



## REGION 7

LENEXA, KS 66219

### MEMORANDUM

**SUBJECT:** Memorandum Documenting the Superfund Site Boundary Expansion for the Oronogo-Duenweg Mining Belt Superfund Site

**FROM:** Liz Blackburn, Remedial Project Manager  
Mining and Smelting Remediation Section

**THRU:** Robert D. Jurgens, Director  
Superfund and Emergency Management Division

**TO:** Site file

The purpose of this memo is to document the expansion of the site boundary for the Oronogo-Duenweg Mining Belt Superfund site to include all of Jasper County, Missouri, to address the long-term human health and environmental risks posed by historic mining, milling, and smelting activities throughout Jasper County (Attachment A & B). The site boundary expansion was conducted by the U.S. Environmental Protection Agency in partnership with the Missouri Department of Natural Resources (MoDNR), the Jasper County Commission, the Jasper County Health Department, and local city governments, and included extensive outreach efforts to solicit feedback from the impacted community and key stakeholders regarding their inclusion within the site boundary (Attachment C). The local community, city and county governments, and state and federal partners have expressed their support for the site boundary expansion (Attachment D).

The remedial investigations for the site created ten designated areas where contamination was initially found, with the flexibility to expand the site boundary in the future based on discovery of contamination outside the ten original designated areas. Under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, the site may include any area where a hazardous substance has come to be located (42 U.S.C. § 9601(9)). Several locations within the expanded boundary have been the subjects of past and current removal actions to address short-term, acute human health threats posed by lead and cadmium in residential yards. These include the Central Jasper County removal action and the Carthage City & Eastern Jasper County removal action. Through subsequent remedial and removal activities, the EPA confirmed the presence of contamination in surface soil and groundwater from historic

mining activities outside of the current site boundary that are associated with the site and exceed current acceptable human health and ecological risk levels, as detailed below.

The expanded boundary is based on new findings related to both removal and remedial actions at four of the site's operable units: OU1 – Mine and Mill Waste; OU2 – Residential Yards; OU3 – Mine Waste Yard Soils; and OU4 – Groundwater. Data relevant to the site boundary change includes:

- OU1 – Mine and Mill Waste: Elevated levels of lead and other metals have been identified at non-residential properties throughout Jasper County that are slated for re-zoning as residential properties under the Jasper County-wide Environmental Contamination Ordinance. As of 2023:
  - ~2,752 non-residential properties have been sampled throughout Jasper County and
  - ~983 properties exceed Action Levels throughout Jasper County, which includes six non-residential properties outside the pre-existing site boundary.

With expanded Memorandums of Understanding in newly incorporated Jasper County communities, as well as MoDNR's Inventory of Mines, Occurrences, and Prospects (IMOP) data indicating approximately ten new source areas existing outside of the former site boundary, the EPA anticipates a high likelihood of finding additional mine and mill waste source areas that will require remediation outside of the former site boundary.

- OU2 – Residential Yards and OU3 – Mine Waste Yard Soils: Within the past 16 months, the Missouri Department of Health and Senior Services (MDHSS) has referred 104 residential properties to the EPA for investigation of residential soil due to the identification of child residents with reported elevated Blood-Lead Levels (EBL). All of these properties were identified outside of the current site boundary, but within Jasper County. Approximately 21% of the residential properties sampled were eligible for remediation via removal action, as noted below:
  - 104 properties referred by the MDHSS with child resident EBLs outside the pre-existing site boundary;
  - 26 residential properties exceed 400 ppm lead outside the current site boundary; and
  - 22 residential properties meet conditions for a time critical removal action and have been remediated outside the current site boundary.
- OU4 – Groundwater: Elevated lead and other metals have been discovered in private, domestic drinking water well samples collected by the Jasper County Health Department under the Jasper County-wide Lead Health Education Cooperative Agreement between the MDHSS and EPA as a part of the site's institutional controls. This Cooperative Agreement has been in place since 2007. Since 2007:

- 742 total wells have been sampled inside and outside the current site boundary and
- 95 domestic private wells exceeded the Maximum Contaminant Level (MCL)/Action Level for lead outside of the current site boundary.

To address these risks and identify remaining risks throughout the county, the site boundary shall now include the entirety of Jasper County. The EPA will expand efforts to newly encompassed communities to conduct the ongoing, long-term investigation and cleanup actions to address the site risks necessary to protect human health and the environment. Any necessary changes to existing remedy decisions at the five operable units as a result of the boundary expansion will be assessed on a case-by-case basis, and the relevant decision document will be modified as appropriate.

The previous site boundary was located within an area bounded on the north by the township line between Townships 29 and 30 North; on the south by the county line between Jasper and Newton Counties, including portions of Section 24 Township 27 North Range 34 West and Sections 19 and 20 Township 27 North Range 33 West in Newton County; on the west by the state line between Missouri and Kansas; and on the east by the range line between Ranges 31 and 32 West (Attachment A).

The expanded site boundary now encompasses the entire county boundary of Jasper County, including but not limited to the cities of Carthage, Avilla, La Russel, Reeds, Sarcoxie, Fidelity, Carytown, and Jasper, as well as the aforementioned portion of Newton County, which remains unchanged (Attachment B).

Attachments:

**Attachment A** – Comparison map of the original and expanded Oronogo-Duenweg Mining Belt Superfund site boundaries, including the Central Jasper County Lead Removal Site Boundary and Carthage & Eastern Jasper County Lead Removal Site Boundary

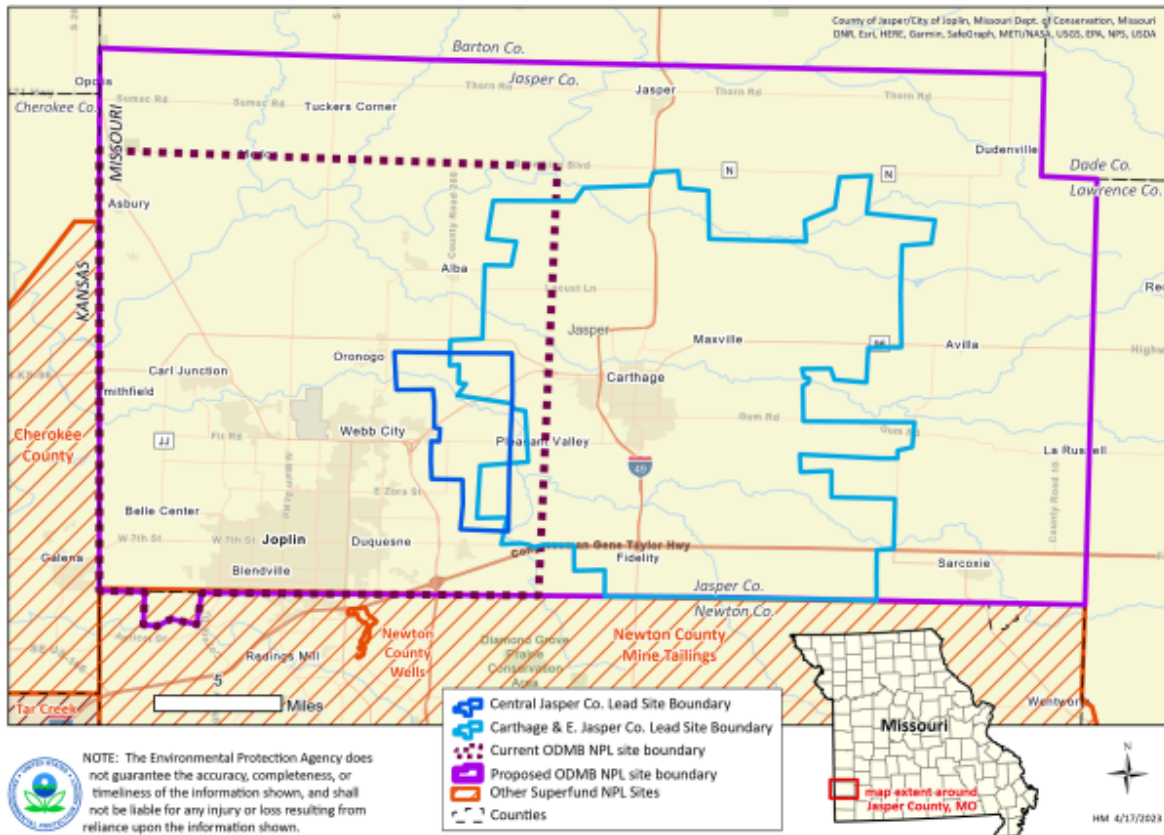
**Attachment B** – Final Oronogo-Duenweg Mining Belt Superfund site boundary (Jasper County and small portion of northwest Newton County)

**Attachment C** – Press related to the community outreach conducted by the EPA on the proposed Superfund site boundary expansion

**Attachment D** – Letter of support from MoDNR for the Oronogo-Duenweg Mining Belt Superfund site boundary expansion

**Attachment A**

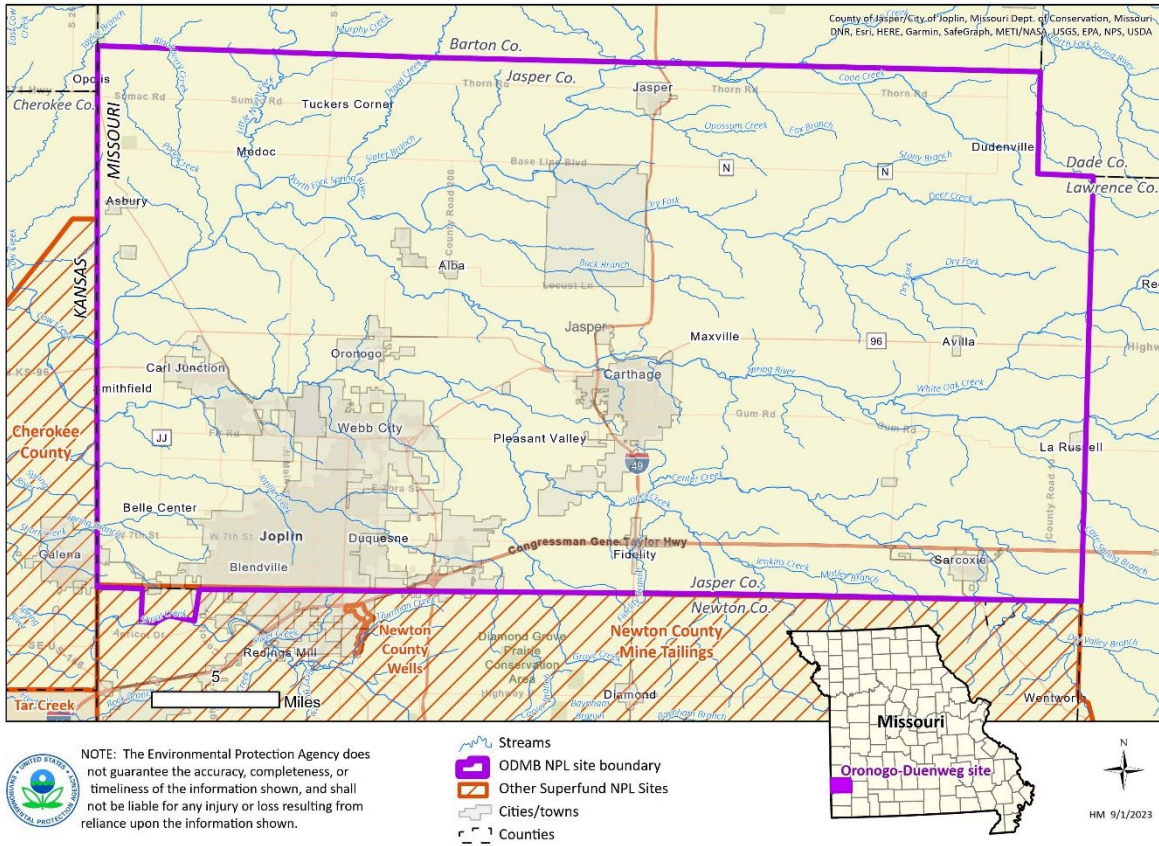
## Oronogo-Duenweg Mining Belt Superfund Site Boundaries with Jasper County/Carthage Lead Sites



Note: Attachment A illustrates the initial focus on the western portion of Jasper County (red dotted line titled “Current ODMB NPL Site Boundary”) and the subsequent investigations in the eastern portion of the county which led to the expansion the Superfund site boundary. Investigations and removal actions (blue removal site boundaries titled “Central Jasper Co. Lead Site Boundary” and “Carthage & E. Jasper Co. Lead Site Boundary”) show the spread of sampling efforts to the east over time where mining related contamination was subsequently confirmed. The new Superfund site boundary (pink line titled “Proposed ODMB NPL site boundary”) incorporates both the western and eastern portions of the site to address legacy mining related impacts throughout Jasper County.

**Attachment B**

## Oronogo-Duenweg Mining Belt (ODMB) Superfund Site Boundary (Jasper County wide)



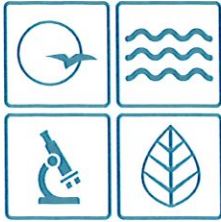
Note: Attachment B illustrates the final Oronogo-Duenweg Mining Belt Superfund site boundary.

**Attachment C**



- **The Joplin Globe – EPA details planned cleanup in Carthage, eastern Jasper County**  
[https://www.joplinglobe.com/news/business/epa-details-planned-cleanup-in-carthage-eastern-jasper-county/article\\_f5455aac-e309-11ed-96b9-174784a62773.html](https://www.joplinglobe.com/news/business/epa-details-planned-cleanup-in-carthage-eastern-jasper-county/article_f5455aac-e309-11ed-96b9-174784a62773.html)
- **EPA to host open house in Carthage to discuss pending mining cleanup**  
[https://www.joplinglobe.com/news/business/epa-to-host-open-house-in-carthage-to-discuss-pending-mining-cleanup/article\\_970deb98-d4e5-11ed-99b5-c7a21ea0b53b.html](https://www.joplinglobe.com/news/business/epa-to-host-open-house-in-carthage-to-discuss-pending-mining-cleanup/article_970deb98-d4e5-11ed-99b5-c7a21ea0b53b.html)
- **EPA Superfund update in Jasper County – KNSF-TV/KODE-TV, 3.21.23**  
 Cleaning up mine waste has led to a transformation just Southwest of 26th and McClelland in Joplin.  
<https://www.fourstateshomepage.com/local-news/jasper-county-news/epa-superfund-update-in-jasper-county/>
- **KODE-TV – Broadcast clip – May 19, 2023 – As the EPA expands its focus into mining contamination in Southwest Missouri -- the push is on to get local communities involved in the process.**  
[https://archive.tveyes.com/18120/518041-35086/acf47fcf-7345-497e-9dd6-7ed946a9a886/KODE\\_05-19-2023\\_17.06.54.mp4](https://archive.tveyes.com/18120/518041-35086/acf47fcf-7345-497e-9dd6-7ed946a9a886/KODE_05-19-2023_17.06.54.mp4)
- **EPA looks to Expand Jasper County Superfund Site – KOAM-TV, 3.21.23**  
 The Environment Protection Agency is giving an update regarding the clean-up around Jasper County as well as asking to expand the borders of the super fund site.  
[https://www.koamnewsnow.com/lifestyle/epa-looks-to-expand-jasper-county-superfund-site/article\\_718c3e30-c818-11ed-994c-07858daecf55.html](https://www.koamnewsnow.com/lifestyle/epa-looks-to-expand-jasper-county-superfund-site/article_718c3e30-c818-11ed-994c-07858daecf55.html)

**Attachment D**  
MODNR LETTER OF SUPPORT



**MISSOURI**  
DEPARTMENT OF  
NATURAL RESOURCES

**Michael L. Parson**  
Governor

**Dru Buntin**  
Director

July 28, 2023

Bob Jurgens, Director  
Superfund & Emergency Management Division  
U.S. EPA, Region VII  
11201 Renner Blvd.  
Lenexa, KS 66219

Dear Bob Jurgens:

The Missouri Department of Natural Resources has received and reviewed the March 28, 2023, letter regarding the proposed site boundary expansion for the Oronogo-Duenweg Mining Belt Site (Site), as presented by the U.S. Environmental Protection Agency (EPA).

Expanding the current site boundary to encompass the entire Jasper County will affect all of the current OUs for the site:

- OU1, Mine and Mill Waste;
- OU2, Residential Yards;
- OU3, Mine Waste Yard Soils;
- OU4, Groundwater; and
- OU5, Spring River Basin.

The Department understands that the site boundary expansion will result in a significant increase in the scope of Superfund investigation and response work and in the costs to address the site. The affected costs include the State's 10% match of fund-financed remedial actions and 100% Operation and Maintenance. The Department supports EPA's decision to expand the Oronogo-Duenweg Mining Belt Superfund site boundary; and is interested in learning how EPA intends to address the new portion of the site considering ongoing and completed investigations, decisions, and response actions at the respective operable units.

If you have any questions or comments, please contact me at 573-508-9182, or you may contact Amanda Branson of the Department's Environmental Remediation Program by mail at P.O. Box 176, Jefferson City, MO 65102-0176, by phone at 573-751-9021, or by email to [amanda.branson@dnr.mo.gov](mailto:amanda.branson@dnr.mo.gov). Thank you.

Sincerely,

ENVIRONMENTAL REMEDIATION PROGRAM

Justin Buckler  
Director

JB:ab

