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Ref: 8EPR-SR

ACTION MEMORANDUM AMENDMENT

SUBJECT: Action Memorandum Amendment Requesting Approval to Address Amphibole Asbestos Contamination for the Time-Critical Removal Action at the Libby Asbestos Site – Libby, Lincoln County, Montana

FROM: James B. Martin
Regional Administrator

THRU: James E. Woolford, Director
Office of Superfund Remediation and Technology Innovation

Lawrence M. Stanton, Director
Office of Emergency Management

TO: Mathy V. Stanislaus, Assistant Administrator
Office of Solid Waste and Emergency Response

Re: Site ID#: BC
Category of Removal: Time Critical, NPL, EPA Fund-Lead

I. INTRODUCTION

A. Purpose of this Amendment

The purpose of this Action Memorandum Amendment (Amendment) is to request and document your approval for changes to removal action and cleanup protocols described in the original Action Memorandum and previous Amendments, and to outline a new Neighborhood clean-up approach.

B. Summary of Action Memorandum Amendments

The most recent Amendment, approved August 13, 2009, addressed the removal action at the Cabinet View Country Club Golf Course. The initial Action Memorandum was signed May 23,

2000, and supported the initiation of removal activity in Libby, Montana. This was followed by amendments in July, 2001; May, 2002; May, 2006; June, 2006; September 2008; June 2009; and the August 2009 amendment for the golf course. These amendments raised the cost ceiling in effect at the time they were issued or expanded the scope of the cleanup. This Amendment will cover the site-wide ongoing commercial, public, and residential cleanups in Libby, as well as in the nearby Troy, Montana area.

II. SITE CONDITIONS AND BACKGROUND

A. Site Description

Vermiculite mining operations conducted in Libby, Montana between the 1920s and 1990 produced asbestos-contaminated vermiculite. The Libby mine produced up to 80% of the world's supply of vermiculite, which was used primarily for insulation and as a soil amendment. These products were produced by a high temperature process (exfoliation) that expands the raw ore. The milling process reportedly emitted up to 5,000 pounds of asbestos per day to the atmosphere. The vermiculite from the Libby mine was contaminated with a toxic and highly friable form of asbestos called Tremolite-Actinolite Series Asbestos, often called Libby Asbestos (LA). For many decades, the asbestos-contaminated vermiculite was utilized throughout town in many public places such as school tracks, public parks, and baseball fields. Vermiculite mine tailings were also placed at some of these locations. Vermiculite insulation was also used in residences, public buildings, and schools.

The Libby Site (also comprising the Troy area) is an especially large and complex site in which a hazardous contaminant, LA, is prevalent throughout the town and surrounding areas. The prior Action Memorandum and Amendments describe how asbestos-contaminated vermiculite came to be present in commercial and residential buildings as well as outdoor areas. They also describe the nature of the contaminant and the unique threat it poses in Libby given the multiple pathways of exposure.

The Action Memorandum and subsequent Amendments describe the vermiculite mine, vermiculite processing facilities, several contaminated properties, and the conditions found throughout the Libby Valley. The amendment of June 17, 2009 found that the threat posed by asbestos at the Libby Site was unique in its severity and scope in comparison to other mining or processing sites because of the multiple sources and pathways of exposure. When the Site was listed on the National Priorities List (NPL), it included the nearby town of Troy, Operable Unit 7 (OU7). EPA's initial investigations focused on the Libby area and then expanded to the Troy area in May 2007. Assessment work in Troy is being conducted by the Montana Department of Environmental Quality (MDEQ) through a cooperative agreement funded by EPA. An interim data summary report on the assessments in Troy was released on May 27, 2009. That report indicated that 102 properties in Troy would likely require a cleanup. Since then, that number has grown to approximately 130 and the Troy Asbestos Property Evaluations (TAPE), which is part of the MDEQ-lead remedial investigation, continues to further characterize OU7. Prior to these investigations, EPA had conducted several responses in Troy as conditions warranted. This

amendment includes activities to address contamination found in the Troy area, as well as in Libby.

B. Other Actions to Date

To address this widespread contamination, since 1999 the EPA has been conducting cleanups of asbestos-contaminated soils and insulation throughout Libby (and also the neighboring community of Troy) using its removal authorities under CERCLA Section 104. This Action Memorandum amends the previous Action Memorandum and its Amendments that set forth the need and scope for additional property cleanups at the Site.

This Action Memorandum Amendment and prior Amendments each describe the status of various activities at the Site at the time of their writing. Generally, activities in 2000 focused on the former W.R. Grace processing facilities (Export Plant, Screening Plant) that were large volume, obviously highly contaminated properties. In 2001, work continued at the processing areas and then expanded to include some large volume property cleanups containing extensive amounts of vermiculite mine waste (e.g., the High School and Middle School tracks and the Plummer Elementary ice rink). The distribution of LA-bearing mine waste throughout the community became apparent in 2001. Residential and commercial property cleanups began in 2002.

Below is a summary table (Table 1) of the work performed during the history of on-site removal actions, as well as a narrative synopsis of the work items:

Table 1: Work to Date Summary

Year	Large Projects	Commercial/ Residential	Soil (yds^3)	Converted to Tons *	VAI (yds^3)	Debris (yds^3)
2000	Screening Plant (SP), Export Plant(EP)	0	150,000	187,500	0	35000
2001	SP, EP, Libby High School(LHS), Libby Middle School(LMS), Plummer Elementary, Seifke,	8	120,000	150,000	0	5000
2002	SP, EP, LHS, LMS,	18	75,000	93,750	300	1000
2003	Riverside Park		40,000	50,000		
	Other Properties	157	15,000	18,750	2200	250
2004	SP-Flyway		30,000	37,500		
	Other Properties	170	16,000	20,000	2300	125

2005	Other Properties	225	31,000	38,750	2700	200
2006	Other Properties	216	26,000	32,500	3100	175
2007	Other Properties	160	46,000	57,500	2200	150
2008	ABS for 0U4 and BMX at OU5 - $250 million settlement -	149	49,857	62,321	1,304	593
2009	**Residential Cleanups, Golf Course, two Creeks, ABS (Schools) + ERS & Stinger quick response**	**159**	**82,991**	**103,739**	**681**	**671**
	Golf course and all Creek work		**21,208**	**26,510**		
2010	**Residential Cleanups (Libby & Troy), Libby Hotel, ABS, Schools Investigations + Soils from Amphitheatre to top of mine haul road (228,521 cyds)**	**201**	**123,654**	**154,568**	**7,353**	
2011	**Residential Cleanups, start remedial action at OU1**	**139**	**121,541**	**151926**	**3185**	
Total		**1602**	**947,043**	**1,183,804**	**25,323**	**43,164**

C. Synopsis of Previous Actions

There are eight OUs at the Site, as well as a site-wide support service, and two disposal units. Following is a description of the activities for each.

Export Plant (OU1): Under a Unilateral Order from EPA, W.R. Grace demolished and disposed of four buildings and removed approximately 15,500 yds^3 of contaminated soil and 2500 yds^3 of debris from the property. The EPA completed the remaining demolition and disposal in 2002. The lumber business formerly operating at this location was relocated by W.R. Grace in 2003 to a new location in Libby. This work is summarized in a Data Summary Report (CDM 2007) found in the Administrative Record. A ROD was signed in May 2010 and the remedial action began in 2011 and is scheduled to be completed in 2012.

(1) Riverside Park and Boat Ramp: This is an area adjacent to the former Export Plant along the Kootenai River. Although it was not part of the W.R. Grace operations, it is now included as part of OU1. In 2003, subsurface contamination was encountered during construction of a new park and boat ramp being built by the City of Libby. The EPA halted construction and cleaned the parcel in late 2003. Approximately 15 acres of soil were excavated to an average depth of two feet. This resulted in the removal of

approximately 40,000 yds^3 of contaminated soil. This work is summarized in a Data Summary Report (CDM 2007) found in the Administrative Record.

Screening Plant (OU2): This property consists of five distinct, contiguous parcels. In total, roughly 335,000 yds^3 of contaminated soil, and 30,000 yds^3 of debris were removed from the Screening Plant and taken to the mine for disposal. This work is summarized in a Data Summary Report (CDM 2007) found in the Administrative Record. A ROD was issued in May 2010 and the remedial action was completed in 2011. The five parcels include:

(1) **Raintree Nursery**: The EPA completed cleanup of this parcel in 2003. Approximately 17 acres were addressed, and 250,000 yds^3 of contaminated debris and soil were removed. Restoration of this parcel is complete.

(2) **North Side Parker Property:** The EPA completed cleanup here in 2004, addressing approximately four additional acres. Approximately 18,000 yds^3 of contaminated soil were removed.

(3) **Flyway Property:** The EPA completed approximately 1/4 of the cleanup of the Flyway parcel in 2002; W.R. Grace, pursuant to an Administrative Order on Consent with EPA, cleaned up the remainder of the parcel in 2004. In all, approximately sixteen acres were addressed, and approximately 30,000 yds^3 of soil were removed. EPA, working with the Montana Department of Transportation, capped a contaminated area on the Highway 37 right-of-way (ROW) along the Flyway in 2005.

(4) **KDC Bluffs Property**: Three areas of the KDC Bluffs parcel contained piles of waste vermiculite and debris. These were cleaned up by the EPA in 2001 with approximately 15,000 yds^3 of soil removed. There remains a section of the KDC Bluffs that has been found to have levels of LA at <1% over two to three acres. At the time of the removal action these areas were unoccupied, and as such were left for future remedial actions. Recently, an out-of-state homeowner built a house on a portion of the property. Since the KDC Bluffs property now includes residential development, the EPA proposes to address this property as part of OU4. If necessary, future residential properties on the KDC Bluffs area will be screened and cleaned up as part of OU4.

(5) **Wise Property:** This is a ¾ acre property between Raintree Nursery and the Flyway. Approximately 2000 yds^3 of LA-contaminated soil were removed in 2001. This property was used as an access point for the flyway cleanup, thus the restoration was not completed until 2005.

Mine/Rainy Creek Road (OU3): Rainy Creek Road is a US Forest Service access road to the Kootenai National Forest and the former vermiculite mine. Like the mine itself, Rainy Creek Road is highly contaminated with LA, and site access remains restricted. In actions conducted in 2001 and 2003, the EPA paved the lower portion of the road starting from where it intersects Highway 37. A decontamination station has been in place on the road since 2000 to facilitate

soil disposal at the former mine, as well as to clean other vehicles accessing the area. Soil disposal of OU4 and OU7 waste material continues at the mine. In 2007, the EPA signed an Administrative Order on Consent (AOC) with W.R. Grace to conduct a Remedial Investigation/Feasibility Study (RI/FS) on OU3. Sampling activities began in September 2007 and continue in support of the RI/FS.

Commercial, public and residential cleanups in Libby (OU4): Once the Libby Asbestos Site was placed on the NPL in October 2002, as part of its RI the EPA began to systematically inspect and sample parcels of land within the Site boundary. This information was also used to identify properties in need of time-critical removal actions. Removal actions were undertaken within homes and yards to reduce risk to property owners and mitigate the release or threat of release of LA into the environment. Any LA within homes may be dispersed to the environment through foot traffic, air currents, and cleaning and disposal. The EPA has identified 4,400 properties that need inspections (see Contaminant Screening Study (CSS), CDM 2004 in the AR). This screening effort identified roughly 1800 properties which met the Site Removal Criteria described in the December 2003 Technical Memorandum. As of December, 2011, removal actions have been completed at 1602 of the identified properties. It should be noted that the CSS also identified an additional 840 properties that had LA contamination, but that did not meet the Site Removal Criteria.

(1) Libby High School and Libby Middle School Tracks: Cleanups were completed by 2001, and both tracks were restored in 2002. Work is complete.

(2) Siefke Property: This parcel was a highly contaminated, large residential property. A considerable volume of equipment and debris from the former vermiculite mine was located on the property. Cleanup was completed in 2002, and restoration was completed in 2003.

(3) Johnson, Sanderson, Temple, Struck, Rice, Fuhlendorf, Spencer, and Westfall Properties: These properties contained mine wastes with LA concentrations up to 10%. Cleanup and restoration activities were completed by 2003.

(4) Champion Hall Road: Vermiculite mine tailings had been used to make and/or repair portions of a gravel road leading into a subdivision. Cleanup was completed in 2003.

(5) Helipad at the Hospital: This parcel was selected by the hospital for its new helipad. The Cleanup resulted in 3,254 cubic yards of contaminated materials being removed and replaced and activities completed in 2005.

(6) Creek Work: Granite, Callahan and Flower Creeks were cleaned, covered with shotcrete cement and 15,471 tons of riprap material to protect the levees from erosion and exposure. Actions were completed in 2008.

(7) Front nine holes of the Cabinet View Country Club (CVCC): Removal of over 21,000

cubic yards of contaminated material was completed in 2009 with a protective layer of clean fill material placed for CVCC to complete the final restoration. The EPA and CVCC entered into a settlement agreement for the final restoration.

(8) **Libby Hotel:** This property was cleaned up in early 2010 in order to not interfere with the schedule for residential removals. This removal was completed to provide the owners an opportunity to rebuild an abandoned hotel.

Former Stimson Lumber Mill (OU5): The former Stimson Lumber Mill contained vermiculite attic insulation (VAI) in a number of its buildings. Apart from the EPA's actions, the Stimson Lumber Company systematically removed all of its loose and accessible VAI in 2002 and 2003. Due to a downturn in the lumber market, most of the Mill operations closed in 2003, and a large portion of the 400 acre parcel was sold to the Kootenai Redevelopment Authority in 2004. The Redevelopment Authority has been, and is now actively seeking businesses to locate on the former Mill property. Investigations to date have found limited soil contamination in the former nursery area. This area was fenced in 2004. The only other area of this OU that presented an obvious need for response was the former Central Maintenance Building. The EPA removed the dilapidated portion of the roof in 2005. This work is summarized in a Data Summary Report (CDM 2007) found in the Administrative Record. An EPA removal of the remaining portion of the roof at the former Central Maintenance Building began in 2010 and was completed in 2011.

Burlington Northern & Santa Fe Railway Company rail yard (OU6): The Burlington Northern & Santa Fe Railway Company (BNSF) rail yard is located adjacent to the former Export Plant and was used to facilitate rail shipments of vermiculite. OU6 is comprised of the rail yard, and the rail lines leading out of Libby. Pursuant to an AOC with the EPA, BNSF began cleanup of the contaminated rail yard in 2003 but had to stop work due to complexities of soil removal below the tracks. Work resumed in 2004. Most of the tracks in the rail yard were removed to allow for cleanup underneath them. Although most of the contaminated soil was removed, some contamination was capped in place. Institutional controls for contamination left in place will be evaluated as part of the RI/FS and future ROD. The EPA is negotiating with BNSF to conduct and complete the RI/FS for this OU under an Administrative Order on Consent.

Troy (OU7): Systematic investigations of properties in the Troy area began in May 2007. This investigation is ongoing. However, prior to these investigations the EPA conducted several small scale responses in Troy as conditions warranted, the largest of which was the removal of VAI from the Troy High School. The EPA will continue to conduct individual property removal actions at properties with the potential for high exposure to LA. In 2010, the EPA focused cleanup efforts in Troy. That year, 88 property cleanups were conducted in Troy. This particular action is discussed at length in the June 2006 Action Memorandum Amendment. The other actions included cleanup and disposal of VAI encountered unexpectedly by a property owner.

Transportation Corridors (OU8): The transportation corridors of the Libby Asbestos Superfund Site are comprised of 5 Highway segments in Libby and Troy, Montana. These segments include

State Highways 2 and 37, as well as secondary highways 567 (Pipe Creek), 260 (River Road), and 482 (Farm-to-Market). The EPA has collected data and is working to draft the Remedial Investigation report. The RI Report will describe the nature and extent of Libby amphibole (LA) asbestos and associated human health risks at OU8. Once toxicity values for LA are developed, the RI Report will be finalized. A Feasibility Study will then be developed to evaluate remedial alternatives and a remedy will be selected to address the contamination.

Environmental Resource Specialist (ERS) - (Site Wide): The Environmental Resource Specialist program is in place to respond to unplanned and potentially urgent exposures to VAI and LA. Beginning in October 2006, the EPA began providing a full-time service, entitled the Environmental Resource Specialist, to assist property owners, firemen, and other affected response personnel or citizens. The ERS also supports the local utility locater service, known as U-Dig. The need for this function will likely continue beyond the EPA's Response Actions at the Libby Site and may be part of the long-term Institutional Controls (ICs) for the site.

Lincoln County Landfill Asbestos Cell: In 2003, the EPA constructed an asbestos disposal cell at the Lincoln County Landfill to facilitate the disposal of VAI material and extend the construction season. To date, the EPA has placed over 20,000 yds^3 of VAI and LA-contaminated debris at this cell. Disposal operations are ongoing.

Disposal Area at the Mine Site: Prior to 2010, asbestos-containing soils were disposed of at area 19 at the mine. Beginning in 2010, the EPA began using the excavated soils as cover material for portions of the mine where high levels of asbestos are found at the surface.

D. Current Actions

The EPA cleaned up 139 properties in 2011. In addition, the EPA began a remedial action at OU1 which will be completed in 2012. Once this remedial action is complete, the property will be used as a city park.

In 2011 EPA continued sampling and analysis activities including outdoor ambient air monitoring at OU4; activity-based outdoor air exposures for OU4; and activity-based indoor air exposures for OU4. These studies were designed to provide exposure data that will be incorporated into the baseline risk assessment for the site. In addition, the EPA is conducting activity-based sampling in order to evaluate exposure levels resulting from naturally occurring asbestos and to determine the background level of asbestos in the Libby Valley.

In addition to conducting physical cleanups, the EPA continues to provide guidance, training and assistance for Libby residents. Such actions include the ERS service; the development and publication of fact sheets for residents and local contractors who may encounter asbestos-contaminated vermiculite; asbestos abatement and health and safety training for local contractors; and public warnings for areas of contamination discovered in public areas. These actions are intended to address ongoing exposures.

In 2011 the EPA began implementing a Neighborhood approach to cleanups in Libby. The known highly contaminated or "worst first" properties have already been addressed and the remaining properties are very similar in terms of the potential for exposure. This new approach is intended to enable the EPA in a systematic way to address all remaining properties in a given neighborhood that require investigation or cleanup. Through this approach we are able to avoid subjecting property owners to the disruption and potential for recontamination that can come from repeated visits spanning multiple construction seasons to the same neighborhood. As part of the Neighborhood approach, the EPA is conducting additional outreach in an attempt to gain access from homeowners who, in the past, have been unwilling to grant access for investigations and cleanups.

As the lead agency for the Troy area (OU07), during 2011 the MDEQ continued the TAPE program. In 2011 MDEQ, with contract support from the EPA, conducted a limited number of property cleanups in Troy. MDEQ is in the process of preparing a Remedial Investigation report for OU07.

E. State, Local, and Other Authorities' Roles

As discussed earlier, MDEQ has taken the lead role for assessment in Troy (OU7). The United States Army Corps of Engineers is supporting the EPA in providing contracting and construction oversight for the removal and remedial actions. The Agency for Toxic Substances and Disease Registry (ATSDR); the United States Geological Survey (USGS); and the National Institute for Occupational Safety and Health (NIOSH) are active participants in site-wide studies. The USGS also continues to provide the EPA with technical assistance regarding the mineralogy, morphology, and measurement of LA. Lincoln County and the City of Libby are active in several local advisory groups and coordinate directly with the EPA on many issues regarding the removal actions and remedial investigations. In addition to their lead role for assessment in Troy, MDEQ continues to serve as the support agency at the EPA-lead operable units.

III. PUBLIC HEALTH EMERGENCY

The June 17, 2009 Action Memorandum Amendment documented the conditions which justified the finding of a Public Health Emergency at the Libby Site pursuant to CERCLA Section 104(a)(4).

IV. THREATS TO PUBLIC HEALTH OR WELFARE OR THE ENVIRONMENT, AND STATUTORY AND REGULATORY AUTHORITIES

This Action Memorandum Amendment, prior Amendments and the Administrative Record describe in detail the threats to human health presented by exposure to LA. Despite considerable progress on cleanup, conditions in Libby still present significant threats to public health.

The EPA has considered all of the factors described in Section 300.415(b)(2) of the National

Contingency Plan (NCP), and has determined at least three of the factors continue to be present at the Libby Asbestos Site, including the area of Troy.

A. Threats to Public Health or Welfare:

(i). *Actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substances or pollutants and contaminants*;

While the EPA's actions have reduced LA-contaminated source materials (e.g., indoor dust, yard and garden soils, driveway materials, vermiculite insulation), these sources still exist throughout the community. This Action Memorandum Amendment and previous Amendments have described these conditions in detail. Previous investigations have shown that most of the approximately 4,400 properties in the Libby area contain varying levels of contaminated source materials, such as vermiculite insulation or contaminated soils. The EPA studies in the Administrative Record (AR) have found that low levels of amphibole asbestos in soils can generate concentrations of airborne fibers. These exposure levels are higher than those which would be acceptable for a residential population. These data are entirely consistent with investigations conducted by W.R. Grace concerning the handling of various vermiculite-bearing materials, which is reported in the Action Memorandum and subsequent Amendments and contained in the Site AR.

Investigations have clearly shown elevated levels of LA in the dust of residents' homes prior to cleanup (CDM, 2002, 2003a and 2003b; EPA Region 8, 2003). This dust contamination comes from several sources including, but not limited to: contaminated soil tracked into the homes; contamination that was picked up from the former vermiculite processing facilities and brought home on clothes and equipment; and releases of uncontained vermiculite insulation within homes. When disturbed, these LA-contaminated source materials may release LA fibers to indoor air resulting in complete exposure pathways. Actual exposure to these contaminated source materials may occur daily depending on the conditions and usage of the specific properties. Data contained in the reports in the Administrative Record indicate that activities performed by area residents and workers can result in elevated concentrations of respirable LA fibers in indoor air.

The EPA has also determined that during a catastrophic event there is a significant threat of amphibole asbestos exposure from attics to the outside environment. In 2007 and 2008 there were three house fires and one severe weather event involving homes containing VAI. In one of the fires, an explosion released VAI around the exterior of the home which created an exposure pathway to firefighters and passers-by. In the other two situations, flames breached the roofs and fibers were released to the atmosphere and surrounding properties. In the weather event, a microburst tore a roof off a home containing VAI, which released visible vermiculite to the surrounding property.

LA fibers from the Libby mine site are hazardous to humans as evidenced by the elevated occurrence of asbestos-related disease (ARD) in area residents and workers. Workers exposed to

asbestos fibers from the Libby mine site have been found to have an increased potential for mortality and morbidity from asbestos-related conditions, including asbestosis, pleural fibrosis, lung cancer, and mesothelioma. Asbestos-related lung diseases have also been observed in area residents with no direct occupational exposures, including family members of mine workers, and even in individuals with no known association with vermiculite mining or processing activities (Weis, 2001; ATSDR, 2003; Peipins et al., 2003; Miller, 2005; Whitehouse, 2008).

Past exposure to amphibole asbestos has had, and will continue to have, major adverse health impacts on Libby Site residents. Investigations performed by ATSDR have found an unusually high rate of cases of ARD in this relatively small community. The death rate from asbestosis in Libby was at least 40 times that of the national average for the period from 1979-1998 (Montana Primary Care Health Professional Shortage Area List, 2001; Lincoln County Health Profile, 2002; U.S. Department of Health and Human Services, 2009). New diagnoses of ARD number two or three a month. A study in Libby of persons 18 years of age and older found that 1,186 of 6,668 participants (approximately 18% of those x-rayed) had abnormalities in the linings of their lungs (pleural abnormalities) (Peipins et al., 2003). The risk of pleural abnormalities increased with increasing age and increasing length of residence in the Libby area. The rate of pleural abnormalities found in groups within the United States who have no known asbestos exposures ranges from 0.2% to 2.3%.

The degree of asbestos contamination and the resulting medical impact is greater at Libby than that at other sites where vermiculite was shipped, processed or handled. The documented incidence rate of ARD in Libby and Troy is greater than that in other areas throughout the US with some level of LA contamination. An unfortunate convergence of factors has contributed to this situation:

1) There are multiple human exposure pathways in Libby and Troy;
2) Exposure continued over a period of 60 or more years;
3) The vermiculite processing facilities were in very close proximity to the homes in Libby;
4) The meteorology of the area causes temperature inversions which trap air and asbestos carried by that air close to the ground;
5) The terrain further constrains contaminants within the steep walls of the valley, causing higher concentrations in localized areas;
6) The homes in these economically depressed communities are generally old, potentially leading to greater migration of contaminants into the living space from outdoors, attics and wall-spaces;
7) A high smoking rate among the people in Libby and Troy increases the risk of asbestosis and lung cancer; and,
8) Medical care in Libby and Troy has historically been limited, due to the isolated location and economic straits. Consequently, there was less chance of early detection of mesothelioma and appropriate care for asbestosis. That situation has changed in recent years with the opening of the Center for Asbestos Related Disease (CARD) clinic.

There is an especially serious risk to trades people (electricians, craftsmen, etc.) in Libby and Troy due to the high number of homes impacted by LA. Due to the potential presence of LA in attics, walls, and crawl-spaces, trades people may encounter larger quantities of LA during their workday activities, increasing their chance for exposure.

Most of the known, large contaminant sources and public areas (such as former vermiculite processing plants, schools, ball fields, and Riverside Park) have already been cleaned up. Other contaminated areas that have been cleaned up include the CVCC Golf Course, the right-of-way along Highway 37, the public compost pile at the county landfill, portions of the former Stimson Mill, and the creeks. At other properties the EPA has instituted interim containment measures such as fencing and/or issued public warnings. These properties will be addressed in a Record of Decision.

(ii). *The (lack) of availability of other appropriate Federal or state mechanisms to respond to the release.*

The EPA believes that no person or local, state, or Federal agency is in the position, has the authority, or has the resources to independently and in a timely manner implement an effective response action to address the on-going threats presented at the Site. Other than CERCLA, there is no comprehensive Federal, state, or local program that provides both the authority and resources necessary to respond to a release of the scope presented by the Site at OUs 4 and 7. Under CERCLA as implemented by the EPA under Executive Order 12580, the EPA is the agency with the authority to address such releases.

B. Threats to the Environment

Work on an ecological risk assessment was initiated in September 2007and is not yet complete. While currently no response actions are based on ecological impacts at the Site, this may change as data are collected. The Action Memorandum dated May 23, 2000 contains information about potential threats to the environment.

V. ENDANGERMENT DETERMINATION

The actual or threatened releases from this Site, if not addressed by continuation of the time-critical removal actions set forth in the original Action Memorandum and subsequent Amendments, may present an imminent and substantial endangerment to public health or welfare or the environment. The original Action Memorandum for the Site, dated May 23, 2000 (EPA Region 8, 2000), as well as subsequent Amendments and the Administrative Record, describe in detail evidence of the toxicity associated with exposure to LA, the large number of human exposure pathways, the significantly elevated disease rate in Libby residents, and the variety of conditions present in and around Libby that could lead to continuing exposures.

Apart from this imminent and substantial endangerment, the EPA Administrator Lisa P. Jackson found that the conditions in Libby associated with the release of amphibole asbestos from all sources, including VAI, present a public health emergency, pursuant to 42 U.S.C. § 9604(a)(4).

VI. EXEMPTION FROM STATUTORY LIMITS

The original Action Memorandum, dated May 23, 2000, provided the documentation required to meet the NCP Section 300.415(b) criteria for a removal action. This Action Memorandum also provided the EPA's determination regarding the applicability of CERCLA Section 104(c)(l)(A) [NCP Section 300.415(b)(5)(i)]. This provision allowed for using the emergency exemption from the $2 million and one year limits on removal actions. The two most recent site-wide Action Memorandum Amendments dated June 2009 and August 2009 expanded the scope of removal actions and raised the approved removal ceiling to $333,495,100. The August 2009 Action Memorandum Amendment also found that conditions at the Site continued to satisfy the emergency exemption and met the CERCLA Section 104(c)(1)(C) [NCP Section 300.415(b)(5)(ii)] consistency exemption, which allows for a continued removal action over the cap when it is "otherwise appropriate and consistent with the remedial action to be taken." The conditions necessitating time critical removal action at the Libby Site still exist and continue to satisfy both the emergency and consistency exemptions from the statutory limits.

An emergency exemption continues to be warranted to protect public health. Due to the prevalence of past and potential exposures, and the observed high rate of asbestos-related diseases, these risks are of an immediate and emergency nature. While conditions have improved considerably through the EPA intervention, hundreds of properties meeting criteria set forth for time-critical removal actions have yet to be addressed. Exposures to an already impacted population could potentially occur, and the EPA is the only Agency with the resources to mitigate these conditions. In addition to meeting the criteria for an emergency condition, removal actions are also expected to be appropriate and consistent with future remedial actions, and thus continue to also meet the criteria for a consistency exemption from the $2 million and one year limits on removal actions as set forth in Section 300.415(b)(5)(ii) of the NCP. There are several reasons for this:

- LA, the contaminant of concern in Libby, is a mineral. There are no known viable treatment technologies that can diminish or reduce the toxicity of asbestos. To address exposures from asbestos, the most viable and commonly used physical cleanup options available are to remove it or to contain it. For time critical removal actions at the Site, the EPA has used a combination of these approaches as appropriate.

- Because asbestos use was widespread in the past, the basic approach for asbestos abatement is well understood. There are a limited number of options available for cleanup. Most importantly, when asbestos is determined to be friable, the preferred mechanism to address potential exposures is to remove or contain the source.

- Investigations have shown that sources of LA, including, but not limited to, contaminated soil, vermiculite insulation, and vermiculite processing wastes are prevalent throughout Libby. Past and current investigations have clearly shown that, when disturbed, these sources can release LA to the air and have the potential to be released to the environment and contaminate indoor dust. This appears to be true even though LA concentrations in the source material are relatively low (Supplemental Quality Assurance Project Plan Report, EPA 2007). The primary objective of the removal actions is to remove or isolate these sources. Future site cleanups will continue to utilize removal and containment strategies.

VII. PROPOSED ACTIONS AND ESTIMATED COSTS

A. Proposed Action Description

The Action Memorandum Amendment from May 2002 sets forth the basic scope of the current set of removal actions at the Libby Asbestos Site. While the basic need for cleanup and the general nature of the proposed actions has not changed, the EPA has discovered that (1) more properties require cleanup than originally anticipated and (2) the difficulty and cost of cleanup is higher than originally anticipated. Currently, approximately 210 unaddressed properties in the Libby area meet the removal criteria for the Site. In addition, first-year, full-scale investigations of properties in and around Troy, Montana indicate that 40 additional properties of the approximately 1300 properties screened there also require cleanup. There are also approximately 600 properties which have not yet been investigated or have refused to provide the EPA with access for a cleanup. The EPA plans to continue the Environmental Resource Specialist service for the entire site.

The data from the Supplemental Quality Assurance Project Plan report indicates a need to modify the current removal actions approach. Based on the December 15, 2003, document titled: "*LIBBY ASBESTOS SITE RESIDENTIAL/COMMERCIAL CLEANUP ACTION LEVEL AND CLEARANCE CRITERIA TECHNICAL MEMORANDUM,*" once a property has met the current removal triggers, all LA that is detectable by Polarized Light Microscopy (PLM) is removed from the surface. However, there are some properties where visible vermiculite was left in place because LA was not detected by PLM. For properties that meet the current removal triggers, it was proposed that the EPA remove all levels of LA detected by PLM from the property surface as well as all visible vermiculite material. Consequently, beginning in October 2006, the EPA increased the rigor of the visual inspections performed on properties (see Site-Specific Standard Operating Procedure for Semi-Quantitative Visual Estimation of Vermiculite in Soil, CDM 2006 in Site AR). This improved methodology is designed to aid in the delineation of LA-bearing source materials. Also, beginning in October of 2006, the EPA improved the methodology for collecting soil samples (going to 30-point composites instead of five-point composites). It is expected that combining these methods will provide the EPA a much better field-usable tool for guiding its cleanups.

On December 21, 2011 the "AMENDMENT A, LIBBY ASBESTOS SITE RESIDENTIAL/COMMERCIAL CLEANUP ACTION LEVEL AND CLEARANCE CRITERIA TECHNICAL MEMORANDUM" was adopted by the EPA. The amended Technical Memorandum incorporates all of the improvements to the removal process that have been adopted over the past eight years.

B. Contribution to remedial performance

The EPA finalized the listing for the Libby Site in October 2002. While cleanup at the Site continues to be conducted using removal authority, the Site was transitioned to the Region 8 Remedial Program after final listing on the NPL. Information and experience gained during the removal actions are continually used to refine the cleanup action and to plan for future work. Likewise, as more information is learned about the nature of the contamination and the risks presented, adjustments to the cleanup approach will be made as necessary.

C. Description of alternative technologies

The EPA attempts to employ the most appropriate technologies for addressing risks. At this time, there are no other known viable alternative technologies available for addressing asbestos.

D. EE/CA

No EE/CA is required.

E. Applicable or relevant and appropriate requirements

A revised table of the Federal and State Applicable or Relevant and Appropriate Requirements (ARARs) is attached.

F. Project Schedule

The total number of properties currently identified as requiring cleanup (based on the December 2003 Technical memorandum) including those in and around Troy, is now estimated to be 2,050, and 1,602 of those were completed as of December 31, 2011. Since the cleanup of residential/commercial properties began in earnest in 2003 (see Table 1), over the last eight construction seasons the number of properties the EPA has cleaned annually has ranged from 139 to 225. EPA anticipates that the annual number of property cleanups conducted will decrease as the size of the properties being addressed increases. While the EPA has become more effective in conducting LA removals, as discussed earlier in this Action Memorandum Amendment, the EPA has seen an increase in the number of large properties in the Libby area. Preliminary reviews of the properties in the Troy area suggest that there is a mix of large and small properties that meet the current OU4/OU7 cleanup criteria. For planning purposes it is assumed that approximately $25,000,000 in special account/settlement funds will be required annually to clean up Libby Asbestos Site properties from 2012 through 2013.

It is worth noting that the exact number of properties to be addressed in and around Libby and Troy may not be known until the publication of a final Record of Decision (ROD). The final ROD will incorporate the results of the toxicity studies and exposure assessment.

G. Estimated Costs

This Action Memorandum amendment does not seek any increase in the site ceiling. The total estimated cost for removal actions in 2012 and 2013 is $50,000,000.

VIII. EXPECTED CHANGE IN THE SITUATION SHOULD ACTION BE DELAYED OR NOT TAKEN

Delayed action will result in continued public exposure to unsafe amounts of Libby Amphibole asbestos. This will increase the risk to public health and continue to burden an already impacted community.

IX. OUTSTANDING POLICY ISSUES

The Determination and Findings of the June 2009 Public Health Emergency may create the impression to the public that all attic insulation of this type constitutes a health threat. The EPA believes this to be undemonstrated. The Libby Site is unique, involving multiple pathways and sources of exposure, in addition to attic insulation.

X. ENFORCEMENT

A separate Enforcement Addendum has been prepared by the Site Attorney.

XI. RECOMMENDATION

This decision document represents the selected removal action for the removal of Libby Amphibole asbestos sources from properties at the Libby Asbestos Site in Lincoln County, Montana. The proposed removal actions have been developed in accordance with CERCLA as amended and are consistent with the NCP. The decision is based on the Administrative Record for the Site. Conditions at the Site continue to meet the NCP [40 CFR § 300.415(b)] criteria for removal actions. The NCP [40 CFR § 300.415(b)(5)(i)] and [40 CFR § 300.415(b)(5)(ii)] criteria for exemptions from the statutory limits that have been previously documented continue to exist. I recommend your formal approval of the proposed removal action amendment.

Approve: _____ Date: 4/10/12
Mathy V. Stanislaus

Assistant Administrator
Office of Solid Waste and Emergency Response

Disapprove: _____ Date: _____
Mathy V. Stanislaus
Assistant Administrator
Office of Solid Waste and Emergency Response

Summary of Federal and State Applicable or Relevant and Appropriate Requirements (ARARs) Compliance Continued Site-wide Removal Action - Libby Asbestos NPLSite

I. INTRODUCTION

40 CFR 300.415(i) provides that fund financed removal actions under CERCLA section 104, 42 U.S.C. § 9604, attain, to the extent practicable considering the exigencies of the situation, all state and federal applicable or relevant and appropriate requirements (ARARs). In considering whether compliance with ARARs is practicable, EPA will consider the urgency of the situation and the scope of the removal action being conducted.[1]

This document identifies potential ARARs for continued site-wide commercial, public, and residential removal action to be conducted at the Libby Asbestos National Priorities List Site. The following ARARs or groups of related ARARs are each identified by a statutory or regulatory citation, followed by a brief explanation of the ARAR and how and to what extent the ARAR is expected to apply to the activities to be conducted under this removal action.

Substantive provisions of the requirements listed below are identified as ARARs pursuant to 40 CFR § 300.400. ARARs must be attained during and at the completion of the removal action.[2] No Federal, State or local permit shall be required for the portion of any removal action conducted entirely on site in accordance with Section 121(e) of CERCLA, 42 U.S.C. § 9621(e).

II. TYPES OF ARARs

ARARs are either "applicable" or "relevant and appropriate." Both types of requirements are mandatory under the NCP.[3] Applicable requirements are those cleanup standards, standards of control, and other substantive requirements, criteria or limitations promulgated under federal environmental or state environmental and facility siting laws that specifically address a hazardous substance, pollutant, contaminant, removal action, location, or other circumstance found at a CERCLA site. Only those state standards that are identified by a state in a timely manner and that are more stringent than federal requirements may be applicable.[4]

Relevant and appropriate requirements are those cleanup standards, standards of control, and other substantive requirements, criteria or limitations promulgated under federal environmental or state environmental or facility siting laws that, while not "applicable" to hazardous substances, pollutants, contaminants, locations, or other circumstances at a CERCLA site, address problems or situations sufficiently similar to

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1 40 CFR § 300.415(i)(1) and (2).

2 Preamble to the National Oil and Hazardous Substances Pollution Contingency Plan, 55 Federal Register (FR) 8695 (March 8, 1990).

3 CERCLA § 121(d)(2)(A), 42 U.S.C. § 6921(d)(2)(A). See also, 40 CFR § 300.430(f)(1)(i)(A). Note that that these references apply to remedial actions.

4 40 CFR § 300.5.

those encountered at the CERCLA site that their use is well suited to the particular site. Only those state standards that are identified in a timely manner and are more stringent than federal requirements may be relevant and appropriate.[5]

The determination that a requirement is relevant and appropriate is a two-step process: (1) determination if a requirement is relevant and (2) determination if a requirement is appropriate. In general, this involves a comparison of a number of site-specific factors, including an examination of the purpose of the requirement and the purpose of the proposed CERCLA action; the medium and substances regulated by the requirement and the proposed action; the actions or activities regulated by the requirement and the removal action; and the potential use of resources addressed in the requirement and the removal action. When the analysis results in a determination that a requirement is both relevant and appropriate, such a requirement must be complied with to the same degree as if it were applicable.[6]

ARARs are contaminant, location, or action specific. Contaminant specific requirements address chemical or physical characteristics of compounds or substances on sites. These values establish acceptable amounts or concentrations of chemicals which may be found in or discharged to the ambient environment.

Location specific requirements are restrictions placed upon the concentrations of hazardous substances or the conduct of cleanup activities because they are in specific locations. Location specific ARARs relate to the geographical or physical positions of sites, rather than to the nature of contaminants at sites. Action specific requirements are usually technology based or activity based requirements or limitations on actions taken with respect to hazardous substances, pollutants, or contaminants. A given cleanup activity will trigger an action specific requirement. Such requirements do not themselves determine the cleanup alternative, but define how chosen cleanup methods should be performed.

Many requirements listed as ARARs are promulgated as identical or near identical requirements in both federal and state law, usually pursuant to delegated environmental programs administered by EPA and the state. The Preamble to the NCP provides that such a situation results in citation to the state provision and treatment of the provision as a federal requirement.

Also contained in this list are policies, guidance or other sources of information which are "to be considered" in the implementation of the removal action. Although not enforceable requirements, these documents are important sources of information which EPA and the State of Montana Department of Environmental Quality (MDEQ) may consider, especially in regard to the evaluation of public health and environmental risks; or which will be referred to, as appropriate, in developing cleanup actions.[7] These final ARARs will be set forth as performance standards for any and all removal work plans.

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5 40 CFR § 300.5.

6 CERCLA Compliance with Other Laws Manual, Vol. I, OSWER Directive 9234.1-01, August 8, 1988, p. 1-11.

7 40 CFR Section 300.400(g)(3); Preamble to the NCP, 55 Fed. Reg. 8744-8746 (March 8, 1990).

Statue and Regulatory Citation	ARAR Determination	Description	Comment	Chem-ical	Loca-tion	Action
Federal ARARs						
National Historic Preservation Act, 16 U.S.C. § 470, 40 CFR 6.301(b) 36 CFR 60, 63, 800	Applicable	This statute and implementing regulations require federal agencies to take into account the effect of this response action upon any district, site, building, structure, or object that is included in or eligible for the National Register of Historic Places.	If cultural resources on or eligible for the National Register are present, it will be necessary to determine if there will be an adverse effect and, if so, how the effect may be minimized or mitigated. The unauthorized removal of archaeological resources from public or Indian lands is prohibited without a permit, and any archaeological investigations at a site must be conducted by a professional archaeologist. To date, no such resources have been found in connection with the Libby Asbestos Site residential and commercial property removal action. If any are found, consultation with the State Historic Preservation Office and compliance with the National Historic Preservation Act will be addressed during removal planning.		✓	
Archaeological and Historic Preservation Act, 16 U.S.C. § 469, 40 CFR 6.301(c), 43 CFR 7	Applicable	This statute and implementing regulations establish requirements for the evaluation and preservation of historical and archaeological data, which may be destroyed through alteration of terrain as a result of a federal construction project or a federally licensed activity or program.	Expected to be out of scope of the removal action.		✓	
Fish and Wildlife Coordination Act, 16 U.S.C. §§ 661, et seq., 40 CFR 6.302(g), 33 CFR 320-330	Applicable	This statute and implementing regulations require coordination with federal and state agencies for federally funded projects to ensure that any modification of any stream or other water body affected by any action authorized or funded by the federal agency provides for adequate protection of fish and wildlife resources.	Out of scope as no modification of a water body is expected in connection with this removal action. If the action does involve activities that affect wildlife and/or non-game fish, federal agencies must first consult with the U.S. Fish and Wildlife Service and the relevant state agency with jurisdiction over wildlife resources.		✓	
Endangered Species Act, 16 U.S.C. § 1531, 40 CFR 6.302, 50 CFR 17 and 402	Applicable	This statute and implementing regulations provide that federal activities not jeopardize the continued existence of any threatened or endangered species. Endangered Species Act, Section 7 requires consultation with the U.S. Fish and Wildlife Service to identify the possible presence of protected species and mitigate potential impacts on such species.	Expected to be outside of scope as the removal action applies to residences and commercial properties. If threatened or endangered species are identified within the removal areas, activities must be designed to conserve the species and their habitat. To date no threatened or endangered species have been identified in the area of the site.		✓	

Statue and Regulatory Citation	ARAR Determination	Description	Comment	Chem-ical	Loca-tion	Action
Federal ARARs						
Migratory Bird Treaty Act, 16 U.S.C. §§ 703, et seq., 50 CFR 10.13	Applicable	This requirement establishes a federal responsibility for the protection of the international migratory bird resource and requires continued consultation with the U.S. Fish and Wildlife Service during removal design and removal construction to ensure that the cleanup of the site does not unnecessarily impact migratory birds.	The removal action will be carried out in a manner to avoid adversely affecting migratory bird species, including the bald eagle and including individual birds or their nests.		✓	
Clean Air Act (CAA), 42 U.S.C. §§ 7401, et seq., 40 CFR 61.149 Note: Section 61.149 (c)(2) not delegated to State per 40 CFR 61.157	Relevant and Appropriate	This Act and implementing regulations, 40 CFR 61.149, establish detailed procedures and specifications for handling and disposal of asbestos containing material (ACM) waste generated by an asbestos mill. The provision allows an alternative emission control and treatment method.	Requirements under this regulation are considered relevant and appropriate to ACM (friable material containing > 1% asbestos) disposal. This regulation is not applicable because the facilities to be addressed through this removal do not meet the regulatory definition of an asbestos mill and because EPA does not expect to encounter ACM in connection with removal activities.			✓
CAA, 42 U.S.C. §§ 7401, et seq., 40 CFR 61.150 Note: Section 61.150(a)(4) not delegated to the State per 40 CFR 61.157	Relevant and Appropriate	Standard for waste disposal for manufacturing, fabricating, demolition, renovation and spraying operations. Provides detailed procedures for processing, handling and transporting ACM waste generated during building demolition and renovation (among other sources). The provision allows an alternative emission control and treatment method.	Applicable to regulated asbestos containing material (RACM) generated by building demolitions that may occur as part of the removal action. Relevant and appropriate for soil disturbance activities and for asbestos contaminated material that does not meet the strict definition of RACM.			✓
CAA , 42 U.S.C. §§ 7401, et seq.,40 CFR 61.151 Note: Section 61.151(c) not delegated to the State per 40 CFR 61.157	Relevant and Appropriate	Standard for inactive waste disposal sites for asbestos mills and manufacturing and fabricating operations. Provides requirements for covering, revegetation and signage at facilities where RACM will be left in place. The provision allows an alternative control method.	Requirements under this regulation are considered relevant and appropriate to asbestos containing soils and/or debris left in place. It is not applicable because the facilities that will be addressed under this removal action do not meet the definitions of "facility" in the regulation because EPA does not expect to encounter RACM.			✓
CAA, 40 CFR 61.154 Note: Section 61.154(d) not delegated to the State per 40 CFR 61.157	Relevant and Appropriate	Standard for active waste disposal sites. Provides requirements for off-site disposal sites receiving ACM waste from demolitions and other specific sources. The provision allows an alternative emission control.	It is not expected that there will be offsite shipment of ACM waste as part of this removal action.			✓

Statue and Regulatory Citation	ARAR Determination	Description	Comment	Chem-ical	Loca-tion	Action
Federal ARARs						
Toxic Substances Control Act, 15 U.S.C. §§ 2601, et seq., 40 CFR Part 763, Subpart G	Other Requirements	Asbestos abatement projects and asbestos worker protection. This subpart protects certain State and local government employees who are not protected by the Asbestos Standards of the Occupational Safety and Health Administration (OSHA). This subpart applies the OSHA Asbestos Standards in 29 CFR 1910.1001 and 29 CFR 1926.1101 to these employees.	The State requires that work be performed in accordance with 40 CFR 763.120 and 763.121 (asbestos abatement projects) and 29 CFR 1926.58 (asbestos standard for the construction industry). These requirements will be incorporated into the health & safety plan but do not meet the definition of an ARAR.			✓

Statue and Regulatory Citation	ARAR Determination	Description	Comment	Chem-ical	Loca-tion	Action
State of Montana ARARs						
Montana Asbestos Control Act (MACA), MCA 75-2-501 et seq., and implementing regulations at ARM 17.74.301 through 17.74.368	Applicable/ Relevant and Appropriate/ Other Requirements	The MACA and implementing rules establish standards and procedures for asbestos abatement practices and for accreditation of asbestos-related occupations and control of the work performed by persons in asbestos-related occupations.	Only the portions of the MACA and implementing regulations governing the handling of RACM are potentially applicable or relevant and appropriate. All other provisions (e.g., those governing accreditation, training, etc.) do not meet the requirements of ARARs.			✓
MACA, MCA 75-2-501 et seq., ARM 17.74.355, ARM 17.74.359	Applicable/ Relevant and Appropriate	Asbestos abatement project permits. Asbestos abatement projects require a permit from DEQ. Permits must meet requirements at ARM 17.74.355 and ARM 17.74.359.	Applicable to material meeting the definition of RACM. Relevant and Appropriate for soils or contaminated material that does not meet the strict definition of RACM. The substantive requirements for performance of the work and proper disposal will be met by the contractors used. On-site CERCLA actions do not require a permit. Though it is possible that some provisions could be relevant and appropriate for non RACM waste, most material will likely be handled under Montana solid waste provisions. See discussion below for solid waste ARARs.			✓
MACA, MCA 75-2-501 et seq., ARM 17.74.357	Applicable	Establishes air sampling and monitoring requirements for asbestos abatement projects, including for building clearance after abatement.	These requirements will be followed unless an equivalent or more stringent approach is deemed appropriate.			✓
MACA, MCA 75-2-501 et seq., ARM 17.74.351, ARM 17.74.365	Applicable/ Relevant and Appropriate/ Other Requirements	Adopts and incorporates by reference 40 CFR subparts A and M (NESHAP) for asbestos, and the National Institute of Occupational Safety and Health Manual of Analytical Methods for detecting asbestos by phase contrast microscopy and a description of the 7402 Analytical Method for detecting asbestos by transmission electron microscopy. It requires that training for asbestos workers, supervisors, inspectors, project management planners, and project designers meet requirements of 40 CFR 763, subpart E, Appendix C (Asbestos Model Accreditation Plan).	Only the provisions governing the handling of RACM would be considered relevant and appropriate requirements. Training requirements are not considered ARARs but would be considered as Other Requirements.	✓		✓

Statue and Regulatory Citation	ARAR Determination	Description	Comment	Chem-ical	Loca-tion	Action
State of Montana ARARs						
The Montana Asbestos Work Practices and Procedures Manual (the Manual)	Applicable/ Relevant and Appropriate/ Other Requirements	The Manual is adopted and incorporated by reference in ARM 17.74.351. It identifies practices and procedures for inspecting for asbestos, conducting asbestos projects, and clearing asbestos projects. MDEQ administers NESHAP through its asbestos control program. NESHAP contains standards that regulate building demolitions, renovations, asbestos disposal sites, and other sources of asbestos emissions.	Only the portions of the Manual that pertain to handling of RACM would be considered applicable or relevant and appropriate.	✓		✓
Clean Air Act of Montana, MCA 75-2-101, et seq., ARM 17.8.204, ARM 17.8.206	Relevant and Appropriate	Ambient Air Monitoring & Ambient Air Methods and Data require that all ambient air monitoring, sampling and data collection, recording, analysis and transmittal be in compliance with the Montana Quality Assurance Manual except when more stringent requirements are determined necessary.	These requirements will be followed unless an equivalent or more stringent approach is deemed appropriate.	✓		
Clean Air Act of Montana, MCA 75-2-101, et seq., ARM 17.8.220, ARM 17.8.223	Applicable	Ambient Air Quality. The standard for settled particulate matter (PM) specifies that settled PM in ambient air shall not exceed a 30-day average of 10 grams per square meter. PM-10 concentrations in the ambient air shall not exceed 150 micrograms/m3 of air on a 24-hour average and 50 micrograms/m3 of air on an annual average.	The removal action will involve significant disturbance of soil. Particulate/dust levels will need to be controlled during removal action. The ambient air quality standards include specific requirements and methodologies for monitoring and detection. These requirements will be followed unless an equivalent or more stringent approach is deemed appropriate.	✓		✓
Clean Air Act of Montana, MCA 75-2-101, et seq., ARM 17.8.304	Applicable	Visible Air Contaminants. No source may discharge emissions to the atmosphere that exhibit opacity of 20% or greater, averaged over six consecutive minutes. This standard is limited to point sources, but excludes motor vehicles.	No visible emissions are anticipated.	✓		✓
Clean Air Act of Montana, MCA 75-2-101, et seq., ARM 17.8.308	Applicable	Airborne Particulate Matter. Emissions of airborne particulate matter from any stationary source shall not exhibit opacity of 20 percent or greater, averaged over six consecutive minutes.	This standard applies to the production, handling, transportation, or storage of any material; use of streets, roads, or parking lots; and to construction or demolition projects.	✓		✓
ARM 17.8.220 and ARM17.24.761	Relevant and Appropriate	Fugitive dust control measures must be met.	Specifies measures for controlling fugitive dust during mining and reclamation activities. Some of these may be relevant and appropriate to control fugitive dust emissions as part of the site wide removal action.			✓

Statue and Regulatory Citation	ARAR Determination	Description	Comment	Chem-ical	Loca-tion	Action
State of Montana ARARs						
Local Air Pollution Control Program, MCA 75-2-301	Applicable	The provisions of the Lincoln County Air Pollution Control Program, approved by Montana DEQ pursuant to § 75-2-301, MCA and administered by Lincoln County, are designed to regulate activities in a designated Air Pollution Control District to achieve and maintain such levels of air quality as will protect human health and safety and, to the greatest degree practicable, prevent injury to plant and animal life and property, and facilitate the enjoyment of the natural attractions of Lincoln County.	The provisions of the Lincoln County Air Pollution Control Ordinance, 75.1.101 through 75.1.409 (October 10, 2008), are enforced by the Lincoln County Health Department and/or appropriate law enforcement officials. The regulations include dust control requirements, and limitations on outdoor burning of waste materials.		✓	✓

Statue and Regulatory Citation	ARAR Determination	Description	Comment	Chem-ical	Loca-tion	Action
State of Montana ARARs						
Montana Water Quality Act (MWQA), MCA 75-5-101, et seq., and implementing regulations at ARM 17.30.101	Applicable	General. The Clean Water Act, 33 U.S.C. § 1251, et seq., provides the authority for each state to adopt water quality standards (40 CFR Part 131) designed to protect beneficial uses of each water body and requires each state to designate uses for each water body. The MWQA, § 75-5-101, et seq., MCA establishes requirements for restoring and maintaining quality of surface and ground water. ARM 17.30.601, et seq., establishes the Water-Use Classification system. Under ARM § 17.30.609, the water-use for the Kootenai River is "B-1." Under ARM 17.30.623(1), B-1 waters are to be maintained suitable for drinking, culinary, and food processing use after conventional treatment; bathing, swimming and recreation; growth and propagation of salmonid fishes and associated aquatic life, waterfowl, furbearers; and agricultural and industrial water supply. Ditches and certain other bodies of surface water must also meet these requirements.[8] Certain portions of the A-1, B-1, and C-1 standards, codified at ARM §§ 17.30.622, 623, and 626, respectively, as well as Montana's nondegradation requirements, are presented below.	Expected to be outside the scope of the removal action. These requirements would apply if there are any discharges to surface water including discharges from drainage ditches to a surface water body.		✓	

8 As provided under ARM § 17.30.602(33), "'surface waters' means any waters on the earth's surface, including but not limited to, streams, lakes, ponds, and reservoirs; and irrigation and drainage systems discharging directly into a stream, lake, pond, reservoir or other surface water. Water bodies used solely for treating, transporting or impounding pollutants shall not be considered surface water."

Statue and Regulatory Citation	ARAR Determination	Description	Comment	Chem-ical	Loca-tion	Action
State of Montana ARARs						
Montana Water Quality Act, MCA 75-5-101, et seq., ARM 17.30.622	Applicable	Waters classified A-1 are, to be maintained suitable for drinking, and culinary and food processing purposes after conventional treatment for removal of natural impurities. These waters must also be maintained suitable for bathing, swimming and recreation, growth and propagation of salmonid fishes and associated aquatic life, waterfowl and furbearers, and for agricultural and industrial water supply purposes. The rule sets forth water quality standards for E. coli, dissolved oxygen, pH, turbidity, temperature, sediment, solids, color, concentrations of carcinogenic, bioconcentrating, toxic, radioactive, nutrient, or harmful parameters may not exceed standards set forth in MDEQ circular DEQ-7. The numerical standard for asbestos in DEQ-7 is based on the MCL for drinking water regulations of 7,000,000 fibers longer than 10 microns/liter. The concentration may not exceed this limit in any sample.	This is expected to be out of scope as the removal action is not expected to impact surface water or groundwater.	✓		✓
Montana Water Quality Act, MCA 75-5-101, et seq., ARM 17.30.623	Applicable	Waters classified B-1 are, after conventional treatment for removal of naturally present impurities, suitable for drinking, culinary and food processing purposes. These waters are also suitable for bathing, swimming and recreation, growth and propagation of salmonid fishes and associated aquatic life, waterfowl and furbearers, and use for agricultural and industrial purposes. This section provides also that concentrations of carcinogenic, bioconcentrating, toxic or harmful parameters which would remain in water after conventional water treatment may not exceed standards set forth in MDEQ circular DEQ-7. DEQ-7 provides that "whenever both Aquatic Life Standards and Human Health Standards exist for the same analyte, the more restrictive of these values will be used as the numeric Surface Water Quality Standard." The numerical standard for asbestos, is based on the MCL for drinking water regulations of 7,000,000 fibers/liter. The concentration may not exceed this limit in any sample.	This is expected to be out of scope as the removal action is not expected to impact surface water or groundwater.	✓		✓

Statue and Regulatory Citation	ARAR Determination	Description	Comment	Chem-ical	Loca-tion	Action
State of Montana ARARs						
Montana Water Quality Act, MCA 75-5-101, et seq., ARM 17.30.626	Applicable	Waters classified C-1 are to be maintained suitable for bathing, swimming and recreation, growth and propagation of salmonid fishes and associated aquatic life, waterfowl and furbearers, and use for agricultural and industrial purposes. The rule sets forth water quality standards for E. coli, dissolved oxygen must not be reduced below standards set forth in DEQ-7; pH, turbidity, temperature, sediment, solids, color, concentrations of carcinogenic, bioconcentrating, toxic or harmful parameters may not exceed standards set forth in MDEQ circular DEQ-7. The numeric standard for asbestos is based on the MCL for drinking water regulations of 7,000,000 fibers longer than 10 microns/liter. The concentration may not exceed this limit in any sample.	This is expected to be out of scope as the removal action is not expected to impact surface water or groundwater.	✓		✓
Montana Water Quality Act, MCA 75-5-101, et seq., ARM 17.30.637	Applicable	No waste may be discharged and no activities conducted which, either alone or in combination with other waste activities, will cause violation of surface water quality standards; provided a short term exemption from a surface water quality standard may be authorized by the MDEQ for "emergency remediation activities " under the conditions specified in § 75-5-308, MCA.	This requirement would be triggered only in the event that the removal action impacts surface or groundwater. It is not anticipated that excavation will take place close to any water body. Precautions will need to be put into place to prevent accidental release of asbestos containing soils into any surface water bodies.	✓		
Montana Water Quality Act, MCA 75-5-605	Applicable	It is unlawful to cause pollution of any state waters, or to place or cause to be placed any wastes where it will cause pollution of state waters.	It is unlikely that the removal action will cause pollution of state waters.			✓
Montana Water Quality Act, MCA 75-5-101, et seq., ARM 17.30.701 – 17.30.718	Applicable	Nondegradation of water quality – existing and anticipated uses of surface water and water quality necessary to support those uses must be maintained and protected.	The removal action is not expected to affect state waters.			✓
MCA 82-4-401, et seq. ARM 17.24.633	Relevant and Appropriate	Stormwater. All surface drainage from the disturbed area must be treated by the best technology currently available.	These requirements apply to land disturbed by opencut mining operations.			✓
ARM 17.30.601, et seq., and ARM 17.30.1301, et seq., including ARM 17.30.1341	Applicable	The substantative requirements of the general permit for stormwater for construction activities - General Permit for Storm Water Discharge	Generally, the permit requires best management practices to prevent discharges which have a reasonable likelihood of adversely affecting human health or the environment.			✓

Statue and Regulatory Citation	ARAR Determination	Description	Comment	Chem-ical	Loca-tion	Action
State of Montana ARARs						
		Associated with Construction Activity, Permit No. MTR100000 (April 16, 2007) (Expires midnight December 31, 2011) are applicable.				
The Natural Streambed and Land Preservation Act of 1975, MCA 75-7-101, et seq., ARM 36.2.401, et seq., and substantive provisions of MCA 87-5-502 and 87-5-504	Applicable/ Relevant and Appropriate	Establishes minimum standards if a project alters or affects a streambed, including any channel change, new diversion, riprap or other stream-bank protection project, jetty, new dam or reservoir or other commercial, industrial or residential development.	Expected to be outside the scope of the removal action. However, if the removal action requires stream-bank protection, the substantive portions of these requirements would be applicable.		✓	✓
Montana Floodplain and Floodway Management Act, MCA 76-5-401 et seq., and implementing regulations, ARM 36.15.601 et seq.	Applicable/ Relevant and Appropriate	The Floodplain and Floodway Management Act and regulations specify types of uses and structures that are allowed or prohibited in the designated 100-year floodway and floodplain. Portions of this action may take place near the Kootenai River or other waterways, and these standards are relevant to all actions within the floodplain.	Expected to be outside the scope of the removal action as no solid waste disposal will occur in the floodway or floodplain of the Kootenai River or other waterways.		✓	
Montana Floodplain and Floodway Management Act, MCA 76-5-401 et seq., ARM 36.15.602(5), ARM 36.15.605, ARM 36.15.703	Relevant and Appropriate	Solid and hazardous waste disposal and storage of toxic, flammable, hazardous or explosive materials are prohibited anywhere in floodways or floodplains.	Excavated materials will not be disposed in a flood plain.		✓	

Statue and Regulatory Citation	ARAR Determination	Description	Comment	Chem-ical	Loca-tion	Action
State of Montana ARARs						
Montana Floodplain and Floodway Management Act, MCA 76-5-401 et seq., ARM 36.15.701 ARM 36.15.702(2)	Relevant and Appropriate	In the flood fringe (i.e., in the floodplain but outside the floodway), residential, commercial, industrial, and other structures may be permitted subject to certain conditions relating to placement of fill, roads, and flood proofing. Standards for residential, commercial or industrial structures are found in ARM 36.15.702(2).	No structures, roads or fill will be placed within the flood fringe.		✓	
Solid Waste Management Act MCA 75-10-201, et seq., and implementing regulations ARM 17.50.501, et seq.	Applicable	The statute and regulations are applicable to the management and disposal of all solid wastes.	EPA expects to encounter soils with asbestos at concentrations <1% at as part of this removal. The material is not RACM and qualifies as Group III waste. Substantive requirements for Class III landfills are therefore applicable at locations where the material is disposed. Debris generated in connection with the removal action will be handled as Group IV waste.			✓
ARM 17.50.503	Applicable	Sets forth definitions for types of solid wastes including Group III and IV wastes.	The material to be excavated as part of the removal would most likely qualify as a Group III waste. Asbestos debris generated as part of any building renovation or demolition would qualify as a Group IV waste.			✓
ARM Title 17, Chapter 50, subchapter 11	Applicable	Sets forth standards that all solid waste disposal sites must meet including run-on and run-off control system requirements, requirements that sites be fenced to prevent unauthorized access, and prohibitions of point source and nonpoint source discharges which would violate Clean Water Act requirements.	Only the substantive requirements for Class III landfills are potentially applicable. Substantive requirements for Class IV landfills are applicable to debris.			✓
ARM 17.50.1115	Relevant and Appropriate	The owner or operator of a solid waste management facility shall manage asbestos contaminated material in accordance with 40 CFR Part 61, subpart M as adopted by reference in ARM 17.74.351.	These requirements will apply only if EPA encounters RACM in performing the removal. Portions of these requirements may be considered relevant and appropriate.			✓
MCA 75-10-212 and ARM 17.50.523	Applicable	For solid wastes, MCA § 75-10-212 prohibits dumping or leaving any debris or refuse upon or within 200 yards of any highway, road, street, or alley of the State or other public property, or on privately owned property where hunting, fishing, or other recreation is permitted. ARM 17.50.523 specifies that solid waste must be transported in				✓

Statue and Regulatory Citation	ARAR Determination	Description	Comment	Chem-ical	Loca-tion	Action
State of Montana ARARs						
		such a manner as to prevent its discharge, dumping, spilling or leaking from the transport vehicle.				
ARM 17.50.1117 and 17.50.1118	Applicable	These provisions set forth operating criteria for Class III and Class IV landfills.	EPA expects that any excavated soils will qualify as Group III wastes and any debris will qualify as Group IV wastes.			✓
ARM Title 17, Chapter 50, Subchapters 12, 13, and 14	Applicable	Provide additional design criteria, ground water monitoring, corrective action, and closure requirements for Class IV landfills. Subchapter 14 also contains closure requirements for Class III landfills.	EPA expects that any soils excavated would qualify as Group III wastes.			✓
MCA 75-10-206	Applicable	Provides for a variance from certain solid waste requirements where such variance would not result in a danger to public health or safety.				✓
Montana Endangered Species MCA 87-5-106, 107, and 111 ARM 12.5.201 (Montana Endangered Species List)	Applicable	Endangered species must be protected in order to maintain and, to the greatest extent possible, enhance their numbers. These sections list endangered species, prohibited acts, and penalties. See also MCA 87-5-201 (applicable), concerning protection of wild birds, nests, and eggs.	If State threatened or endangered species are identified within the removal areas, activities must be designed to conserve the species and their habitat. To date no species listed by Montana as threatened or endangered have been identified at the residential or commercial properties that are being addressed..			✓
Montana Antiquities Act, MCA 22-3-421, et seq.	Relevant and Appropriate	The Montana Antiquities Act addresses the responsibilities of State agencies regarding historic and prehistoric sites including buildings, structures, paleontological sites, archaeological sites on state owned lands. Each State agency is responsible for establishing rules regarding historic resources under their jurisdiction which address National Register eligibility, appropriate permitting procedures and other historic preservation goals. The State Historic Preservation Office maintains information related to the responsibilities of State Agencies under the Antiquities Act.	If heritage properties or paleontological remains are identified, action must be taken for their protection and preservation.		✓	
Montana Human Skeletal Remains and Burial Site	Applicable	The Human Skeletal Remains and Burial Site	If human skeletal remains or burial sites are encountered during removal activities, these		✓	

Statue and Regulatory Citation	ARAR Determination	Description	Comment	Chem-ical	Loca-tion	Action
State of Montana ARARs						
Protection Act (1991), MCA 22-3-801, et seq.		Protection Act is the result of years of work by Montana Tribes, State agencies and organizations interested in ensuring that all graves within the State of Montana are adequately protected.	requirements will be applicable.			
Stream Protection MCA 87-5-502 and 504	Applicable (Substantive Provisions Only)	Provide that a state agency or subdivision shall not construct, modify, operate, maintain or fail to maintain any construction project or hydraulic project which may or will obstruct, damage, diminish, destroy, change, modify, or vary the natural existing shape and form of any stream or its banks or tributaries in a manner that will adversely affect any fish or game habitat. The requirement that any such project must eliminate or diminish any adverse effect on fish or game habitat is applicable to the state in approving removal actions to be conducted. The Natural Streambed and Land Preservation Act of 1975, MCA 75-7-101, et seq., (Applicable -- substantive provisions only) includes similar requirements and is applicable to private parties as well as government agencies.	Consultation with the Montana Department of Fish, Wildlife and Parks, and any conservation district or board of county commissioners (or consolidated city/county government) is encouraged during the designing and implementation of the removal action.		✓	
Noxious Weeds, MCA 7-22-2101,et seq. and ARM 4.5.201, et seq.	Applicable	MCA 7-22-2101(8)(a) provides that "noxious weeds" must be managed consistent with weed management criteria developed under MCA 7-22-2109(2)(b).				✓
Montana Occupational Safety and Health Act MCA 50-71-111, et seq., ARM 17.74.101 ARM 17.74.102	Other Requirements	ARM 17.74.101, along with the similar Federal standard in 29 CFR §1910.95, addresses occupational noise. ARM 17.74.102, along with the similar federal standard in 29 CFR 1910.1000 addresses occupational air contaminants.	These requirements will be addressed as part of the Health & Safety Plan and do not meet the definition of an ARAR.			✓
Montana Safety Act MCA 50-71-201, 202 and 203, and 204	Other Requirements	Every employer must provide and maintain a safe place of employment, provide and require use of safety devices and safeguards, and ensure that operations and processes are reasonably adequate to render the place of employment safe. The employer must also do every other thing reasonably necessary to protect the life and safety of its employees. Employees are prohibited from refusing to use or interfering with the use of safety devices.	These requirements will be addressed as part of the Health & Safety Plan and do not meet the definition of an ARAR.			✓

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State of Montana ARARs						
Employee and Community Hazardous Chemical Information Act, MCA 50-78-201, MCA 50-78-202, MCA 50-78-204	Other Requirements	State that each employer must post notice of employee rights, maintain at the work place a list of chemical names of each chemical in the work place, and indicate the work area where the chemical is stored or used. Employees must be informed of the chemicals at the work place and trained in the proper handling of the chemicals.	These requirements will be addressed as part of the Health & Safety Plan and do not meet the definition of an ARAR.			✓

Removal Compliance with ARAR Evaluation	
Evaluation Factors for Compliance with ARARs	**Evaluation Summary**
Compliance with Chemical-Specific ARARs	Contaminated soil at depth, contained in-place with soil cover, with all surface soil removed and disposed of offsite ,excavations backfilled would physically address contaminant sources and prevent discharges of asbestos fibers to air, thus meeting visible emissions requirements of NESHAP and chemical-specific ARARs for air.
Compliance with Location-Specific ARARs	Location-specific ARARs for the removal would be addressed during implementation of the removal action.
Compliance with Action-Specific ARARs	Action-specific ARARs for the removal would be addressed during implementation of the removal action. Specifically, as per EPA's determination, the cover requirements specified under NESHAP (40 CFR 61.151) are a potential consideration as a relevant and appropriate ARARs for the site and would be in compliance with this ARAR as allowed under 40 CFR 61.151(c).

Acronyms

ARARs	Applicable or Relevant and Appropriate Requirements
ARM	Administrative Rules of Montana
BMP	Best Management Practices
CAA	Clean Air Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
EPA	U.S. Environmental Protection Agency
MCA	Montana Code Annotated
NESHAP	National Emission Standards for Hazardous Air Pollutants
NHPA	National Historic Preservation Act
NRCS	Natural Resources Conservation Service
OSHA	Occupational Safety and Health Administration
RACM	Regulated Asbestos Containing Material
RCRA	Resource Conservation and Recovery Act
SHPO	State Historic Preservation Office
TSCA	Toxic Substances Control Act
U.S.C	United States Code