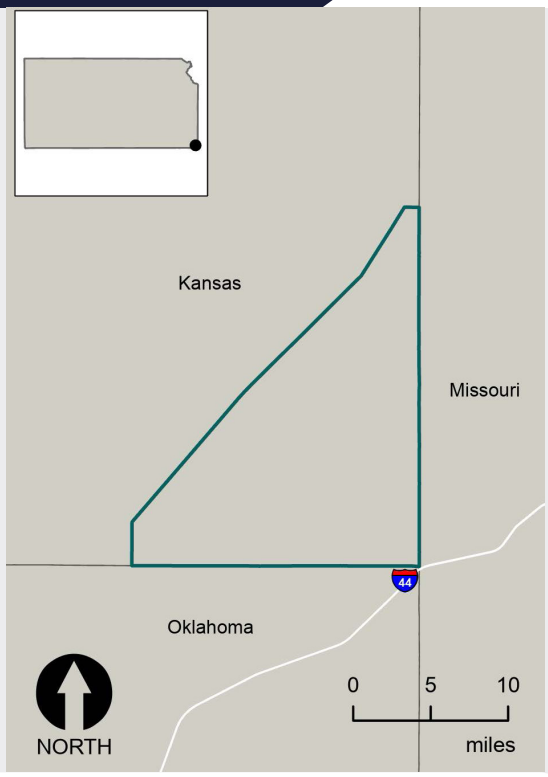
United States Environmental Protection Agency

Site Redevelopment Profile

Cherokee County Superfund Site

Parts of southeastern Kansas
Cherokee County, Kansas 66739



A map of the site in Kansas.

Property Overview

Size
115 square miles

Current Site Uses
- Mostly agricultural uses, as well as residential, commercial and industrial uses in the population centers that are part of the site.

Use Restrictions
- Restrictions are in place to prevent disruption of mining waste repositories.
- Additional restrictions will be developed as new repositories are constructed.
- Drilling of water wells on the site require a permit with the county health department.

Surrounding Population
19,362 people live in Cherokee County, Kansas (2020 Census)

Site History and Redevelopment Timeline

1970
More than a century of hard rock mining activities ended.

1983
EPA placed the site on the NPL.

1987 - 1996
EPA conducted numerous cleanup activities for various operable unit remedial actions, generally focused at the Galena, Kansas part of the site.

1997
EPA selected the remedy for the OU4 parts of the site; cleanup began soon after.

2006
EPA amended the selected remedy for the OU4 to include more mine wastes and address ecological risks.

2007
Cleanup activities continued on OU4.

2016
Cleanup at OU4 Work Area #1 began.

2017
First planting took place on remediated OU4 Work Area #1.

2018
First successful harvest from OU4 Work Area #1 and new crops planted.

History and Cleanup

Over a century of lead and zinc mining at the 115-square-mile Cherokee County Superfund site led to contamination of soil, sediment, surface water and groundwater with heavy metals. This area once was one of the largest lead- and zinc-producing regions in the world, playing an integral part in America's early industry as well as providing raw materials during World War I and World War II. After hard rock mining ended in 1970, large piles of mining wastes remained. Heavy metals in these wastes are a continuing source of surface soil and groundwater contamination in the Spring River and Tar Creek watershed.

EPA placed the site on the National Priorities List (NPL) in 1983. Cleanup focuses on consolidation and disposal of wastes to reduce human and ecological exposures. EPA's goals at the site are to protect human health and the environment, and to support opportunities for ecological restoration and economic development.

Cleanup began in 1987 with EPA implementing cleanup actions for various operable units (OUs), focusing on the Galena, Kansas, area of the site. After nearly 35 years of work at the site, over 12 million cubic yards of mining waste and over 2,700 acres of land have been cleaned up. This includes remediation of more than 700 residential yards and connection of over 500 homes to alternate sources of drinking water. EPA has led much of the work from a local field office, working with the state of Kansas, the Quapaw Nation and other parties through contractual agreements, administrative orders and cooperative agreements.

Redevelopment

As cleanup continues, EPA and site stakeholders have been exploring future use opportunities for parts of the site. For example, the 12-acre Work Area #1 within OU4 (known as the Treece subsite) highlights how consideration of beneficial future use informs the cleanup process. EPA selected the remedy for OU4 in 1997 and amended the remedy in 2006 to address more mine wastes and ecological risks.

With cleanup underway, the landowner for OU4 Work Area #1 inquired about returning the remediated property to agricultural production, consistent with surrounding land uses. Cleanup began at OU4 Work Area #1 in 2016 and has included clearing of vegetation to enable heavy equipment to access mine wastes and contaminated soils. The contaminated mine waste and soils were excavated and placed into an above-ground engineered repository, including a cap consisting of 18 inches of clean, locally sourced clay and top soil to support growth of the vegetative cap. The land was re-contoured to control run-off and enable the property to be returned to agricultural production.

The landowner drilled a non-certified winter wheat variety into the topsoil in the fall of 2017, resulting in a healthy stand of wheat grass that ripened in the spring of 2018. Since the seed was not commercially approved for market, the mature wheat crop was baled and stockpiled for future use as a soil amendment to facilitate revegetation of the repository cap at

View of the vegetative cover established over remediated mine lands.

Work Area #2. This straw material is worth about $500. The farmer then planted no-tillage short maturation soybeans into the remaining wheat stubble. At current market rates and assuming a stand of 30 bushels to the acre, this planting should yield about $2,800. In the future, the farmer may use this land and the repository area for planting to yield up to three crops bi-annually when in a wheat, bean, corn rotation plus the sale of wheat straw. Also, for the production of livestock forage, as pasture/ rangeland, or as habitat for pollinators and other key ecosystem species.

As cleanup of the Cherokee County Superfund site continues, new growth – both ecological and economic – is emerging. Native grasses, restored streams, wildlife habitat and agricultural practices are slowly revitalizing the barren rock and gravel scars left by the region's mining legacy. The successful agricultural redevelopment of this 12-acre property provides a closer look at the promise of new approaches and opportunities resulting from the cleanup of these former mine lands.

Ongoing cleanup at Sunflower Pit.

Harvest of wheat grass on the site in 2018.

For more information see: www.epa.gov/superfund-redevelopment

Contacts

For more information, please contact:

Chelsea Sebetich | (202) 566-1151
sebetich.chelsea@epa.gov

Tonya Howell | (913) 551-7589
howell.tonya@epa.gov

SUPERFUND REDEVELOPMENT PROGRAM