



# Background

The Libby Asbestos site is located in Libby and Troy in Lincoln County, Montana. In the early 1920s, the Zonolite Company began vermiculite ore mining operations in Libby. Vermiculite from the Libby mine, bought by W.R. Grace in 1963, was contaminated with a toxic and highly friable form of asbestos called tremolite-actinolite series asbestos, often called Libby Amphibole asbestos (LA).



# Chronology

- Dry milling through 1985
- Wet milling 1985-1990
- WR Grace mine shuts down – 1990

# Libby Site Cleanup Chronology

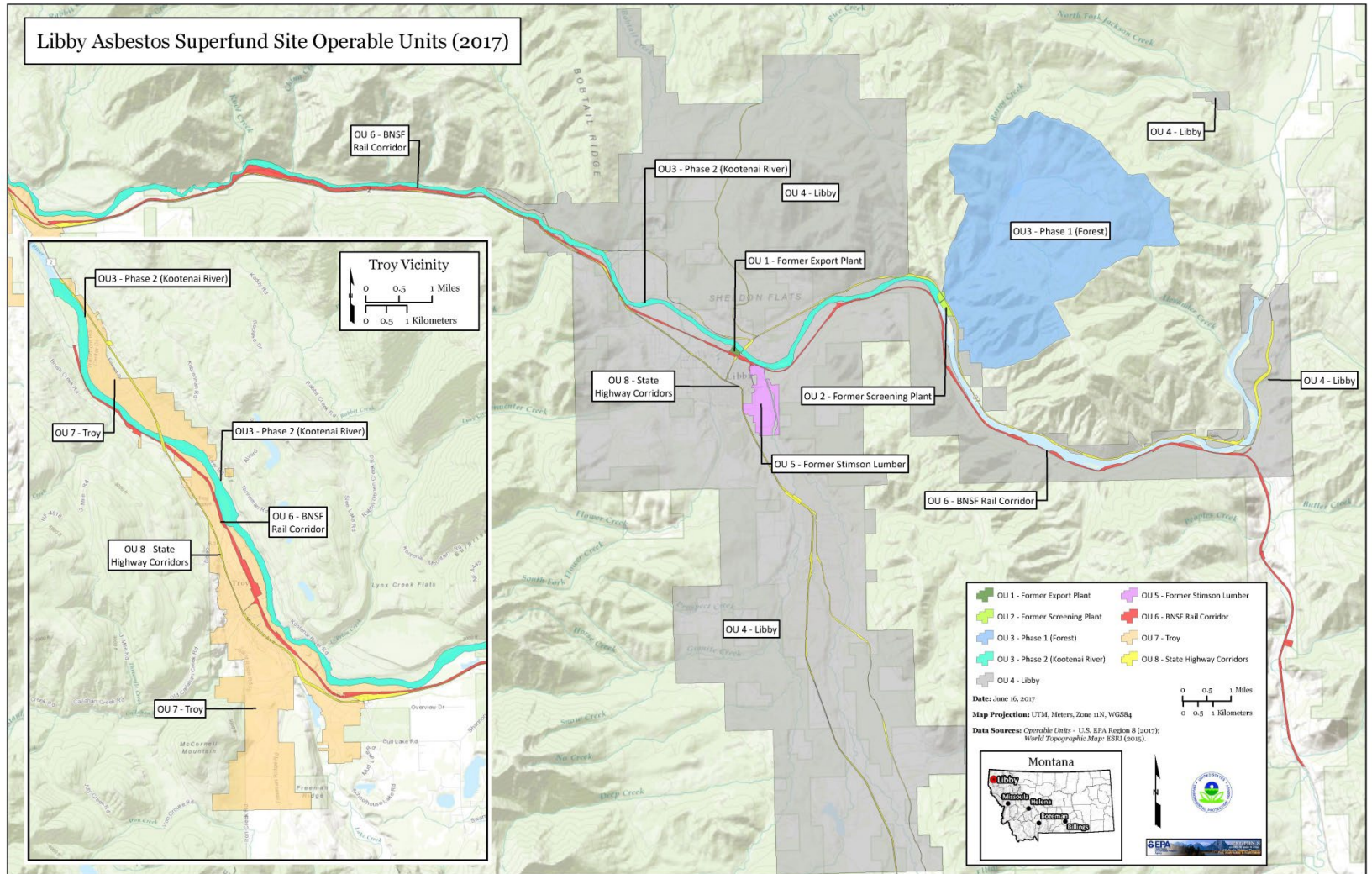
Date	Event
November 1999	EPA Emergency Response program conducts initial site visit.
1999-2002	EPA Emergency Response program conducts initial removal actions to address most heavily contaminated areas.
2002	Site listed on NPL (silver bullet).
2007	EPA entered into AOC with WR Grace for OU3 RI/FS.
2008	EPA awarded \$250 million settlement from WR Grace to fund residential/commercial cleanups.
2009	Public Health Emergency declared – HHS/EPA.
2010	RODs signed for OU1 Riverfront Park & OU2 Screening Plant
2016	Sitewide ROD to address OUs 4 through 8
2017	To date investigated 8100 properties and completed 2485 cleanups
2018	Cleanup of remaining residential and commercial properties expected to be completed.

# Operable Units (OUs)

Operable Unit	Description	Status
OU1	Riverfront Park (former Export Plant)	Cleanup Complete. O&M ongoing.
OU2	Former Screening Plant	Cleanup Complete. O&M ongoing.
OU3	Former WR Grace Mine	RI/FS underway.
OU4	Residential/Commercial Properties in Libby	Estimated completion of cleanup in 2018.
OU5	Lincoln County Port Authority 400-acre industrial park (former Stimson Lumber Mill)	Cleanup complete. O&M transition in progress.
OU6	BNSF Railroad Corridor	Consent Decree negotiations underway
OU7	Residential/Commercial Properties in Troy	Estimated completion of cleanup in 2018.
OU8	Highways/Roadways	Remedial action complete. Transition to O&M underway.



# Site Map



# OUs 1 and 2

- RODs signed in 2010
- Cleanup complete
- First OUs to be in Operations and Maintenance (O&M)
- DEQ will begin Annual Site Inspections as part of O&M in spring 2018
- Evaluating possibility of partial deletion for OUs 1 and 2

# OU1 – Former Export Plant

- Processing plant
  - Ore was exfoliated by rapid heating
  - Buildings used to bag and export milled ore
  - Transported via rail or truck





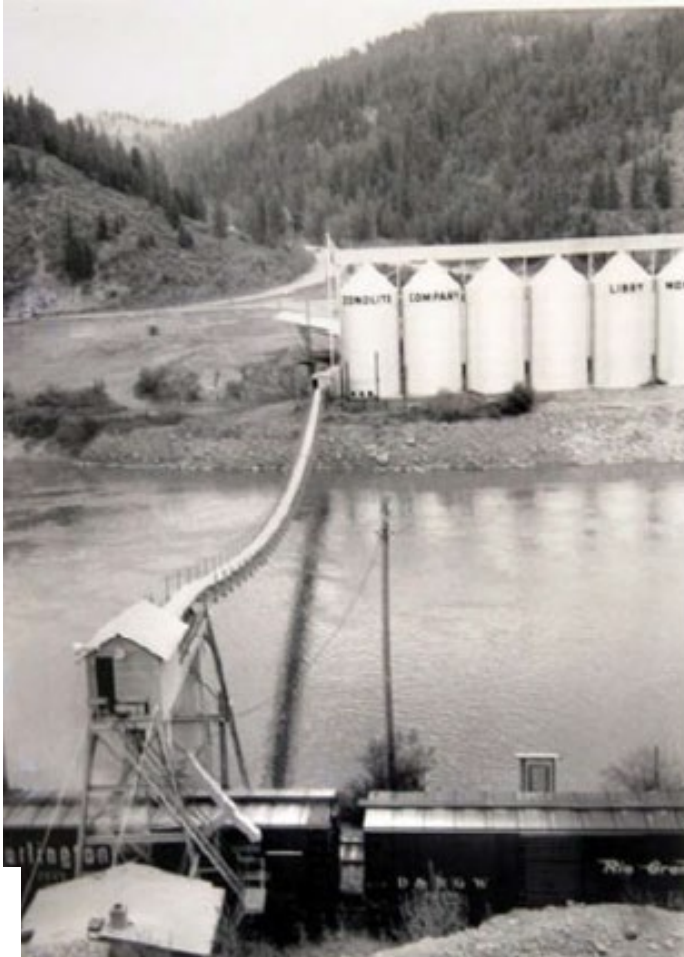
# OU1 – Riverfront Park

- Transformed into Riverfront Park



# OU2 – Former Screening Plant

- Conveyor belt system



◆ Mine Site Entrance

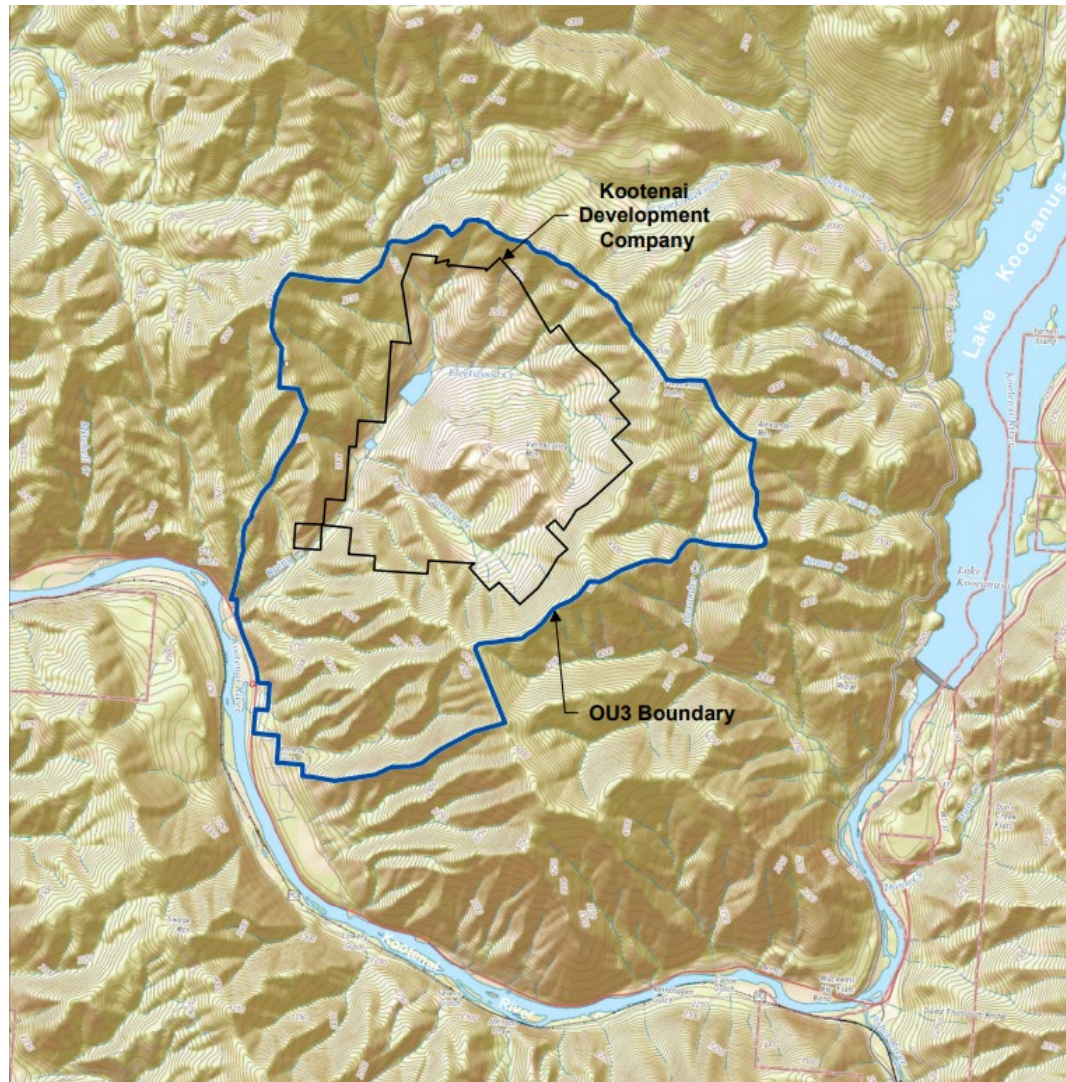


# OU2 – Flyway Property & Residential Property

- Extensive cleanup on residential property
- Environmental covenant on Flyway property
  - Owned by Kootenai Development Company (KDC)—a subsidiary of WR Grace



## OU3 – Former Libby Vermiculite Mine





# OU3 – Former Libby Vermiculite Mine

Mountain top removal

Tailings dam and  
impoundment contain 4  
million cy of asbestos tailings

Active MDEQ mine permit  
for small portion

Active DNRC Dam Safety  
Permit for tailings dam



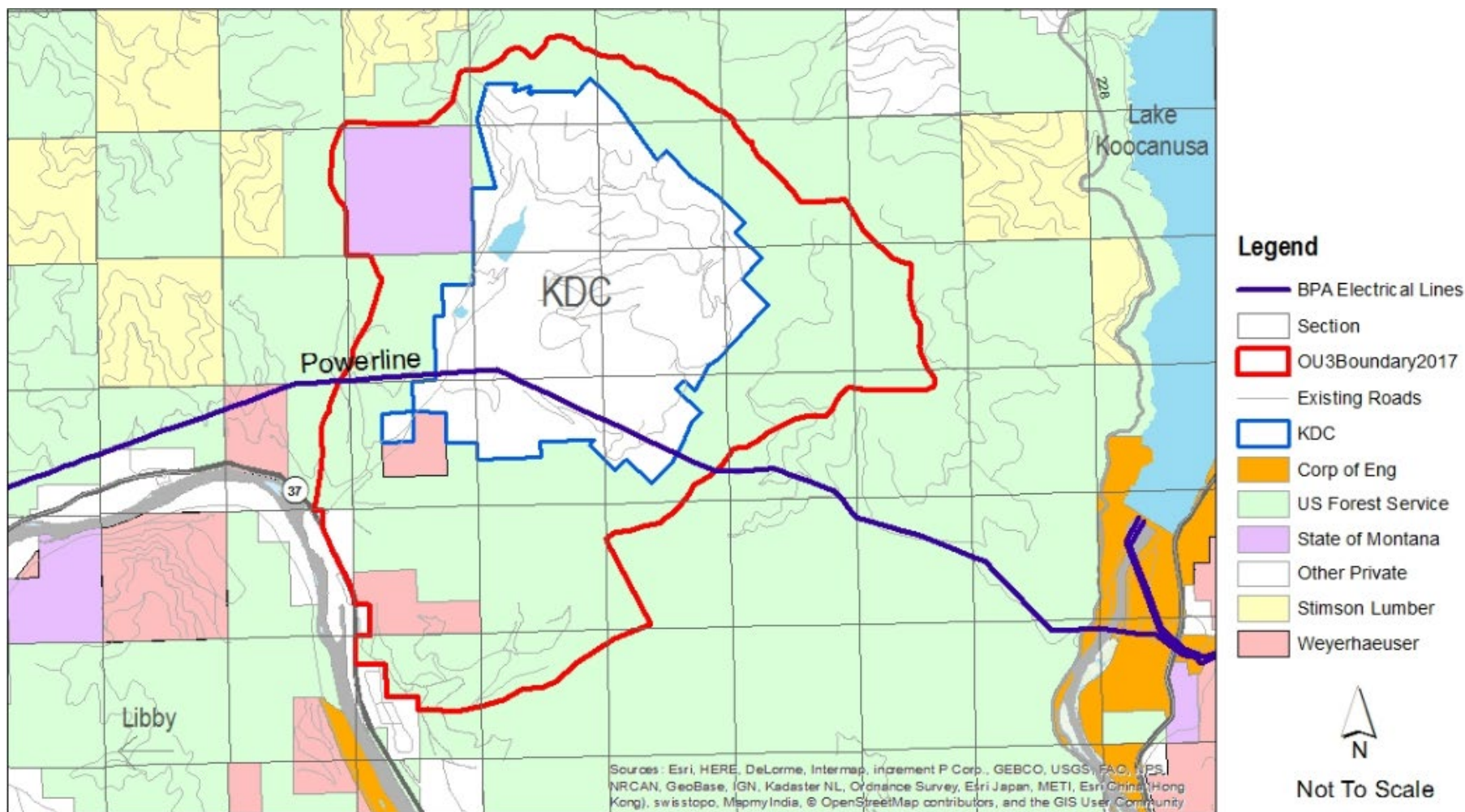
# OU3 – Former Libby Vermiculite Mine

10,000 acres of asbestos-contaminated forest (USFS, private, State)

Rainy Creek watershed and Kootenai River  
(extent to be defined)

WR Grace conducting RI/FS under AOC

# OU3 – Former Libby Vermiculite Mine



# OU3 FS conducted in 2 phases

- RI completed
- Phase I – Forested areas. Phase I ROD projected for 2019
- Phase II – Former mine area and waterways. Phase II ROD projected for 2020
- Schedules being coordinated with DNRC for dam safety work



# OU3 Phase II

- Mine Maintenance  
(tailings dam)
  - Interim coffer dam in tailings impoundment – 2018
  - Replace tailings dam principal spillway – 2020
- CERCLA
  - Waste rock piles
  - Surface water contamination
  - Tailings dam



# OU3 Issues

- Tailings dam instability
  - Spillway slowly collapsing
  - Interim fix scheduled 2018 – coffer dam
  - DNRC is overseeing tailings dam investigations
- Wildfire
  - Elevated asbestos exposures to firefighters in OU3
  - EPA, in coordination with Lincoln County, USFS, and State of Montana have formulated a communication and response plan (LARP)
- Commercial logging
  - Elevated exposures to loggers

# Site-wide ROD in 2016

- Addressed OUs 4, 5, 6, 7, and 8

# OU4 and OU7, Libby and Troy

- Residential and commercial property cleanups
- Cleanup began with removal actions in 1999
- Public Health Emergency declared in 2008, allowing access to homes and funding for health studies
- Site-wide ROD in 2016



# Interior Cleanups





# Exterior Cleanups



# OU4 and 7, Libby and Troy

- Last-call for investigations and cleanups in 2017
- To date, investigated 8100 properties and completed 2485 cleanups
- Cleanup of last 65 properties in 2018
- Anticipate beginning of O&F phase in 2018



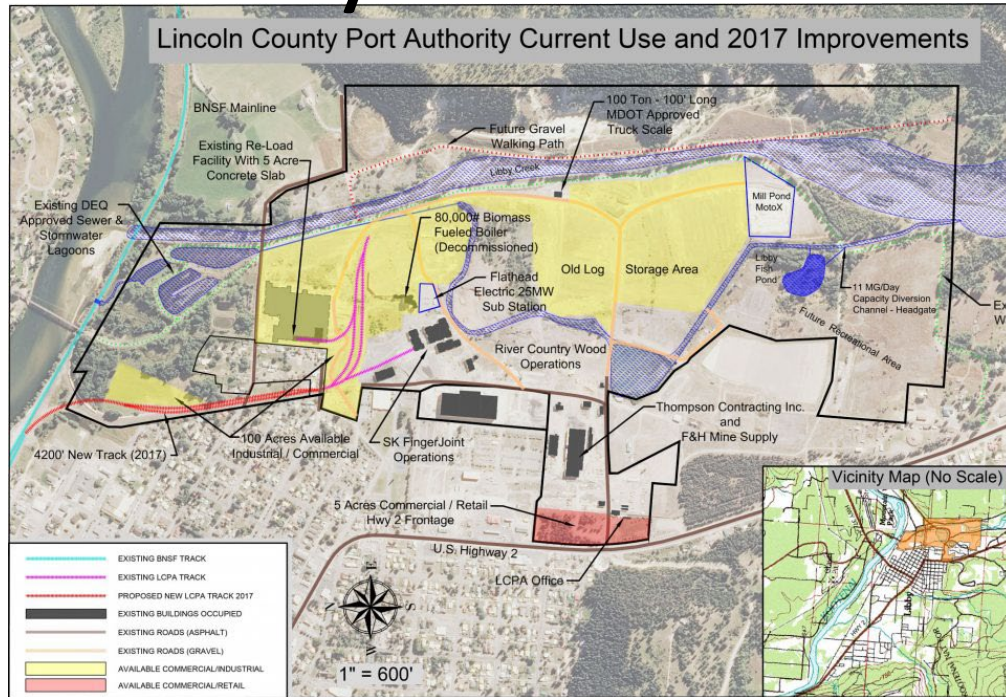
# OU5 – Industrial Park

- Historic maps show the location of a Zonolite Company processing operation at the edge of the former Stimson lumber mill.
- This older processing plant was taken offline and demolished sometime in the early 1950s.



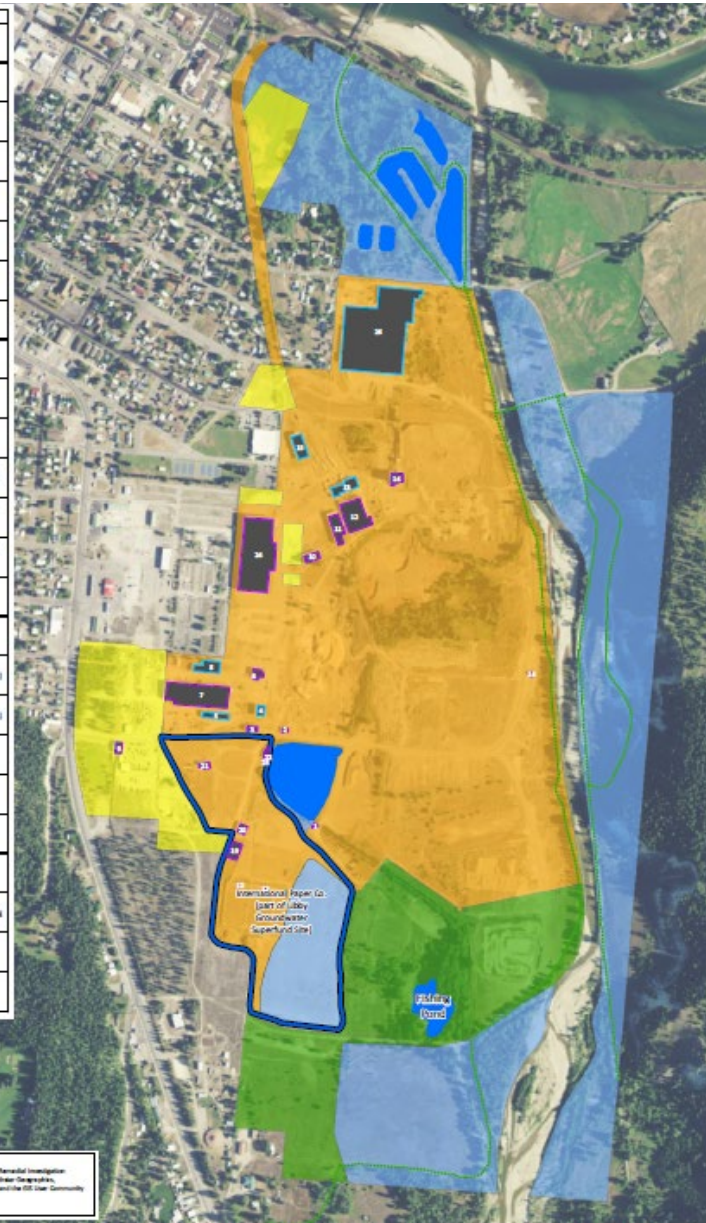


# Libby OU5 – Kootenai Business Park



32	Build. Name
1	Chemical Pump House
2	Electric Pump House
3	Electric Motor Shed
4	Wagner Shed
5	Steel Storage
6	Rise Hall
7	Central Maintenance
8	Track Barn
9	Main Office
10	Pipe Shop
11	Shed 12
12	Finger Lumber Processing Plant
13	Storage and Locomotive Shed
14	Power House and Power House Office
15	Axlehouse
16	Log Yard Scale House
17	TU Leachate (Building #1)
18	TU Leachate (Building #2)
19	Tank Farm Building
20	Wrecker Building
21	Intermediate Injection Building
22	Office/Laboratory
23	Chemical Storage Building
24	Former Welding Shop - Constructed after Abatement
25	Former Plywood Plant

NOTES:  
 Prepared by: KSA Engineering, Inc. - OUI Remedial Investigation  
 Search Domain: Air, Surface Water, Soils, Surface Sediments,  
 CSM (Surface Soils, UGSS, UGSS, Aesthetics, etc.) and the OUI User Community



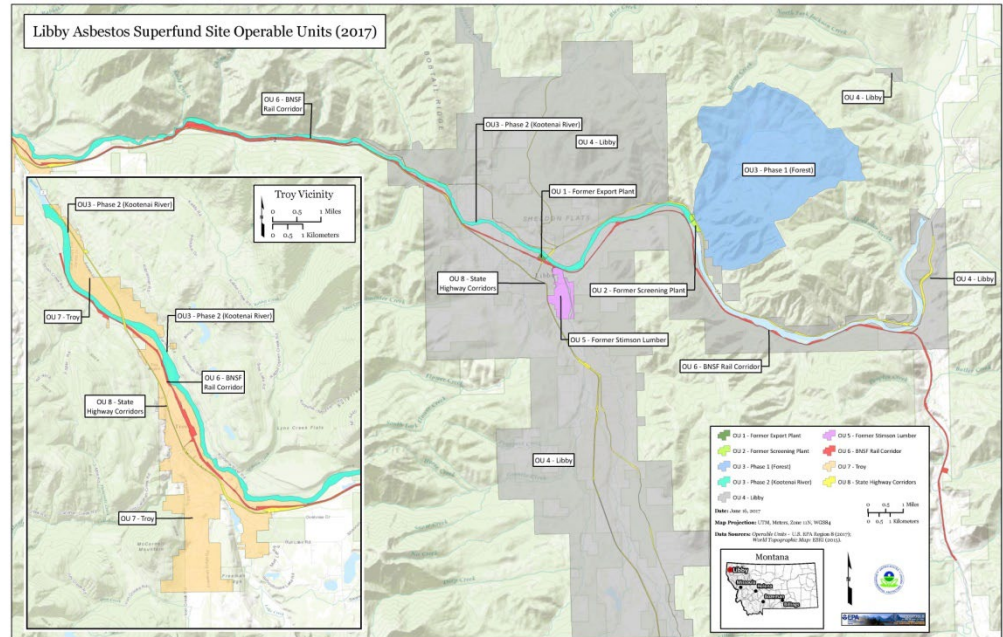


# OU5 – Industrial Park

- Lincoln County Port Authority (LCPA) property
  - 400-acre industrial park
  - Also has kids' fishing pond, motocross park, bike trail
  - Plus commercial office space
- EPA facilitated two redevelopment events for LCPA
- Draft Final O&M Manual completed and out for final review

# OU6 – BNSF Railway corridor

- BNSF Railroad. This OU is owned and operated by the BNSF railroad. OU6 includes the BNSF property boundaries from the eastern boundary of OU4 to the western boundary of OU7, and extent of contamination associated with the Libby and Troy railyards.



# OU6 – BNSF Railway Corridor

- Pre-2005 Investigations and Response Actions
- Included soil/undercutter spoils sampling, railyard soil sampling, railyard soil characterization, a response action in 2003, and railyard response actions in 2004 and 2005
- Post 2005 Investigations
- Rail crossing air monitoring, OSHA exposure sampling for steel gang (2008) and supersurfacing gang (2009), ABS for public receptors and workers (2008), undercutter spoils sampling

# OU6

- All remedial work is completed
- Environmental covenants being put in place
- Consent decree negotiations are underway

# OU8 – Highways

- OU8 is comprised of the United States and Montana state highways and rights of way within the boundaries of OU4 and OU7
- Remedial actions generally completed as part of remedies within OU4 and OU7



# Summary – OU status

Operable Unit	Description	Status
<b>OU1</b>	Riverfront Park (former Export Plant)	Cleanup Complete. O&M ongoing. Working on environmental covenant. Ability to do partial deletion being evaluated.
<b>OU2</b>	Former Screening Plant	Cleanup Complete. O&M ongoing. Ability to do partial deletion being evaluated.
<b>OU3</b>	Former WR Grace Mine	RI complete. Phased FS underway. Phase I ROD anticipated 2019, and Phase II ROD anticipated 2020
<b>OU4</b>	Residential/Commercial Properties in Libby	Estimated completion of cleanup in 2018.
<b>OU5</b>	Lincoln County 400-acre industrial park (former Stimson Lumber Mill)	Cleanup complete. O&M transition in progress. Working on environmental covenant. Ability to do partial deletion being evaluated.
<b>OU6</b>	BNSF Railroad Corridor	Cleanup Complete. Consent Decree negotiations underway.
<b>OU7</b>	Residential/Commercial Properties in Troy	Estimated completion of cleanup in 2018.
<b>OU8</b>	Highways/Roadways	Remedial action complete. Developing Remedial Action Completion Report. Transition to O&M underway.

# Ongoing work

- Evaluating partial deletion potential for OUs 1, 2, and 5
- Complete remedial activities in OUs 4 and 7
- O&M and IC development site-wide, and transitioning O&M to the State of Montana
- OU3 – tailings dam instability, waste remaining in floodplain, wildfire, commercial logging