

U.S. ENVIRONMENTAL PROTECTION AGENCY
FINAL POLLUTION REPORT
LIBBY ASBESTOS SITE – OUs 1, 2, 4, 5, 7, and 8

Date: April 22, 2016
Site Name: Libby Asbestos Site
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POLREP No.: OUs 1, 2, 4, 5, 7 and 8
Site No: 08BC
Response Authority: CERCLA Removal Action
CERCLIS No.: MT0009083840
NPL Listing: 10/23/2002
Action Memorandum: 05/23/2000
Action Memorandum Amendment: 07/20/2001
Action Memorandum Amendment: 05/02/2002
Action Memorandum Amendment: 05/15/2006
Action Memorandum Amendment: 06/27/2006
Action Memorandum Amendment: 09/24/2008
Action Memorandum Amendment: 06/17/2009
Action Memorandum Amendment: 08/04/2009
Action Memorandum Amendment: 03/14/2012
Start Date: 06/01/2000
Completion Date: 04/11/2016

I. BACKGROUND

1.1.1 Incident Category

Time Critical, Environmental Protection Agency (EPA) Fund-Lead. Prior to settlement with W. R. Grace on March 11, 2008, it was potentially responsible party (PRP)-Lead.

1.1.2 Site Description

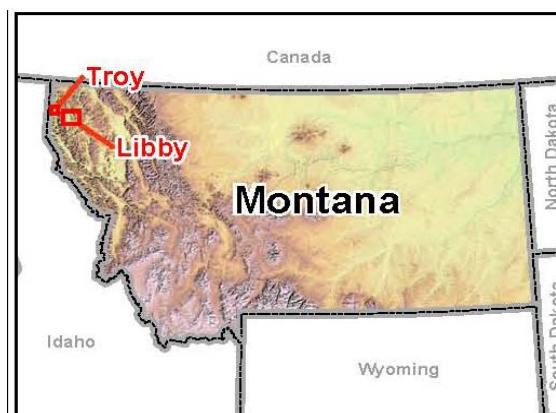
The Libby Asbestos Superfund Site (Site) is located in and around the town of Libby, Montana. Libby, Montana is also the location of the former Libby Vermiculite Mine (Mine), where vermiculite was mined as early as the 1920s by the Universal Zonolite Company. In 1963, the W.R. Grace & Co. – Conn. (Grace) acquired the property and continued operations until September 1990. During the operations at the Mine, vermiculite and vermiculite-containing soil were dispersed throughout the towns of Libby and Troy and used by residents as various soil amendments and additives. Vermiculite was also used as insulation and in building materials.

The Site is comprised of eight operable units (OUs), six of which are addressed under this Final Pollution Report (POLREP). Specifically, the OUs to be addressed are OU1, the former Export Plant; OU2, the former Screening Plant; OU4, residential, commercial, industrial and public properties in and around Libby; OU5, 400 acres of industrial property (former Stimson Lumber Mill), OU7, residential, commercial, and public property in and around the Town of Troy (about 20 miles east of Libby); and OU8, U.S., State, and County route rights-of-ways within OUs 4 and 7. OU 3, the former Libby vermiculite mine and forested areas, was not included in this report because a response action was not conducted at that site. OU6 is not included in this report as BNSF Railroad is the responsible party for investigation and cleanup of that OU. Final POLREPs for many OUs have been issued (see Section II below); however, since these Final POLREPs were issued, additional Time Critical Removal Actions have been conducted, which are documented in this Final POLREP.

1.1.2.1 Location

The Site is located in and around the towns of Libby and Troy, Montana. Libby is the county seat of Lincoln County and is in the northwest corner of Montana, about 35 miles east of Idaho and 65 miles south of Canada (Exhibit 1-1).

Exhibit 1-1. Site Location Map



1.1.2.2 Description of Threat

A public health emergency was jointly declared for the Site on June 17, 2009 by the U.S. Environmental Protection Agency (EPA) Administrator and the U.S. Department of Health and Human Services Secretary. Removal actions performed by EPA indicate the urgency of the situation. Unique circumstances at the Site include not only the level of cumulative exposure and multiple pathways but also the fact that structures at the Site contain contaminated building materials that were not inspected, packaged, labeled, regulated, or sold as commercial products. Based on this information, it was reasonable to evaluate remedial alternatives that address releases or potential releases from disturbance of Libby amphibole asbestos (LA)-contaminated building materials and other impacted materials such as LA-contaminated soils.

Since 1999, EPA has conducted sampling and response action activities to address highly contaminated areas in the Libby Valley. The EPA investigation was initiated in response to media articles, which detailed extensive asbestos-related health problems in the Libby population. While at first the situation was thought to be limited to those with direct or indirect occupational exposures, it soon became clear there were multiple exposure pathways, and many persons with no link to mining-related activities were affected.

The contaminant of concern (COC) for the response actions is LA. Asbestos fibers are odorless and tasteless and vary in length, structure, and chemical composition. Fibers are microscopic and environmentally persistent. They do not evaporate, burn, or dry out from heat or degrade in water. The toxicity of different types of asbestos fibers varies, but chronic and acute exposure to any one of them potentially can be fatal. The adverse effects of LA is documented in the *Site-Wide Human Health Risk Assessment for the Libby Superfund Report* (CDM Smith 2015). While some chrysotile asbestos is likely present, it is not due to Site-related contamination and is not considered a COC. EPA actions at the Site have not focused on the removal of chrysotile or other forms of asbestos, only LA.

II. ACTIONS SUMMARIZED IN THIS POLREP

The response action activities completed at the Site include the removal of vermiculite-containing insulation (VCI), LA-contaminated soil, LA-contaminated dust, and LA-contaminated vermiculite-containing building materials from residential, commercial, and industrial properties. The VCI encountered in the structures is typically found in attics where residents placed it for insulation. VCI can also be found in interior or exterior walls due to it being used for insulation or from it leaking into the wall cavity from the attic. It may also be located in soils in unfinished crawl spaces. The LA-contaminated soil encountered at the properties is typically due to imported vermiculite for a variety of reasons, including amending soil in flowerbeds and gardens, leveling low spots, and backfilling utilities. It also may have been spread in yards from other sources. LA-contaminated dust encountered in the structures is due to a variety of reasons, including VCI leaking into the living spaces from the attic or walls and LA tracked in from the outdoor source locations discussed above.

After the Site was added to the NPL in 2002, response activities intensified. Listed below are the major activities conducted since listing:

- **2003.** Completed the Contaminant Screening Study or CSS (over 1,200 properties inspected or sampled), completed 157 residential or commercial cleanups and the city boat ramp cleanup, and published interim cleanup standards and protocols. ATSDR released the final version of its report, *Public Health Assessment for the Libby NPL Site, Operable Unit 4, Town of Libby and Affected Libby Valley Residential and Commercial Properties*. The report concluded, in part, that the citizens of Libby were exposed to hazardous levels of asbestos and had elevated levels of disease and death from exposure to asbestos. It also recommended, in part, that EPA conduct a toxicological investigation (toxicity assessment) and epidemiology studies.
- **2004.** Completed 170 residential or commercial cleanups and cleanup of the BNSF railyard and Flyway property. Announced that Troy will be included in the cleanup.
- **2005.** Completed 225 residential or commercial cleanups, conducted special sampling to verify protectiveness of cleanup, initiated RI/FS, and began initial coordination for 2006 Troy investigations.
- **2006.** Completed 216 residential or commercial cleanups and initiated the outdoor ambient air sampling program.
- **2007.** Completed 160 large and complicated cleanups; continued outdoor ambient air sampling program; initiated the residential activity-based sampling (ABS) program, Environmental Resource Specialist (ERS) program, and sampling in Troy; identified toxicity studies for risk assessment; and investigated several creeks in the Libby and

Troy areas to evaluate the presence and extent of LA in materials used for the construction of riprap.

- **2008.** Completed 143 residential or commercial cleanups in Libby and 6 in Troy; conducted initial OU4 residential ABS; continued toxicity studies for risk assessment, sampling in Troy, and investigations at all OUs; investigated several creeks in the Libby and Troy areas to evaluate the presence and extent of LA in materials used for the construction of riprap; and conducted response actions, resulting in the removal of over 7,000 cubic yards (yd³) of material from the creeks.
- **2009.** Completed 159 residential or commercial cleanups and sampling in Libby and Troy; conducted removals at Cabinet View Golf Course, Pipe Creek, and Libby Creek; and completed various investigations. Large scale ABS program was conducted for the Libby Schools and school-owned properties.
- **2010.** Completed 201 residential and commercial removal actions in Libby and Troy, completed a removal action for the Historic Hotel Libby, signed the Records of Decision (RODs) for OU1 and OU2, continued RIs for OU4, and revised the community engagement plan.
- **2011.** Completed 141 residential or commercial cleanups in Libby and submitted draft LA-specific toxicity values to the Scientific Advisory Board for review. Completed soil removal at the former Expansion Plant and performed an interior cleaning of areas impacted by land owner removal of asbestos-containing roof materials in the Central Maintenance Building at OU5.
- **2012.** Completed 174 residential and commercial cleanups (74,400 yd³ of impacted soil), characterized LA contamination in forested areas in the Libby valley, and finalized remediation of OU1. Completed soil removal at the Port Authority Building in the area associated with revegetation demonstration plot; conducted soil removal in the former nursery area; and removal of VCI and interior cleaning at the Central Maintenance Building at OU5.
- **2013.** Completed 103 residential and commercial cleanups (34,000 yd³ of soil), completed investigations at more than 700 properties, celebrated Riverfront Park and the cleanup and redevelopment of the former Export Plant, and closed the Montana Department of Environmental Quality (DEQ) office in Troy to streamline operations from the Libby office. Completed soil removal of the former tree nursery at OU5.
- **2014.** Completed 79 residential and commercial cleanups, finalized RIs at 5 OUs, completed ABS, completed investigations at over 700 properties, completed the toxicity assessment, finalized the baseline ecological risk assessment (BERA) and issued the draft Site-wide human health risk assessment (HHRA) and FS reports, and

continued to support the City-County Board of Health with implementation of the Asbestos Resource Program (ARP).

- **2015.** Completed 110 residential and commercial cleanups, completed ABS, completed investigations at 500 properties, finalized Site-wide HHRA and FS reports, completed the initial five-year review and continued to support the City-County Board of Health with implementation of the ARP. To date, more than 2,200 residential and commercial cleanups and approximately 7,100 investigations have been completed.
- **2016.** Selected remedy in the ROD (EPA 2016) on February 8, 2016. Remedial action started on April 11, 2016.

The volumes of material removed under these efforts was approximately 1,162,000 yd³ of which approximately 1,087,000 cubic yards were transported back to the Mine and 75,000 yd³ were disposed of at the Class IV asbestos cell at the Libby Class II landfill (Landfill). The landfill waste includes vermiculite-containing insulation, building materials, and some contaminated soil.

The following POLREPs were previously issued for the Site.

- Initial/Interim Pollution Report (POLREP) for the Rainy Creek Floodplain Removal Action at Operable Unit 3 (OU3), June 13, 2013
- OU 6, Burlington Northern Santa Fe (BNSF) Rail Yard, Final Report, May 14, 2012
- Flower, Granite & Callahan Creeks, Initial and Final Report, June 15, 2009
- Stimson Mill, Final Report, October 7, 2005
- Site BC (Export and Screening Plants), May 27, 2005
- Stimson Central Maintenance, Initial Report, May 9, 2005
- Flyway Property, OU 2, Final Report, February 18, 2005
- Export Plant, OU 1, Final Report, March 22, 2004
- BNSF Railyard, OU 6, Initial Report, September 29, 2003
- Site BC (Export and Screening Plants), Progress Report, June 22, 2003
- Export & Screening Plants, Site BC, Progress Report, October 28, 2002
- Libby Asbestos Site, Progress Report, October 17, 2001
- Libby Asbestos Site, Progress Report, May 22, 2001
- Export & Screening Plants, Progress Report, May 22, 2001
- Export & Screening Plants, Site BC, Progress Report, November 29, 2000
- Export & Screening Plants, Initial Report, August 12, 2000

The removal volumes and associated costs reported in those earlier POLREPs are included in this Final POLREP.

III. ENFORCEMENT

OU3 is being cleaned up by the PRP, Grace; it is not part of this POLREP. Grace will be preparing removal reports and providing them to EPA, as the cleanup of OU3 is completed.

Although OU6 is included in the February 2016 ROD, the PRP, BNSF, is responsible for implementing the ROD for that OU. The Final POLREP for OU6 was issued in May 2012.

IV. CURRENT SITUATION

The ROD for the Operable Units 4, 5, 6, 7 and 8, was signed on February 8, 2016. The remedy selected in the ROD is based on the administrative record. The ROD was issued by the EPA Region 8, the lead agency, and the DEQ. DEQ provided Concurrence with Reservations for EPA's selected remedy for the Libby Asbestos Superfund Site Operable Units 4 through 8. DEQ concurred that the selected remedial action will be protective, but only after development and implementation of robust institutional controls to protect the remedy, establishment of a comprehensive operations and maintenance program to maintain remedy integrity, and creation of an EPA-lead rapid response program to address newly-discovered occurrences of LA or to address LA where changes in land use require a more stringent cleanup level. As noted above, the cleanup of OU6 is being conducted by the PRP.

The remedial action for OU1 was completed in July 2013 and in May 2012 for OU2. OU1 and OU2 are currently in Operation and Maintenance (O&M) status.

As outlined in the ROD, Land Use Controls (LUCs) and Institutional Controls (ICs) are currently being developed for long-term management of the Site.

V. COST INFORMATION

The costs associated with cleanup efforts for all OUs combined within this POLREP, rounded to the nearest dollar is \$514,057,000.

VI. DISPOSITION OF WASTES

All debris and soil contaminated with asbestos were disposed of at either the Landfill or transported back to the Mine, as noted earlier. Only soils that can be used for beneficial uses have been transported to OU3, and these soils are not considered waste within OU3.

VII. REFERENCES

CDM Smith 2015. *Site-Wide Human Health Risk Assessment Libby Asbestos Superfund Site, Libby, Montana*: CDM Federal Programs Corporation. Report prepared for U.S. Environmental Protection Agency. Final - November.

EPA. 2016. *Record of Decision for Libby Asbestos Superfund Site, Libby and Troy Residential and Commercial Properties, Parks, and Schools, Transportation Corridors, and Industrial Park, Operable Units 4 through 8, Lincoln County, Montana*. February 8.