



DRAFT ENVIRONMENTAL ASSESSMENT
for the proposed
Lincoln County Class IV Landfill Expansion Project
Libby, Montana

Solid Waste Section
PO Box 200901
Helena MT 59620-0901

October 11, 2019

Table of Contents

1. PURPOSE AND NEED FOR PROPOSED ACTION	6
1.1. Summary	6
1.2. Background	6
1.3. Purpose and Need.....	6
1.4. Location Description and Study Area.....	8
1.5. Regulatory Responsibilities and Requirements	9
1.6. Public Participation	10
2. DESCRIPTION OF ALTERNATIVES	11
2.1. Introduction	11
2.2. DEQ Alternative 1 – NO ACTION ALTERNATIVE	11
2.3. DEQ Alternative 2 – PROPOSED ACTION.....	11
2.3.1. Landfill Design and Construction	12
2.3.1.1. Landfill Features.....	12
2.3.1.2. Landfill Liner Design	13
2.3.1.3. Landfill Unit Construction	14
2.3.1.4. Storm Water Controls Construction	14
2.3.1.5. Soil Stockpiles.....	14
2.3.1.6. Final Closure.....	14
2.3.2. Landfill Operations, Monitoring, Closure, and Maintenance	15
2.3.2.1. Personnel	15
2.3.2.2. Operating Hours.....	15
2.3.2.3. Site Access.....	15
2.3.2.4. Landfill Equipment	16
2.3.2.5. Acceptable Wastes.....	16
2.3.2.6. Waste Screening	16
2.3.2.7. Prohibited Wastes.....	17
2.3.2.8. Recordkeeping	17
2.3.2.9. Landfilling Procedures.....	18
2.3.2.10. Temporary Storage of ACWM.....	21
2.3.2.11. Wet Weather Operations.....	21

2.3.2.12.	Dust Control	21
2.3.2.13.	Decontamination	23
2.3.2.14.	Litter Control	23
2.3.2.15.	Leachate Control	23
2.3.2.16.	Storm Water Control.....	23
2.3.2.17.	Erosion Control	24
2.3.2.18.	Stop Work, Process Review, and Contingency Planning.....	24
2.3.2.19.	Partial and Final Closure.....	26
2.3.2.20.	Financial Assurance	27
2.3.2.21.	Post-Closure Care.....	27
3.	AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES BY RESOURCE	28
3.1.	Location Description and Study Area.....	28
3.2.	Impacts.....	30
3.2.1.	Wildlife and Habitats.....	32
3.2.1.1.	Threatened and Endangered Species	32
3.2.1.2.	Species of Concern	32
3.2.2.	Hydrology	33
3.2.2.1.	Surface Water	34
3.2.2.2.	Ground Water	34
3.2.3.	Geology and Soils	35
3.2.3.1.	Geology	35
3.2.3.2.	Soils	36
3.2.4.	Air Quality	39
3.2.5.	Industrial, Commercial, and Agricultural Activities.....	46
3.2.6.	Traffic and Utilities.....	46
3.2.7.	Visuals	46
3.2.8.	Noise	46
3.2.9.	Demands for Government Services	47
3.2.10.	Cultural Uniqueness and Diversity.....	47
3.2.11.	Socioeconomic	47
3.3.	Cumulative Impacts	47

4. FINDINGS	48
4.1. Other Groups or Agencies Contacted or Contributing to the EA.....	50
4.2. Authors.....	50
REFERENCES	50

Tables

Table 1: Applicable Regulatory Activities	9
Table 2: Phases of ACWM Management Affecting Disposal	18
Table 3: Sample Stations for Ambient Air Monitoring.....	22
Table 4: Impacts	30
Table 5: Federally Established Species List	32
Table 6: Montana Recognized Species of Concern List	33
Table 7: Soils Engineering Report	38
Table 8: Libby, MT Temperature Data, 2000-2018.....	43
Table 9: Libby, MT Precipitation Data, 2000-2018	44

Figures

Figure 1: Topographic Map of the Class IV Unit.....	7
Figure 2: Aerial Photo of the Class IV Unit	8
Figure 3: Landfill Design for the Class IV Unit	13
Figure 4: Final Cover Grade for the Class IV Unit.....	15
Figure 5: Vicinity Map	29
Figure 6: Geologic Map of Surrounding Area.....	36
Figure 7: Aerial Photo of Soil Delineation	37
Figure 8: Libby, MT Wind Rose.....	42

List of Acronyms

ACWM – Asbestos-Containing Material; waste containing any amount of asbestos	MPDES – Montana Pollutant Discharge Elimination System
AMSL – Above Mean Sea Level	MSL – Montana State Library
ARM – Administrative Rules of Montana	NOI – Notification of Intent
CAA – Clean Air Act of Montana	NRCS – Natural Resource Conservation Service
CFR – Code of Federal Regulations	O&M – Operation and Maintenance
Class IV Unit - existing 10.5-acre Class IV landfill unit	PCB – Polychlorinated Biphenyls
County – Lincoln County	PPE – Personal Protective Equipment
CQA/CQC – Construction Quality Assurance and Construction Quality Control	Proposed Action - dispose of 123,400 cubic yards of Group IV and asbestos-containing waste material (ACWM) over approximately 100 years
DEQ – Montana Department of Environmental Quality	RCRA – Resource Conservation and Recovery Act
Draft EA – draft environmental assessment	SAP – Sampling and Analysis Plan
EA – Environmental Assessment	SHPO – State Historic Preservation Office
EIS – Environmental Impact Statement	SWMA – Solid Waste Management Act
EPA – Environmental Protection Agency	SWMS – Solid Waste Management System
FA – Financial Assurance	TSCA – Toxic Substance Control Act
FWP – Montana Department of Fish, Wildlife, and Parks	USFWS – United States Fish and Wildlife Service
GCCS – Gas Collection and Control System	USGS – United States Geological Survey
GWIC – Ground Water Information Center	WQA – Water Quality Act
LEL – Lower Explosive Limit	WSR – Waste Shipment Record
MBMG – Montana Bureau of Mines and Geology	
MCA – Montana Code Annotated	
MDT – Montana Department of Transportation	
MEPA – Montana Environmental Policy Act	
MNHP – Montana Natural Heritage Program	

1. PURPOSE AND NEED FOR PROPOSED ACTION

1.1. Summary

This draft environmental assessment (Draft EA) was prepared for the proposed expansion of the Libby Class II landfill (Libby Landfill) in accordance with the Montana Environmental Policy Act (MEPA). Lincoln County (County) is currently licensed to operate a 95-acre Class II Solid Waste Management System (SWMS) near Libby, Montana. On January 23, 2019, the County applied to the Department of Environmental Quality (DEQ) for the license expansion of the active Libby Landfill. The expansion includes an existing 10.5-acre Class IV landfill unit (Class IV Unit), currently managed by the Environmental Protection Agency (EPA). The application proposes transfer of management and the continued management of the Class IV Unit, from EPA to Lincoln County, to dispose of 123,400 cubic yards of Group IV and asbestos-containing waste material (ACWM) over approximately 100 years (Proposed Action). The operation and maintenance (O&M) plan, currently in practice at the Class IV Unit under EPA management, would be adopted by Lincoln County. In accordance with ARM 17.50.540 and 17.50.1118(d), financial assurance would be provided in a trust fund, according to DEQ-approved cost estimates, for closure and post-closure care of the Class IV Unit expansion.

1.2. Background

In 2003, DEQ initially reviewed, mitigated, and approved the U.S. Environmental Protection Agency's (EPA) proposed Class IV Unit design, operation, and monitoring for its *equivalence* to a Montana-licensed Class IV landfill, as required by EPA's agreements with DEQ and the County. The Class IV Unit construction was approved by DEQ for operation on County land in 2004. EPA has since managed the Class IV Unit primarily for the disposal of Group IV wastes and ACWM removed from various EPA superfund emergency cleanup sites located in and surrounding Libby, Montana.

The EPA Superfund operation of the Class IV Unit was exempted from regulation under the Solid Waste Management Act (SWMA) and the Administrative Rules of Montana (ARM or Rules). The proposed transfer of the Class IV unit from EPA to Lincoln County would remove this exemption and requires DEQ approval of Libby Landfill's license expansion for the continued Group IV and ACWM disposal activities at the Class IV Unit.

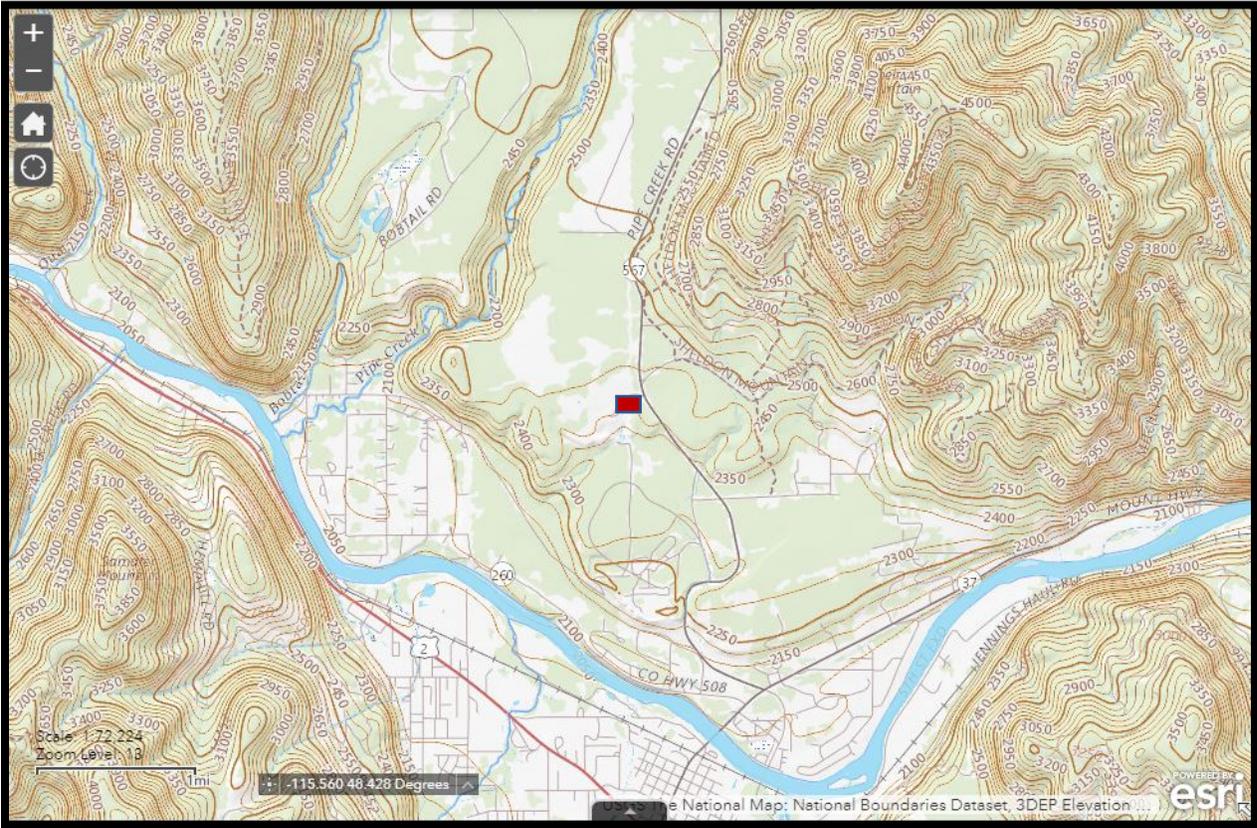
1.3. Purpose and Need

DEQ's purpose and need in conducting the environmental review is to act upon Lincoln County's proposed expansion of the Libby Landfill to adopt and continue

to operate the Class IV Unit in compliance with the SWMA. Under ARM 17.50.410, The Rules establish the minimum requirements for the licensing of all SWMS proposals.

Lincoln County must obtain a license expansion from DEQ before it may operate the Class IV Unit for disposal of Group IV and ACWM at the Libby Landfill. DEQ’s decision to approve or deny the Proposed Action depends upon compliance and consistency of the application with the SWMA, Clean Air Act of Montana (CAA), and Montana Water Quality Act (WQA) established by Montana Code Annotated (MCA or Laws), and with solid waste management criteria as required in the associated Rules.

**Figure 1: Topographic Map of the Class IV Unit
(in red)**



Source: USGS National Map 2019 (NOT TO SCALE)

1.4. Location Description and Study Area

The Class IV Unit is located on 10.5 acres of County property on the Libby Landfill's west boundary (**Figure 2**). Access is to the west, from Pipe Creek Road (MT Highway 567). The Class IV Unit is in the NW1/4 of the NE1/4 of Section 28, Township 31 North, Range 31 West, Montana Principal Meridian (MPM). The study area perimeter extends one mile outside the perimeter of the Class IV Unit.

Figure 2: Aerial Photo of the Class IV Unit

(Class IV Unit outlined in green; Libby Landfill outlined in red; Lincoln County property parcels outlined in orange. Blue arrows show surface water runoff to southeast ponds)



N↑

Source: Lincoln County, 2018 (**NOT TO SCALE**)

1.5. Regulatory Responsibilities and Requirements

DEQ is responsible for issuing SWMS licenses under the SWMA. The license application must contain a plan of operations stating the type of disposal techniques that would be used to store the Class IV waste. It must also include a closure and post-closure care plan in sufficient detail to allow DEQ to determine whether requirements of the SWMA would be satisfied.

DEQ is also responsible for protecting air quality under the CAA, and water quality and quantity under the WQA. The options that DEQ has for decision-making upon completion of the EA are:

- (1) Denying the application if the Proposed Action would violate SWMA, the CAA, or the WQA;
- (2) Approving the application as submitted;
- (3) Approving the application with agency mitigations; or
- (4) Determining the need for further environmental analysis to disclose and analyze potentially significant environmental impacts.

Table 1 provides a listing of any state, local, or federal agencies that may have overlapping or additional jurisdiction or environmental review responsibility for the Proposed Action and the permits, licenses and other authorizations required.

Table 1: Applicable Regulatory Activities

(List of agencies involved and their respective or licensing requirements)

Applicable Regulatory Activities	
Agencies	Responsibilities
DEQ – Waste and Underground Tank Management Bureau	SWMS license
DEQ – Air Quality Bureau	Air quality permitting
DEQ – Water Protection Bureau	Montana Pollutant Discharge Elimination System (MPDES) permit

Lincoln County Health Officer	SWMS license validation by county health officer
Lincoln County	County road construction and maintenance, land use, and weed plan approval

1.6. Public Participation

Pursuant to ARM 17.4.610 (3), DEQ is responsible for providing opportunities for public review consistent with the seriousness and complexity of the environmental issues associated with a proposed action and the level of public interest. Methods of accomplishing public review include:

- Publishing a news release or legal notice to announce the availability of an EA, summarizing its content and soliciting public comment;
- Holding public meetings or hearings;
- Maintaining mailing lists of persons interested in a particular action or type of action;
- Notifying them of the availability of EAs on such actions; and
- Distributing copies of EAs for review and comment.

DEQ determined the public participation is warranted for this action and is conducting a 30-day public comment period for the Draft EA which begins on October 11. Notification will be sent to adjacent landowners and other interested parties. A public notice announcing the Draft EA's availability is posted on the DEQ website: <http://deq.mt.gov/Public/notices/solidwastelegalpublicnotice>, and published in the local newspaper.

The County's application and associated documents are public record and may be accessed or copied during DEQ's normal business hours.

2. DESCRIPTION OF ALTERNATIVES

2.1. Introduction

This section describes the Proposed Action and reasonable alternatives to Lincoln County's Proposed Action, such as the No Action alternative. MEPA requires state agencies to consider the No Action and reasonable alternatives to a proposed action that are reasonably available and prudent to consider. The alternate approach or course of action must appreciably accomplish the same objectives as the proposed action and is realistic, technologically available, and that bears a logical relationship to the proposal being evaluated.

Except where noted, the description of the Proposed Action closely follows the materials that DEQ previously reviewed and approved for EPA in 2004 and 2009, respectively.

Two designs were available for adoption in the original Class IV liner and cover systems designs in 2003. DEQ has dismissed these two designs from further consideration in this analysis because proposed alternative design demonstrations were approved instead.

2.2. DEQ Alternative 1 – NO ACTION ALTERNATIVE

Under the No Action alternative, the license boundary expansion and continued operation of the Class IV Unit would be denied by DEQ. Therefore, disposal of Group IV waste and ACWM in the Class IV Unit would cease. All Class IV wastes would need to be disposed of at another location. Final cover would be installed over the Class IV Unit, and final closure of the Class IV Unit would initiate the 30-year post-closure care period as required (**Section 2.3.2.21**).

2.3. DEQ Alternative 2 – PROPOSED ACTION

The County proposes to adopt all elements of the Class IV Unit currently operated by the EPA by executing a Class IV expansion of the Libby Landfill. In addition to specific licensing requirements, DEQ has evaluated the consistency of the Lincoln County proposal with materials approved when the EPA Class IV Unit was initially constructed for operation in 2004. Consequently, DEQ's review of the Proposed Action did not cause any substantial changes to the Class IV Unit plans, waste management activities, monitoring, or closure and post-closure compliance. Landfilling activities would continue in the Class IV Unit for approximately 100 years, or until landfill capacity is reached.

2.3.1. Landfill Design and Construction

The Class IV Unit provides a fenced and gated exclusion zone with a decontamination zone and disposal area consisting of the following waste management elements:

1. Gatehouse, scale, trailer, water tanks, and storage shed
2. Staging area for wetting offloaded waste and capturing wash-down water
3. Class IV disposal cells A through D (total capacity 173,400 cubic yards)
4. Cover soil stockpiles
5. Storm water control structures and pond
6. Support and decontamination area for equipment and personnel

Haul trucks delivering Group IV wastes and ACWM to the Site would enter the Lincoln County property via Libby Landfill Road, then bear onto the northern internal road leading west to the gate at the northeast corner of the fenced Class IV Unit.

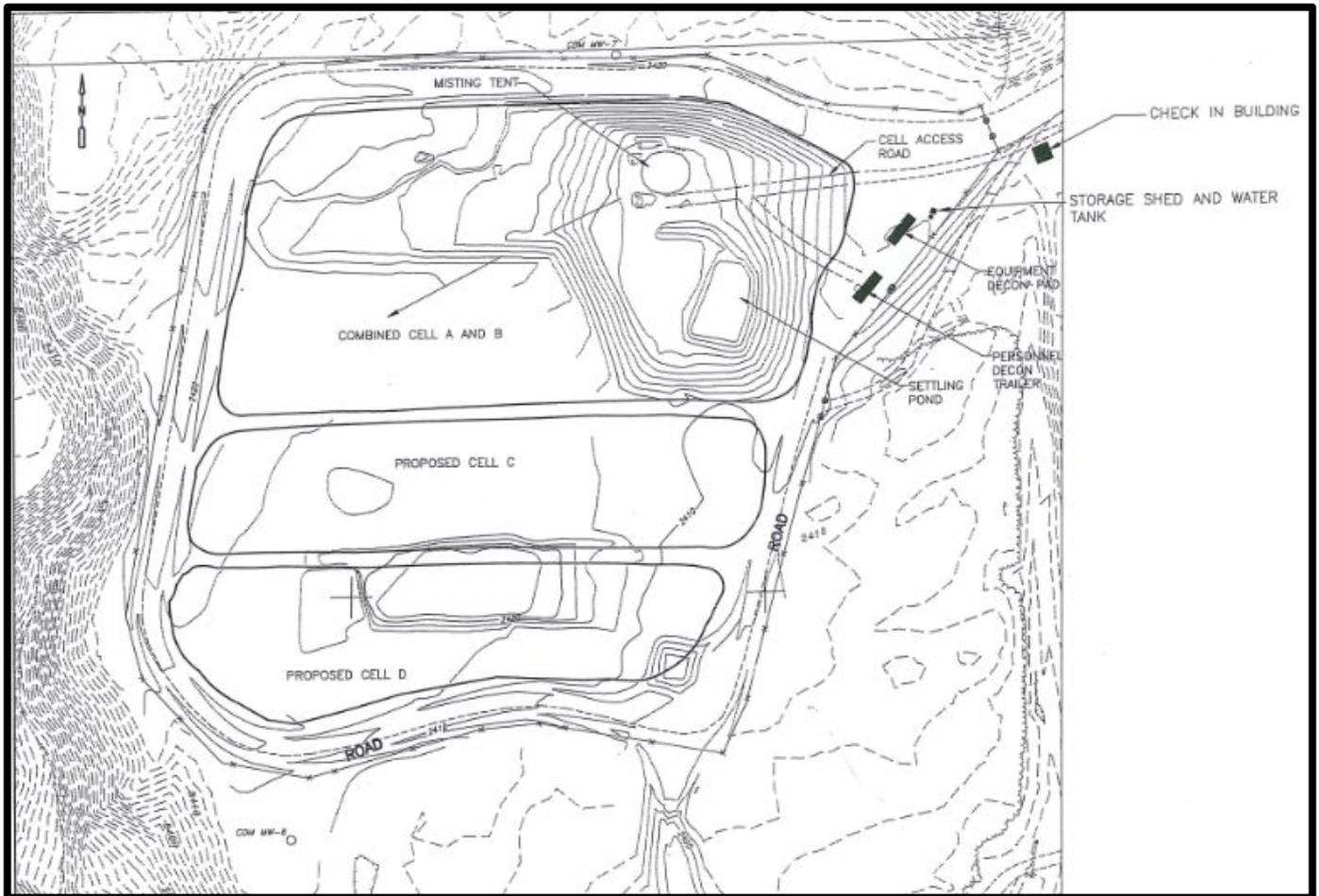
2.3.1.1. Landfill Features

The Class IV Unit design and operation included construction of the following features (**Figure 3**):

- Interior and exterior roads
- Waste disposal cells A, B, and C
- Water supply, misting dome, pond, and staging area systems
- Equipment and personnel decontamination systems
- Ground water monitoring system
- Soil stockpiles
- Storm water control system and pond
- Perimeter fence, berms, and ditches

The Class IV Unit is currently accessed through a locking gate and the perimeter is surrounded by a 6-foot high chain-link fence, topped with three strands of barbed wire that segregates the Class IV Unit operations from the Libby Landfill. Warning signs are displayed at all entrances and at 330-foot intervals along the perimeter of the Class IV Unit where ACWM is disposed. Outside the gated fence, a gatehouse scale checkpoint maintains an exclusion zone with a support zone inside the fence adjacent to the northeast ramp entering the Class IV Unit. Waste is managed in the contamination zone where wetting, ACWM disposal, and decontamination operations are isolated.

Figure 3: Landfill Design for the Class IV Unit



Source: Great West Engineering, 2018

2.3.1.2. Landfill Liner Design

The Class IV Unit overlies glacial lakebed and outwash deposits of an ancient glacial lake situated on one of several lakebed terraces bordering the Kootenai River Valley. The combined landfill Cells A and B (approx. 43,350 cy capacity each) are expanding south and excavated to 15-ft depth. The natural base hydraulic conductivity is between 2.1×10^{-6} to 3.5×10^{-4} cm/sec from lab testing of Shelby tube samples. The Class IV Unit is located within a ground water monitoring network that extends to surround both the Class IV Unit and the Libby Landfill. As previously approved for the Class IV Unit, a landfill liner exemption [ARM 17.50.1205(1)(b)] would be allowed for the County's Class IV Unit, which is located within the ground water monitoring network (analytes in **Attachment A**) of the Libby Landfill.

2.3.1.3. Landfill Unit Construction

The Class IV Unit was designed with a wetting and offloading area adjacent to the NE entrance ramp. Four disposal cells (A through D) extend east to west and would be filled in sequence from north to south (**Figure 3**). Support features include the equipment storage shed and water tank, equipment decontamination (decon) pad, and personnel decon trailer. Demolition and vacuum trucks enter at the staging and offloading area where loads are properly wetted before placing waste in the active disposal cell. Cells A and B are currently active under EPA management in the northwest footprint, adjacent to the staging area.

2.3.1.4. Storm Water Controls Construction

Elevations within the Class IV Unit area vary from 2390 to 2420 feet above mean sea level (amsl). A run-on control ditch and a run-off drainage ditch would follow the outside and inside of the gravel access road that surrounds the active Class IV Unit. The run-on ditches collect clean storm water draining from uphill and off the road, and routes it away from the Class IV Unit. Internal run-off, from outside the staging and decon areas, is routed to the detention pond (at southeast corner of Cell D) which discharges into a series of storm water detention ponds located in the licensed area south of the active Libby Landfill.

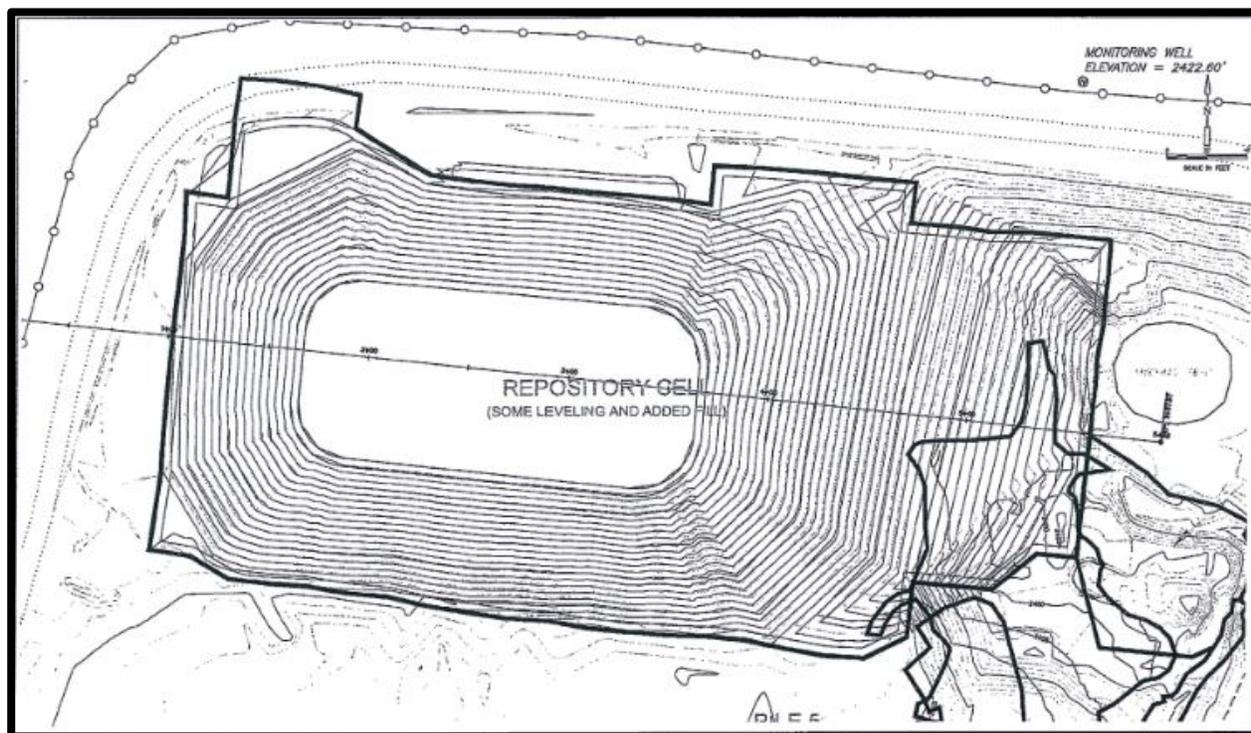
2.3.1.5. Soil Stockpiles

Soils excavated to construct Cells A and B are stockpiled on native ground in the area proposed for Cells C and D. Soils excavated to construct Cells C and D would be stockpiled over the Cells D and B areas, respectively.

2.3.1.6. Final Closure

The 2 feet of topsoil initially removed and stockpiled onsite will be used to construct the 24-in thick final cover that would include a soil barrier beneath a revegetated growth layer. The lower barrier would consist of a compacted 18-inch earthen layer with saturated hydraulic conductivity not greater than 1×10^{-5} cm/sec. Erosion would be controlled by placement of a six-inch topsoil layer capable of sustaining plant growth of an approved seed mix, specified in the closure plan.

Figure 4: Final Cover Grade for the Class IV Unit



Source: Great West Engineering, 2018

2.3.2. Landfill Operations, Monitoring, Closure, and Maintenance

2.3.2.1. Personnel

The Lincoln County Health Department and Asbestos Resource Program (ARP) would manage the Class IV Unit. The Class IV Unit operations would be staffed by a third-party contractor. Landfill personnel would include at least a scale-house attendant, two decon and wash-down operators, one equipment operator, and a spotter during busy periods.

2.3.2.2. Operating Hours

Attendants would be present from 8 am to 5 pm on days scheduled for delivery of ACWM, typically after a cleanup incident.

2.3.2.3. Site Access

The gate remains locked except on scheduled delivery days. On these days, the Class IV Unit would be accessed at the Class IV Unit scale house after entry to the Libby Landfill to the west off Pipe Creek Road. The attendant would open the gate to the support zone after checking the

Waste Shipment Record (WSR). The guard, an employee of the landfill, provides copies of the manifests to the site manager.

2.3.2.4. Landfill Equipment

A bulldozer and front-end loader would be on site to conduct landfill operations, including waste movement and burial.

2.3.2.5. Acceptable Wastes

Acceptable wastes include:

- Gross vermiculite and non-bagged ACWM
- Double bagged ACWM
- Asbestos-contaminated demolition debris (would arrive double-burrito wrapped)
- Group III waste (inert waste)
- Group IV waste (construction and demolition waste)
- Soil containing asbestos

2.3.2.6. Waste Screening

Screening begins at the scale house. The attendant would visually inspect loads prior to entrance to Libby Landfill.

Before transporting ACWM to the Class IV Unit for disposal, the County's removal contractors are required to pre-screen the waste for acceptability. Prescreening involves visual inspection of residential, commercial, industrial, and public buildings and testing of soils before proceeding with plans for an asbestos removal or demolition project.

Prior to disposal, the County's removal contractors would process ACWM or other demolition debris into relatively small-sized pieces.

Upon disposal, the landfill operator would visually inspect loads as they are deposited in the Class IV Unit's working face. The landfill operator shall reject truckloads of unacceptable material as detected during the waste disposal process

Accepted wastes would be adequately covered with six-inch daily cover soil and be compacted in place at the working face on the Class IV Unit lift.

The screening program would document random inspection of loads, unless other steps are taken to ensure that incoming loads do not contain prohibited waste.

2.3.2.7. Prohibited Wastes

Prohibited wastes include:

- Nonfriable asbestos
- Liquid waste
- Group II waste (municipal solid waste)
- Hazardous or Toxic Substances Control Act (TSCA) waste
- Petroleum-contaminated soils
- Technologically Enhanced Naturally Occurring Radioactive Material (TENORM) waste
- Polychlorinated byphenol (PCB) waste

DEQ would be notified if these prohibited wastes are discovered at the Class IV Unit.

2.3.2.8. Recordkeeping

Currently, there is no scale at the Libby Landfill or at the Class IV Unit. All ACWM loads accepted for disposal at the Class IV Unit shall be tracked via the WSR by the landfill operator. The landfill operator shall provide the landfill manager with one copy of each WSR. The WSR shall be filed by the landfill manager. For all ACWM received, the operator of the landfill shall maintain records including, at a minimum:

1. The name, address, telephone number of the generator
2. The name, address, and telephone number of the transporter
3. The quantity of the ACWM in cubic yards
4. The presence of improperly enclosed or uncovered waste
5. The date of receipt
6. The location of the buried ACWM

The landfill operator must retain records at the landfill in an alternate location approved by DEQ. Duplicate landfill records will be kept at the Lincoln County Environmental Health office. All information must be made available for inspection by DEQ and the public. According to ARM 17.74.360, records must be maintained for 30 years and made available to DEQ when requested.

If the landfill operator plans to uncover and excavate, or otherwise disturb, any ACWM placed in the landfill, the landfill operator must notify

the DEQ at least 45 days prior to the disruptive activity. The notification must include:

1. Starting and completion dates
2. Reason for disturbing the waste
3. Methods for controlling emissions during excavation, storage, transport, and disposal
4. Location of temporary storage area and final disposition site

2.3.2.9. Landfilling Procedures

All landfill personnel entering the exclusion zone shall be trained and shall wear proper Personal Protective Equipment (PPE). Each haul truck (i.e. vacuum truck, dump truck, or truck carrying a roll-off container) would stop at the gatehouse to present a completed Asbestos Waste Shipment Record to the guard for review before entering the Class IV Unit. All trucks entering the exclusion zone would be supplied with positive pressure units (PPU) and drivers would remain in the vehicle while in the exclusion zone. Vehicle windows would be rolled up and interior heaters or air conditioning units would be shut off. Roll-off truck personnel dumping gross ACWM would wear PPE Level C.

Table 2: Phases of ACWM Management Affecting Disposal

LOCATION	OPERATION	HANDLING	REPORT
<i>CONTAINMENT PHASE</i>			
Project Removal Site	Friable vermiculite ACWM in sealed vacuum truck boxes & other friable ACWM double bagged or double wrapped in sealed burrito roll offs or truckloads	Wetted during gross or clean removal or bagging of equipment & PPE with zero visible emissions	Site monitoring, WSR, & Generator label
<i>TRANSPORT PHASE</i>			
Landfill Gatehouse	Contained ACWM waste transported in covered vehicles to Class IV Unit where temporary storage possible	Adequately wetted & properly sealed containers	Copy WSR
<i>DISPOSAL PHASE</i>			
Landfill Exclusion			

Zone

Gross vermiculite ACWM vacuum boxes dumped in misting dome and trammed to Class IV Unit working face where ACWM burritos or bags also wetted, unloaded, & covered

Zero visible emissions for all wetted disposal

Log ACWM location & Signage

Landfill cells A and B remain currently active for disposal. Landfilling would continue by placing wetted waste in 3-foot lifts, applying a 6-inch layer of soil cover, and compacting the working face daily. Upon entry to the Class IV Unit exclusion zone, the haul truck would proceed down the ramp into the staging area. As directed by two support personnel, any vacuum trucks or roll-off vacuum boxes would first enter the misting dome to dump its load. The assistants would wet all ACWM loads with two hoses as dumping proceeds in the misting dome. Vacuum or roll-off truckloads of gross ACWM, like vermiculite insulation, are dumped directly into a concrete bin that is emptied by a front-end loader which trams each bucket load from the dome to the working face. After the door of each vacuum box is opened to dump into the bin, support personnel would vacate the misting dome for 10 minutes or until no dust emissions are visible inside the tent.

The landfill operator would use appropriate equipment to transport the vermiculite insulation from the dome area to the cell. Then, waste would be spread over the working face in uniform lifts no greater than 3 feet in depth.

Other ACWM would arrive in tarped or covered vehicles as double bagged vermiculite, burrito-wrapped demolition debris or small amounts of soil, and other double-bagged friable ACWM waste. These haul trucks and roll-offs would be allowed to bypass the misting dome and proceed directly to the working face where the waste is sprayed with water as the load is dumped on the lift. Bagged ACWM would be handled separately and placed separately on the lift in a safe manner to avoid punctures or tears that could release dust and fibers.

A 6-inch layer of soil would be placed over the working face daily to cover all the waste. Additional applications of cover soil may be required as needed to thicken the daily cover and prevent disturbance of ACWM that could cause visible fugitive airborne dust. After daily cover soil is placed

on the cell, the waste would be compacted in a manner that avoids causing dust or lifting of the soil via buildup on the equipment traction.

No dumped material or ACWM would be left uncovered overnight by the landfill operator. Lifts of waste would be placed in a manner that prevents significant settlement and allows for landfill equipment and vehicles to safely drive over each lift during operations. Lifts would be finished to match the existing grade and contour of the disposal location.

After disposing of the ACWM, each truck would exit the cell and stop on the pad, decon all exterior portions of the truck, vehicle, or equipment (including filters) before it exits the exclusion zone. Suited landfill staff would enter the 3-stage decon trailer for decontamination before dressing to exit the exclusion zone.

Third Party Disposal

The County may allow selected private parties to operate the Class IV Unit for the disposal of ACWM on a case-by-case basis. Prior to allowing a third party to dispose of ACWM at the Class IV Unit, the County would provide the requesting party a copy of the most current landfill O&M plan. Prior to scheduling any ACWM removal, the third party would provide the County with a Sampling and Analysis Plan (SAP) for thorough characterization of the ACWM proposed for disposal in the Class IV Unit. The SAP would provide a description and scaled plan of the removal area, history of offsite land or facility uses, proposed removal activities and quantities, analytical parameters and methods, and the laboratories proposed to perform the analyses. The County may require up to two months for its review of the SAP. Following County's approval and certification of the SAP, the third party would provide the County with ACWM analytical test results for review.

Prior to scheduling any ACWM disposal activities, the County would require that the third party agree in writing to comply with all requirements described in the most current landfill O&M plan, air SAP, and the Health and Safety Plan (HASP). Furthermore, the third party would also submit an HASP to the County regarding its anticipated landfill activities. The third party's HASP would be in full accordance with all HASP requirements stipulated for any landfill operator. All contractors, subcontractors, transporters, consultants, engineers, vendors, suppliers, and others employed by the third party shall meet these requirements.

2.3.2.10. Temporary Storage of ACWM

Occasionally, wet weather or other adverse conditions would prevent the immediate disposal of ACWM after its generation and delivery to the Class IV Unit. A "warm" containment area would be identified with caution tape outside of the Class IV Unit perimeter fence and located between two concrete Jersey barrier walls. The Class IV Unit operator could temporarily store burrito-wrapped ACWM demolition roll-offs or gross vermiculite ACWM (double bagged and sometimes also in roll-offs) in the containment area. The Jersey barriers would provide a containment zone just outside the perimeter fence between the interior decontamination pad and the outside access road. The locked, airtight steel vacuum boxes and oversized ACWM (*e.g.* used vacuum hose) may be temporarily stored in the warm zone. All storage containers shall be labeled "Asbestos" and managed with restricted access.

The Libby Landfill maintains another 20-cubic yard container for the disposal of ACWM generated from private homes, commercial renovations, and other activities. Each licensed asbestos contractor must contact the Libby Landfill for approval prior to delivering properly packaged ACWM to place in the locked container. Material from this container must be properly managed and disposed of in the Class IV Unit.

2.3.2.11. Wet Weather Operations

During wet weather operations, disposal in the Class IV Unit would cease. When the cover soil is saturated with water, it could be lifted by sticking to vehicle tracks or tires during disposal operations. Consequently, ACWM would be uncovered and possibly transported away from the designated disposal area.

As noted above, waste delivered to the Class IV Unit would be temporarily stored in a secure area outside the gate until drier conditions allow normal disposal operations.

2.3.2.12. Dust Control

Dust control is essential to ACWM disposal operations at the Class IV Unit. The landfill operator ensures that all waste materials are properly wetted and no material becomes airborne during waste disposal operations, meeting the goal of "zero visible emissions". The application of sufficient water during ACWM disposal would occur during the unloading of gross vermiculite from all vacuum trucks and roll-off vacuum boxes in the misting dome. In addition to filling the dome atmosphere with a dense

fine mist of water, two assistants would spray the vacuum box loads as they are dumped into the concrete bin and saturated to control all gross vermiculite or ACWM emissions. Using a dedicated landfill water truck, all burrito-wrapped ACWM or soils contaminated with asbestos would be sprayed as these loads are directly dumped at the active face in the cell. The performance of onsite dust control systems is continually evaluated by mobile monitoring of personnel and an array of air monitoring stations surrounding the landfill outside the perimeter fence (see Air Sampling and Analysis Plan in **Attachment A**).

Table 3: Sample Stations for Ambient Air Monitoring

SAMPLE STATION LOCATION	SAMPLE NUMBERS	RATIONALE	REPORT
<i>BACKGROUND</i>			
Upwind Remote Reference ¹	Collect a minimum of two simultaneous samples 30° apart from prevailing wind lines less than 200 feet from fence	Establishes released fiber levels surrounding site	Monthly
<i>RELEASES</i>			
Downwind Detection	Deploy a minimum of 3 sampling stations within a 180° arc not more than 100 feet from fence	Detection of asbestos fibers released from the Class IV Unit	Daily
<i>ONSITE</i>			
Onsite Mobile Personnel	Obtain representative sample to determine average condition in dome and at working face	Verify, confirm, and document PPE level	Daily

All Unit roads would be watered or treated with magnesium chloride (or equivalent) as necessary to prevent generation of dust. Water would be sprayed onto soil stockpiles and cover soils to eliminate the potential for generating fugitive dust during dry or windy conditions. If watering or treatment methods are not successful in eliminating dust or other particulates, landfill operations must cease until conditions improve or effective dust control measures are implemented.

2.3.2.13. Decontamination

All personnel, vehicles, and equipment must be decontaminated to remove all vermiculite, ACWM, and soils or dust before leaving the exclusion zone. Decon is a defined process, noted in **Attachment B**. The support area includes clean water storage tanks, power washing equipment, a vehicle and equipment decon pad, and a 3-stage personnel decon trailer. Vehicles and equipment are sprayed at the decon pad using a pressure washer. Dedicated equipment, demobilized from the landfill, is subjected to a defined interior decon process and air filters are replaced. Personnel decon systems provide a negative air, filtrated dirty room, a shower area with potable water, and clean room.

2.3.2.14. Litter Control

Minor litter would be expected and regularly collected for disposal. The application of daily soil cover would greatly control litter.

2.3.2.15. Leachate Control

Leachate is liquid that has contacted, passed through, or emerged from solid waste and contains soluble, suspended, or miscible materials removed from the waste. ARM 17.50.502(19). Leachate would be generated from the Group IV and ACWM and would be collected at the base of the Class IV Unit. A leachate collection system is not required for the Class IV Unit when it is located within the Class II ground water monitoring network. Leachate drainages from the misting dome and working face are routed for capture in the low, unlined sump basin in the southeast decon area adjacent to the ramp. This leachate would remain in the sump for evaporation. The remaining wet ACWM solids scraped out of the drainage ditches and sump would be disposed in the Class IV Unit.

2.3.2.16. Storm Water Control

The primary onsite retention pond, located in the southeast corner of the Class IV Unit, would capture all clean sediment that drains from within the Class IV Unit. Discharge from this pond would channel into a culvert to pass under the perimeter road for capture in a secondary sediment pond (**Figure 2**). Sediment will again settle in the secondary sediment pond so clean storm water could be discharged via a drain and culvert into the Libby Landfill perimeter storm water ditch. This ditch discharges for final capture into the ponds near the existing southeastern license boundary.

Storm water drainage ditches would channel storm water off the outer road surrounding the Class IV Unit by routing flow into the same perimeter ditch to discharge into retention ponds located within the southeast licensed area.

Regular inspection of all features in the storm water control systems will be performed and maintenance will be provided as needed. All detention pond systems for the Class IV Unit and Libby Landfill are designed to detain the total discharge from a 25-year 24-hour storm event captured separately in each area as required. If a discharge from the retention pond is necessary, issuance of a general industrial storm water discharge permit by the DEQ Water Quality Bureau may be required.

2.3.2.17. Erosion Control

Erosion control fencing, made of filter fabric or an equivalent, shall be installed and maintained by the landfill operator on the downslope side of all soil stockpiles. The landfill operator would perform maintenance to ensure appropriate system-wide drainage controls, including vegetated berms and swales, or other best management practices (BMPs) that minimize erosion and control sediment release. Issuance of an erosion control permit by the DEQ Water Quality Bureau may be necessary during construction of cells 3 and 4 prior to lateral expansion of the Class IV Unit.

2.3.2.18. Stop Work, Process Review, and Contingency Planning

Because ACWM disposal operations can pose an immediate threat to public health and the environment, the following “stop work situations” would result in a shutdown of operations at the Class IV Unit:

1. Visible dust emissions during disposal operations
2. Failure by personnel to properly operate the misting dome system to wet gross vacuum box loads dumped into the bin
3. Failure by personnel to properly operate the spray hoses to wet demolition roll-off loads dumped at the working face
4. No access to water that is suitable for operations
5. Insufficient periodic removal and disposal of soils contaminated with asbestos captured by the interior drainage control features
6. Unacceptable radio communication between any personnel in the support and exclusion zones
7. Insufficient availability or use of proper PPE
8. Visible lightning

When a design element fails to perform adequately or conformance to designated operational controls is faulty, Class IV Unit operations could become hazardous. Mobile personnel monitoring of airborne ACWM inside the misting dome has yielded highly variable detections and has occasionally exceeded acceptable limits. Detections in the perimeter air monitoring can sometimes correlate with ACWM releases during the first three “stop work situations” listed above.

Additionally, some work practices at the Class IV Unit may also impact mobile personnel and perimeter monitoring results at the Class IV Unit. For example, if the vacuum boxes are hastily dumped, and inadequate time or water are provided for the wetting system to knock down dust, asbestos fiber levels gathered from mobile personnel monitoring are typically higher. Such elevated emissions have also been periodically detected by the air monitoring network surrounding the Class IV Unit perimeter outside the fence. Sufficient diligence and care in following approved landfill operations would ensure the safety and health of landfill personnel and the environment.

A Work Process Review (WPR) would ensure that approved operations are regularly followed and updated as necessary to control dust levels in the misting tent and within the Class IV Unit during disposal.

In the following circumstances, the landfill operator would stop work and immediately complete a WPR:

1. Two consecutive dump events yield a task-based mobile personnel monitoring level that exceeds the currently accepted standards; or
2. Any sample from ambient perimeter air monitoring or remote reference stations detect asbestos fibers at a level that exceeds the currently accepted standards.

The WPR would consist of an evaluation by the landfill operator to identify factors that contributed to the actual or potentially elevated asbestos exposures. For example, such factors can include the number of boxes dumped, time it took to dump the boxes, misting system or hose operation, or any other factors that may contribute to elevated mobile personnel or stationary air monitoring results.

The landfill operator would complete the WPR Form and submit it for review to the landfill manager within five working days of receiving notice of the asbestos fiber detection. In addition to listing contributing factors, the landfill manager would provide suggested improvements and

corrective actions to attempt to reduce ACWM dust levels for future dump events. These documents shall be included in the quarterly air monitoring report submitted to DEQ.

If the landfill operator plans to excavate or disturb any covered ACWM in the landfill, the landfill operator would notify the DEQ and request approval at least 45 days prior to the disruptive activity by providing the following:

- Starting and completion dates
- Reason for disturbing the waste
- Methods for controlling emissions during excavation, storage, transport, and disposal
- Location of temporary storage area and final disposition of waste

2.3.2.19. Partial and Final Closure

Full or partial closure of the Class IV Unit would proceed according to the existing approved closure plan (CP). Prior to full closure, the County shall first place a notice of intent to close the Class IV Unit in the operating record. Final closure activities would begin no later than 30 days after the date of final disposal of ACWM. A one-foot thick intermediate soil cover would be placed over any portion of the Class IV Unit that remains inactive after 180 days. Full or partial closure must be completed within 180 days following the initiation of closure construction. DEQ may grant an extension beyond 180 days if the necessity and the ability to prevent threats to human health and the environment are demonstrated.

As currently approved, an 18-inch thick soil barrier would be compacted to attain saturated hydraulic conductivity not greater than 1×10^{-5} cm/sec to minimize infiltration. To provide the soil needed for installing the final cover, the topsoil initially removed and stockpiled during construction of the Class IV unit cells would be used. A six-inch topsoil layer and specified seed mix would provide for sufficient revegetation by native plant species within one year. The final cover would be crowned with minimum 2 percent slope and drainage channels would route storm water toward perimeter control ditches and the cascaded series of storm water collection ponds along the south-to-southeast margin of the active Libby Landfill (**Figure 2**). All partial or full closure construction (and DEQ final approval) would proceed in conformance with a previously approved Construction Quality Assurance and Quality Control (CQA/CQC) Plan. The County submitted a recorded copy of the deed notation for the entire property that includes the Class IV Unit.

2.3.2.20. Financial Assurance

In accordance with ARM 17.50.540 and ARM 17.50.1118(1)(d), DEQ's approval of a Class IV landfill expansion requires the licensee to provide and maintain a Financial Assurance (FA) mechanism to cover costs associated with Class IV Unit closure and post-closure care. FA ensures that work associated with the Class IV Unit closure and post-closure care is completed in the event the County cannot or will not do so on its own accord. The County already maintains FA for the Libby Landfill. The FA required is based upon the calculated maximum costs associated with third-party closure of the maximum exposed landfill area and the performance of post-closure care activities. If the Class IV Unit is approved, the 2019 total cost estimate for FA is \$601,501 and includes projected 2019 closure costs of \$196,981 and annual post-closure costs of \$13,484, or \$404,520 total for the 30-year post-closure care period.

The trust fund mechanism and cost estimates for the Libby Landfill FA would be increased to properly cover the Class IV Unit. ARM 17.50.540(5)(a)(v) requires that the initial payment into the trust fund be made prior to the initial placement of waste in the Class IV Unit. DEQ would be the fund beneficiary and would control all release of money from the trust fund. The minimum annual payment required to cover the cost of closure and post-closure care is based upon the size of the projected largest open area of the landfill units. The projected largest open area is 10.4 acres. The FA cost is currently estimated to be \$196,981. A current payment of \$1,970 would be required annually based on the projected 100-year remaining life until closure of the Class IV Unit. The regulations require all Class IV facilities to update the FA cost estimates, including adjustments for inflation. Annual payments to the FA trust mechanism would be adjusted to ensure that it is adequately funded.

2.3.2.21. Post-Closure Care

The original PCP identifies the inspection, maintenance, and monitoring activities to be completed during the 30-year post-closure care period and identifies the frequency for conducting these activities. The final use of the Class IV Unit is rangeland.

According to the PCP, detailed inspections of the closed Class IV Unit will be conducted yearly during the 30-year post-closure care period, required in ARM 17.50.1404, and will include:

- Evaluation of the final cover for settlement, erosion, and quality of vegetation
- Inspection of drainage control facilities (berms, ditches, catch basins, piping, culverts, outlets, and ponds) for erosion, damage, blockage, or accumulation of sediment
- Condition and functionality of ground water and methane monitoring wells
- General site conditions (gates, locks, fencing, survey monuments, etc.)
- Evaluation of the FA

If damage or degradation to the final cover, drainage control facilities, monitoring systems, or general site features is noted, timely maintenance will be completed by the owner. Maintenance activities, described in the PCP, will follow manufacturer's specifications as necessary, and will meet all approved CQA/CQC procedures. The nature of the maintenance completed will be noted on the inspection form, which will be added to the operating record.

A report describing the inspections, conditions observed, corrective actions, maintenance activities, monitoring activities performed, and annual FA adjustments needed for the closed Class IV Unit will be submitted to DEQ annually and entered into the operating record. Routine ground water and methane monitoring will be performed by the licensee during the post-closure care period in accordance with the DEQ-approved ground water and methane monitoring plans.

3. AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES BY RESOURCE

3.1. Location Description and Study Area

The Proposed Action is located on County property in the NW1/4 of the NE1/4 of Section 28, Township 31 North, Range 31 West, MPM, and is approximately 2.5 miles north of the town of Libby, Montana (**Figure 1**). The study area for the impact analysis includes all lands and resources within a mile of the Class IV Unit. Specific resource analysis areas are based on the predicted locations of direct and secondary impacts that could result from the Proposed Action. A detailed description of the Proposed Action is included in Chapter 2.

In addition to County-owned property within the one-mile radius of the Class IV Unit, the study area has undeveloped federal Kootenai National Forest lands.

Pipe Creek is slightly more than one-mile northwest of the Class IV Unit and Kootenai River is 1.5 miles southwest of the Class IV Unit. The terrain generally slopes south on County property and beyond. A subdivision, accessed by Kootenai River Road, is located one mile west along the river (**Figure 5**).

Figure 5: Vicinity Map

(GWIC wells marked with orange circles; ground water monitoring wells marked with blue circles)



Source: Esri/ArcGIS and GWIC, Montana Bureau of Mines and Geology
(NOT TO SCALE)

3.2. Impacts

Table 4 shows a summary of the impacts of the Proposed Action.

Table 4: Impacts

Resource	Alternative 1 – NO ACTION	Alternative 2 – Proposed Action
Wildlife and Habitats	Closure of the Class IV Unit would include revegetation of native grasses to resemble the surrounding habitat. Once revegetation is achieved, wildlife could inhabit the Class IV Unit.	Minor impact. No habitats exist within the Class IV Unit because it has been operational since 2004 and it is fenced. Wildlife would inhabit the available habitats surrounding the Class IV Unit for approximately 100 years. (See Section 3.2.1)
Hydrology	No impacts.	No impacts. (See Section 3.2.2)
Geology and Soils	Closure of the Class IV Unit would include revegetation of native grasses to resemble the surrounding area. Soils would be improved because of revegetation. Erosion would be mitigated due to native grasses being established and soil health would be enhanced.	No additional impacts from current operations. (See Section 3.2.3)
Air Quality	No impacts.	No impacts. (See Section 3.2.4)
Industrial, Commercial, and Agricultural Activities	No impacts.	No impacts. (See Section 3.2.5)

Traffic and Utilities	Operations at the Class IV Unit would cease. Traffic to the area would slightly decrease as a result.	Minor impact. Operations would continue at the Class IV Unit. As a result, traffic would continue to access the Class IV Unit for an additional 100 years or when landfill reaches capacity. Traffic volumes would resemble current conditions. (See Section 3.2.6)
Visuals	No impacts.	No impacts. (See Section 3.2.7)
Noise	Noise levels would slightly decrease as a result for cease operations.	Minor impact. Operations would continue at the Class IV Unit. As a result, noises associated with landfilling activities would continue and would resemble current conditions. (See Section 3.2.8)
Demand for Government Services	No impacts.	Operations would continue at the Class IV Unit. As a result, the Lincoln County sanitarian would conduct periodic inspections as needed. Libby Landfill staff would oversee operations at the Class IV Unit and DEQ currently conducts inspections at Libby Landfill, which is adjacent to the Class IV Unit. (See Section 3.2.9)
Cultural Uniqueness and Diversity	No impacts.	No impacts. (See Section 3.2.10)
Socioeconomics	No impacts.	No impacts. (See Section 3.2.11)

3.2.1. Wildlife and Habitats

Minor impacts to wildlife and habitats are expected due to the Proposed Action.

The analysis area for wildlife and habitats is regionally generalized, but includes the Class IV Unit and the one-mile radius surrounding the Class IV Unit. The Proposed Action will not impact wildlife traversing through the Class IV Unit as the Class IV Unit is fenced. No habitats exist within the Class IV Unit because it has been operational since 2004. There is sufficient habitat nearby to accommodate wildlife.

The Montana Sage Grouse Habitat Conservation Program determined that the Class IV Unit and surrounding properties are located outside of any Sage Grouse core, connectivity, or general habitat areas.

No native vegetation remains in the Class IV Unit due to ongoing construction and operations. Because the Class IV Unit has been operational since 2004 and would continue, impacts to wildlife and habitats would be minor.

3.2.1.1. Threatened and Endangered Species

U.S. Fish and Wildlife Service's (USFWS) online databases were used to identify plant and animal species in the study area. The USFWS species and status listings for the study area are shown in **Table 5**.

Table 5: Federally Established Species List

SCIENTIFIC NAME	COMMON NAME	STATUS
<i>LYNX CANDESNSIS</i>	CANADA LYNX	THREATENED
<i>URSUS ARCTOS HORRIBILIS</i>	GRIZZLY BEAR	THREATENED
<i>GULO GULO LUSCUS</i>	NORTH AMERICAN WOLVERINE	PROPOSED THREATENED
<i>HALIAEETUS LEUCOCEPHALUS</i>	BALD EAGLE	RECOVERY
<i>COCCYZUS AMERICANUS</i>	YELLOW-BILLED CUCKOO	THREATENED
<i>SILENE SPALDINGII</i>	SPALDING'S CATCHFLY	THREATENED

3.2.1.2. Species of Concern

The Montana Natural Heritage Program's (MNHP) online databases were accessed for listed species. The MNHP species of concern list for Township 31 North, Range 31 West are shown in **Table 6**.

Table 6: Montana Recognized Species of Concern List

SCIENTIFIC NAME	COMMON NAME
<i>CORYNORHINUS TOWNSENDII</i>	TOWNSEND'S BIG-EARED BAT
<i>GULO GULO</i>	NORTH AMERICAN WOLVERINE
<i>LASIURUS CINEREUS</i>	HOARY BAT
<i>MYOTIS LUCIFUGUS</i>	LITTLE BROWN MYOTIS
<i>PEKANIA PENNANTI</i>	FISHER
<i>ACCIPITER GENTILIS</i>	NORTHERN GOSHAWK
<i>ARDEA HERODIAS</i>	GREAT BLUE HERON
<i>COCCOTHRAUSTES VESPERTINUS</i>	EVENING GROSBEAK
<i>DRYOCOPUS PILEATUS</i>	PILEATED WOODPECKER
<i>HAEMORHOUS CASSINII</i>	CASSIN'S FINCH
<i>HISTRIONICUS HISTRIONICUS</i>	HARLEQUIN DUCK
<i>NUCIFRAGA COLUMBIANA</i>	CLARK'S NUTCRACKER
<i>PICOIDES ARCTICUS</i>	BLACK-BACKED WOODPECKER
<i>PSILOSCOPS FLAMMEOLUS</i>	FLAMMULATED OWL
<i>PLESTIODON SKILTONIANUS</i>	WESTERN SKINK
<i>ANAXYRUS BOREAS</i>	WESTERN TOAD
<i>PLETHODON IDAHOENSIS</i>	COEUR D'ALENE SALAMANDER
<i>COTTUS RHOTHEUS</i>	TORRENT SCULPIN
<i>ONCORHYNCHUS CLARKII LEWISI</i>	WESTSLOPE CUTTHROAT TROUT
<i>ONCORHYNCHUS MYKISS GAIRDNERI</i>	COLUMBIA RIVER REDBAND TROUT
<i>SALVELINUS CONFLUENTUS</i>	BULL TROUT
<i>ISOCAPNIA CRINITA</i>	HOOKEED SNOWFLY
<i>ZACOLEUS IDAHOENSIS</i>	SHEATHED SLUG

Designation as a species of concern is not a statutory or regulatory classification. Instead, these designations provide a basis for resource managers and decision-makers to make proactive decisions regarding species conservation.

3.2.2. Hydrology

The analysis area for hydrology is the Class IV Unit and the Upper Kootenai Watershed (Hydrologic Unit Code #17010101130). Discussion of regional hydrogeology, based upon published reports, is provided. The Montana Bureau of Mines and Geology's Ground Water Information Center (GWIC) was accessed for ground water well information. The locations of ground water wells listed at GWIC appear on **Figure 5**.

3.2.2.1. Surface Water

No impacts to surface water are anticipated due to the Proposed Action.

The analysis area is in the sub-watershed of the Cedar Creek-Kootenai River confluence. It is situated on one of several lakebed terraces formed during flooding of glacial Lake Kootenai over an elevated paleo-alluvial bench bordering the Kootenai River Valley. At an average elevation of 2,400 feet amsl, the Class IV Unit is elevated above these nearby stream channels by at least 350 feet. The natural surface water body nearest to the analysis area is Pipe Creek approximately ¾ mile to the west-northwest (**Figure 5**).

The small pond within the Class IV Unit at the southeast corner releases into the Libby Landfill drainage ditch. The drainage ditch discharges into a series of licensed storm water detention ponds located at the southeast corner of the Libby Landfill. Although all these detention ponds are designed to hold the volume of storm water discharged by a 25 year-24-hour storm event, the Class IV Unit could contribute to an outflow during a 50- or 100-year flooding event. The Libby Landfill may release to state waters under its general industrial discharge permit issued by the DEQ Water Quality Bureau.

Continued operation of the Class IV Unit and associated features by the County would not change any aspect of the Class IV Unit and would not cause any impact to surface water.

3.2.2.2. Ground Water

No impacts to ground water are expected due to the Proposed Action.

The study area is situated within one of the Northern Rocky Mountain Intermountain basin aquifers. This area was subject to several repeated glacial advances, repeated inundation by glacial Lake Kootenai, and lastly alluvial erosion and deposition. The upper aquifer at the Class IV Unit is comprised of unconsolidated alluvial sand, and coarse to fine gravels, with interbedded silts and traces of clay. These lakebed and deltaic deposits formed by reworking glacial sediments of the Pleistocene age. The five monitoring wells installed on the expansion Site in 2002 indicate ground water flow direction towards the south. The locations of the ground water monitoring wells appear on **Figure 5**.

In the 27 years of monitoring at the Libby Landfill, the ground water quality is consistent with baseline data for all analytes tested. Data has been below maximum background concentrations, except chloride in

MW-2. There has been a long slow increase in nitrate-nitrite in both MW-2 and MW-3, though the concentrations remain well below the human health standard of 10 mg/l. Volatile organic compounds remain at or below the laboratory reporting limits. In the 17 years of monitoring at the Class IV Unit, the ground water quality is consistent with baseline data for all analytes tested.

Continued operation of the Class IV Unit and associated features by the County would not change any aspect of the Class IV Unit and would not cause any impact to ground water.

3.2.3. Geology and Soils

The analysis area for geology and soils is the Class IV Unit and one mile surrounding the Class IV Unit. Discussion of regional geology, based upon published reports, is provided. The analysis methods included review of Montana Bureau of Mines and Geology's digital maps, reports and other sources from the United States Geological Survey, U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Soil Survey Geographic Database (SSURGO), and topographic maps.

3.2.3.1. Geology

The Class IV Unit is located within the northern Rocky Mountain physiographic province and lies in a narrow intermontane basin incising the Cabinet and Purcell Mountains. The mountains are composed predominately of metasedimentary rocks from the late Precambrian Belt Supergroup which were deposited in a fault-bounded rift basin about 1,400 – 900 million years ago (Ma). Paleozoic (500 – 450 Ma) sedimentary outcrops can be found at lower elevations, but are sparse and confined to the Libby thrust belt that bisects the narrow basin and trends north into Canada. The Libby thrust belt (Figure 3-2) was formed where one of the old anticlines had its limbs steepened and thrust eastward toward the west flank of the Purcell anticlinorium. Structure in the area is complex and includes Proterozoic folds, Cretaceous thrust faults and associated folds, hundreds of Eocene and younger high-angles, and listric normal extension faults (Harrison and Cressman, 1993). More recent (150 – 80 Ma) intrusions into the Belt strata are Middle to Late Proterozoic sills, Cretaceous felsic plutons, and a pyroxenite-syenite complex a few miles southeast of the Unit, from which vermiculite was mined.

Figure 6: Geologic Map of Surrounding Area
(site outlined in red)

Symbols:

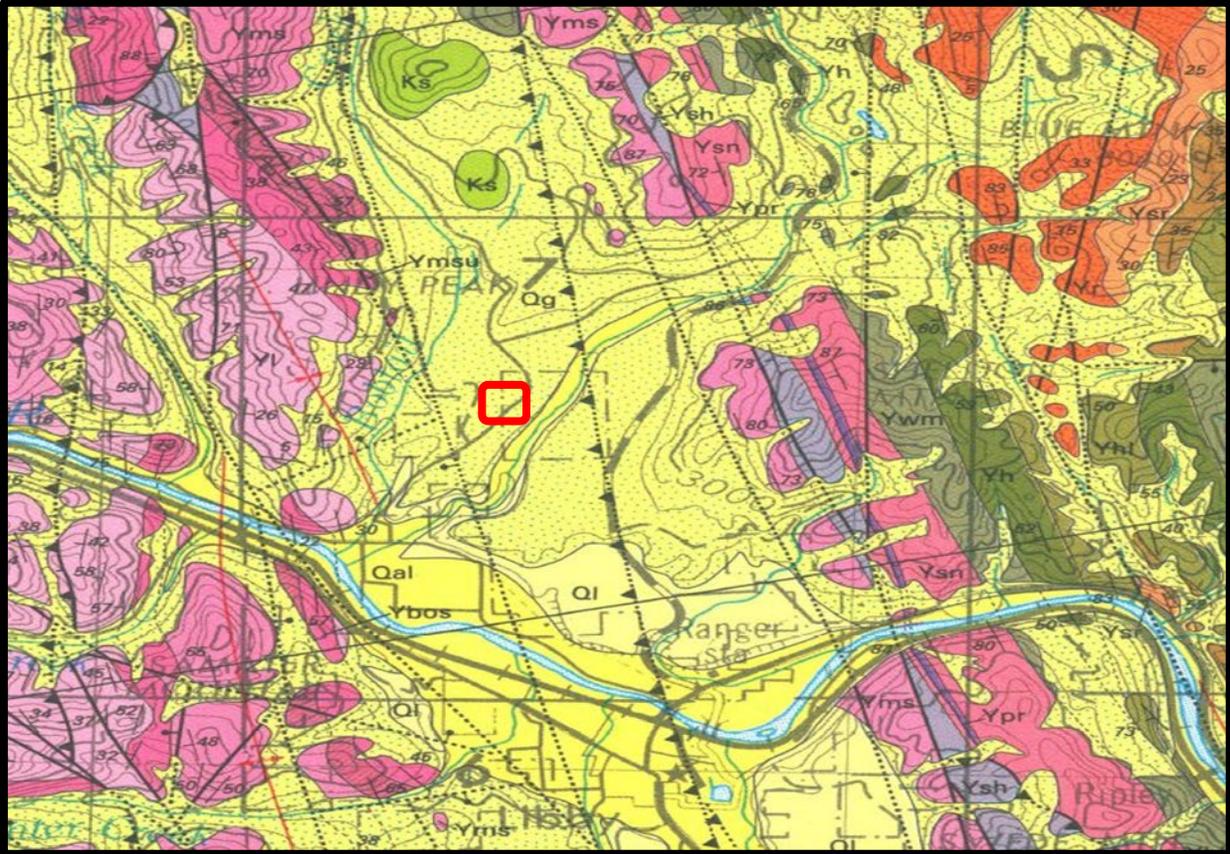
Qal – Alluvium (Holocene)

Qg – Glacial and fluvioglacial deposits (Pleistocene)

Ql – Lake sediments (Pleistocene)

Yl/Yms/Ysh/Ysn – Libby/Mount Shields/Shepard/Snowslip Formations (Middle Proterozoic)

Ks – Syenite (Cretaceous)



Source: USGS Professional Paper 1524 – Plate 1 (NOT TO SCALE)

3.2.3.2. Soils

The approximate locations of soil units in the study area are shown on **Figure 7**.

Figure 7: Aerial Photo of Soil Delineation



Source: USDA, NRCS, SSURGO data for Montana, 2018

Surficial deposits in the Site vicinity include: glacial debris, glacial lake sediments, sparse landslide deposits, and Quaternary alluvium. The glacial debris, deposited in the Pleistocene by both continental and alpine glaciers, is extensive and at places mantles the terrane to within a few hundred feet of the summits of peaks (Harrison and Cressman, 1993). The predominant soil types beneath the Site are Andic Dystrichrepts and Andic Dystric Eutrochrepts, which are presented with textures and associated depths in **Table 7**.

Table 7: Soils Engineering Report

MAP UNIT SYMBOL AND SOIL NAME	DEPTH (IN)	USDA TEXTURES	UNIFIED SOIL CLASS (USC)
102:			
<i>ANDIC DYSTRIC EUTROCHREPT (SOME LACUSTRINE TERRACES)</i>			
	0-1	SLIGHTLY DECOMPOSED PLANT MATERIAL	PT
	1-10	SILT LOAM	CL-ML, ML
	10-15	SILT LOAM, VERY FINE SANDY LOAM	CL-ML
	15-32	SILT LOAM, VERY FINE SANDY LOAM	CL-ML
	32-57	SILTY CLAY LOAM, SILT LOAM, VERY FINE SANDY LOAM	CL, CL-ML
	57-60	SILT LOAM, VERY FINE SANDY LOAM	CL-ML
106:			
<i>ANDIC DYSTROCHREPTS</i>			
	0-1	SLIGHTLY DECOMPOSED PLANT MATERIAL	PT
	1-8	GRAVELLY SILT LOAM	GM
	8-21	VERY GRAVELLY SILT LOAM, VERY GRAVELLY VERY FINE SANDY LOAM, EXTREMELY GRAVELLY SANDY LOAM	GM
	21-42	VERY GRAVELLY SANDY LOAM, VERY GRAVELLY VERY FINE SANDY LOAM	GM
	42-62	VERY COBBLY LOAMY COARSE SAND, VERY GRAVELLY SANDY LOAM, EXTREMELY GRAVELLY SANDY LOAM	GM
108:			
<i>ANDIC DYSTRIC EUTROCHREPT (SOME GLACIAL OUTWASH TERRACES)</i>			
	0-1	SLIGHTLY DECOMPOSED PLANT MATERIAL	PT
	1-10	SILT LOAM	CL-ML, ML
	10-15	SILT LOAM, VERY FINE SANDY LOAM	CL-ML
	15-32	SILT LOAM, VERY FINE SANDY LOAM	CL-ML
	32-57	SILTY CLAY LOAM, SILT LOAM, VERY FINE SANDY LOAM	CL, CL-ML
	57-60	SILT, SILT LOAM, VERY FINE SANDY LOAM	CL-ML

Source: USDA, NRCS, SSURGO Data for Montana, 2018

Continued operation of the Class IV Unit and associated features by the County would not change any aspect of the Class IV Unit and would not cause any additional impact to soils.

3.2.4. Air Quality

No impacts to air quality are expected due to the Proposed Action.

Air quality impacts associated with landfill activity typically include fugitive dust generated from construction, excavation, vehicle traffic, day-to-day operations, and closure activity. Operating according to ARM 17.50.1118 and the approved O&M would reduce the potential for impacts to air quality.

The Clean Air Act (CAA) requires EPA to establish National Ambient Air Quality Standards (NAAQS) for criteria pollutants. When a NAAQS is developed, EPA must determine if areas meet this standard or are not attaining the standard. Libby has been designated as a nonattainment area for two particulate matter standards. One nonattainment area is for particulate matter of 10 microns in size and smaller (PM₁₀). This nonattainment area encompasses land near the Class IV Unit, but does not include either Libby Landfill or the Class IV Unit. The second nonattainment area is for particulate matter of 2.5 microns in size and smaller (PM_{2.5}) and encompasses both Libby Landfill and the Class IV Unit. DEQ monitors both PM₁₀ and PM_{2.5} at the Libby Courthouse Annex building, which is located about 2 miles south of Libby Landfill. No additional particulate matter impacts are expected from the Class IV Unit to either nonattainment area due to the extensive work practices to control particulate matter emissions. Ambient particulate monitoring data has shown no NAAQS exceedances in more than a decade.

ARM 17.8.743 requires a facility to obtain a Montana air quality permit (MAQP) when it has the potential to emit 25 tons per year (tpy) of a regulated air pollutant. An MAQP is not required now because the Class IV Unit is below the required threshold. The Class IV Unit is also exempt from being required to obtain a Montana operating permit, per ARM 17.8.1204(2)(b). Although the Class IV Unit is not required to have an air quality permit, the facility is still required to comply with all applicable air quality rules, as described below for asbestos waste disposal and fugitive dust.

Asbestos was one of the first hazardous air pollutants regulated by the CAA in the Air Toxics Program. In 1973, EPA promulgated the first version of the Asbestos National Emission Standard for Hazardous Air Pollutants (NESHAP) in 40 CFR Part 61, Subpart M, to minimize the release of asbestos fibers during activities involving the handling of asbestos. This air toxics regulation establishes work practices to minimize the release of asbestos fibers during building

demolition or renovation, waste packaging, transportation and disposal. The regulation generally requires that ACWM be sealed in a leak-tight container while wet, labeled, and disposed of properly in a landfill qualified to receive asbestos waste. Landfills qualified to receive asbestos waste must meet special requirements for handling and securing the asbestos containing waste to prevent release of asbestos into the air. Transportation vehicles that move the waste from the point of generation to the asbestos landfill are required to have special labeling and waste shipment recordkeeping.

Fugitive dust is created during construction and excavation activities at the landfill from disturbing the ground, moving dirt, and vehicle activity. Blowing winds increase fugitive dust from these activities and can pick up additional material from stockpiles and the daily cover over the waste. During closure of the landfill, more cover material is placed on the waste pile which generates fugitive dust from the movement of the material and vehicles used to place the cover material.

Dirt roads can generate fugitive dust emissions particularly during dry and windy times. Dirt can be carried onto paved roads from vehicles leaving dirt roads. Once this dirt becomes dried on the paved roadway it may be entrained into the air from vehicles driving over it and when strong winds occur. The site follows several work practices for controlling asbestos and fugitive dust during the waste disposal operations. These work practices include:

- The use of a water truck which applies magnesium chloride (or equivalent) or watering of the site roads.
- Material deposited at the working face of the landfill shall be sprayed by the water truck while waste is being deposited, and after it's deposited. Deposited waste material will be covered by six inches of soil and compacted within 24 hours.
- Material required to be deposited into the 3-sided reinforced concrete loading bin inside the misting dome, shall be misted using sprinklers above the truck and along its sides. The waste pile in the loading bin shall also be sprayed with water before moving to the active cell.
- The water truck shall also spray the soil stock piles, and landfill cover material to prevent fugitive dust.
- Every vehicle leaving the controlled access area will be sprayed down at the decontamination pad before exiting.

These decontamination work practices are designed to prevent asbestos in dust from being carried offsite through the prevention of fugitive dust. These activities and control methods are described in **Section 2** in more detail and are designed to meet the zero-visible emissions objective. The performance of onsite

dust control systems is continually evaluated by mobile asbestos monitoring of personnel and by an array of asbestos air monitoring stations surrounding the Unit outside the perimeter fence since 2004. The site may halt material handling operations to mitigate fugitive dust emissions if the operator is unable to control emissions.

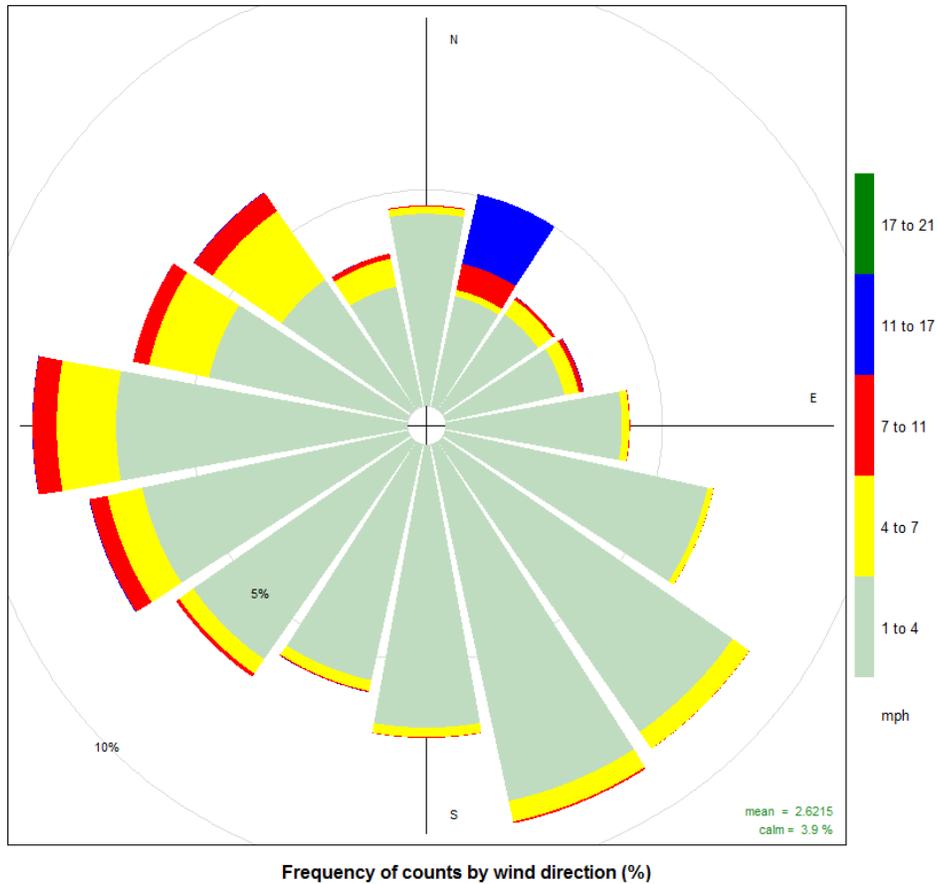
Methane levels will continue to be monitored on a quarterly basis to ensure the concentration of methane gas generated by the facility does not exceed 25 percent of the lower explosive limit (LEL) for methane in facility structures, and the LEL for methane is not exceeded at the facility property boundary, as required by ARM 17.50.1106 and ARM 17.50.1118(2)(c). Any exceedance of these specific levels of methane in the soil is required to be immediately reported to the DEQ followed by the submittal of a landfill gas remediation plan for DEQ approval.

Some landfills request air quality open burn permits which allows for the combustion of certain materials that reduces the volume of material to be landfilled. The Class IV Unit does not have an open burn permit; burning of solid waste is prohibited at this facility.

The creation of fugitive dust is affected by local meteorological conditions. Meteorological data collected in Libby by DEQ is shown in **Figure 8**. This meteorological station is located with the particulate monitors in downtown Libby. The figure shows wind in the area commonly blows from the west, with some wind from the southeast, and periodic gusts from the northeast. These three predominant wind directions correlate with the orientation of the mountain valleys (see **Figure 1**) surrounding Libby. The average wind speed is light at 2.6 miles per hour (mph). At times, Libby experiences wind gusts greater than 11 mph.

Figure 8: Libby, MT Wind Rose

Libby Courthouse Annex Air Monitoring Site
August 2014 - December 2018



Temperature and precipitation data were collected by the National Weather Service at a site in Libby on the north side of the Kootenai River. Data was collected from 2000 through 2016 as shown in **Tables 8** and **9**. This weather data indicates the warmest temperatures occur in the summer during July and August. Precipitation data shows that Libby experiences regular precipitation throughout the year, averaging over 17 inches per year since 2000. Peak monthly precipitation levels occur from November through January, averaging between 1.8 inches to 2.6 inches. The warmer months of July and August average less than one inch of precipitation. Windy conditions during dry and warm periods can generate the most fugitive dust if control methods are not applied. The continuation of the fugitive dust work practices designed to achieve zero visible emissions will result in no change of impact from the expansion.

Table 8: Libby, MT Temperature Data, 2000-2018

Monthly Mean Average Temperature for Libby, MT (degrees Fahrenheit)													
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
2000	28.5	33.3	40.8	49.0	54.3	61.4	67.9	68.2	56.8	45.4	29.6	25.0	46.7
2001	30.5	28.1	40.8	46.1	56.7	60.6	68.7	70.7	60.9	43.9	36.7	29.6	47.8
2002	29.4	M	32.4	44.8	52.3	63.6	68.8	64.5	58.1	44.1	M	31.9	49.0
2003	30.7	32.3	40.0	46.9	51.6	61.3	70.7	69.7	60.1	49.3	29.1	24.4	47.2
2004	24.8	31.8	40.4	47.6	55.6	63.8	69.9	68.0	58.4	47.1	36.6	32.3	48.0
2005	23.7	32.1	40.2	47.6	55.0	61.4	67.5	67.5	56.9	46.9	34.8	23.2	46.4
2006	33.7	28.3	38.0	48.0	57.0	65.2	73.3	68.2	59.7	46.2	34.1	26.3	48.2
2007	24.1	33.6	42.6	47.1	55.3	61.8	74.2	67.4	58.7	46.0	34.3	27.2	47.7
2008	23.1	34.4	38.2	42.1	54.4	61.3	68.1	66.9	57.2	45.4	37.5	20.7	45.8
2009	25.1	32.0	34.5	46.3	55.3	61.8	69.2	66.9	61.4	40.7	37.3	22.7	46.1
2010	31.0	37.4	41.6	45.4	50.9	59.6	66.3	66.4	57.3	48.4	31.7	28.0	47.0
2011	25.8	26.3	39.3	43.2	53.3	60.1	66.1	69.9	61.7	46.0	32.3	27.7	46.0
2012	29.4	32.1	39.9	M	53.0	60.8	71.3	67.1	59.8	46.7	38.2	30.5	48.1
2013	28.6	35.9	40.4	45.8	57.0	63.3	71.3	70.5	62.0	43.7	33.9	M	50.2
2014	31.2	24.7	37.4	46.2	M	60.8	M	M	M	M	31.1	29.3	37.2
2015	29.3	36.1	43.8	47.8	57.7	69.1	71.3	70.3	57.7	51.5	M	M	53.5
2016	M	M	M	M	M	M	M	M	M	M	M	M	M
2017	M	M	M	M	M	M	M	M	M	M	M	M	M
2018	M	M	M	M	M	M	M	M	M	M	M	M	M
Mean	28.0	31.9	39.4	46.3	54.6	62.2	69.6	68.1	59.1	46.1	34.1	27.0	47.2
Max	33.7 2006	37.4 2010	43.8 2015	49.0 2000	57.7 2015	69.1 2015	74.2 2007	70.7 2001	62.0 2013	51.5 2015	38.2 2012	32.3 2004	53.5
Min	23.1 2008	24.7 2014	32.4 2002	42.1 2008	50.9 2010	59.6 2010	66.1 2011	64.5 2002	56.8 2000	40.7 2009	29.1 2003	20.7 2008	37.2

*note: M is missing data

Table 9: Libby, MT Precipitation Data, 2000-2018

Monthly Total Precipitation for Libby, MT (inches)													
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
2000	2.79	1.31	1.01	1.47	0.78	0.94	0.27	0.15	0.45	0.33	0.90	M	M
2001	0.32	M	0.14	M	0.36	1.19	0.64	0.01	1.77	1.95	1.04	2.89	M
2002	2.41	1.11	1.53	1.01	2.50	1.33	0.63	0.21	1.06	0.12	1.78	3.67	17.36
2003	1.56	0.53	4.10	0.89	1.44	1.64	0.04	0.79	1.15	1.81	2.18	5.73	21.86
2004	1.57	0.77	0.51	2.15	2.30	1.70	1.34	3.01	1.73	1.16	0.64	1.75	18.63
2005	0.93	0.08	1.79	0.41	1.90	3.40	0.98	0.29	2.26	2.44	1.96	1.53	17.97
2006	4.18	1.13	1.04	1.61	0.95	2.95	0.25	0.60	1.38	0.48	5.85	1.77	22.19
2007	1.30	1.11	1.12	0.28	1.50	0.64	0.44	0.07	1.33	3.11	1.91	3.03	15.84
2008	2.68	0.92	0.68	0.42	0.70	1.01	0.36	0.95	1.22	0.62	0.76	2.75	13.07
2009	2.20	1.51	2.55	0.57	1.03	1.10	1.65	1.05	0.11	1.98	1.16	1.23	16.14
2010	1.28	M	1.39	0.76	1.11	3.04	1.20	0.44	2.54	1.27	2.65	2.71	M
2011	2.21	1.76	1.92	1.56	M	1.55	0.97	0.00	0.57	M	2.00	1.74	M
2012	M	0.80	4.49	M	1.15	M	2.59	0.09	0.26	M	M	M	M
2013	0.91	0.27	1.24	2.43	1.61	2.09	0.00	1.44	2.42	0.59	2.22	M	M
2014	1.08	1.96	M	1.19	M	2.42	M	M	M	M	M	1.99	M
2015	1.40	1.34	2.12	0.22	1.51	0.85	0.75	0.18	0.31	M	M	M	M
2016	M	M	M	M	M	M	M	M	M	M	M	M	M
2017	M	M	M	M	M	M	M	M	M	M	M	M	M
2018	M	M	M	M	M	M	M	M	M	M	M	M	M
Mean	1.79	1.04	1.71	1.07	1.35	1.72	0.81	0.62	1.24	1.32	1.93	2.57	17.88
Max	4.18 2006	1.96 2014	4.49 2012	2.43 2013	2.50 2002	3.40 2005	2.59 2012	3.01 2004	2.54 2010	3.11 2007	5.85 2006	5.73 2003	22.19 2006
Min	0.32 2001	0.08 2005	0.14 2001	0.22 2015	0.36 2001	0.64 2007	0.00 2013	0.00 2011	0.11 2009	0.12 2002	0.64 2004	1.23 2009	13.07 2008

*note: M is missing data

The ARM require that all sources comply with applicable air quality requirements. These include restrictions on particulate matter emissions to not exceed an opacity of 20 percent or more, averaged over 6 consecutive minutes, whether from fugitive dust sources or from combustion sources, per ARM 17.8.304 and ARM 17.8.308. ARM 17.8.308 also requires that facilities take reasonable precautions to control emissions of airborne particulate matter from the production, handling, and storage of any material and to apply reasonable precautions to any street, road, or parking lot. As described above, the County proposes to continue to control fugitive dust using applications of water and/or chemical dust suppressant on roadways, parking lots, storage piles and the general work area is an effective method for reducing fugitive dust emissions during construction and operations. The misting dome and watering of the landfill working face during and after refuse unloading are both active methods for reducing dust. The decontamination washing station used by all vehicles exiting the controlled site will prevent tracking material onto the roadways and

preventing road dust. Continuation of these practices will prevent any increased impact on the ambient air quality.

The CAA defines areas that are given special air quality and visibility protection as Class I or Class II areas. Each classification allows for different amounts of development and impacts to the ambient air quality. Areas designated Class I for air quality purposes are the most restrictive and allow for the least amount of impact. Areas designated Class II for air quality purposes can accommodate normal, well-managed industrial growth. Class I air quality designated areas include our national parks, several wilderness areas, and certain native American Indian reservations. All other areas in the region are Class II air quality areas, which include Libby and the area of the Class IV Unit. The nearest Class I area to the proposed project site is the Cabinet Mountain Wilderness, which is about 14 miles southwest of the Class IV Unit and across rugged mountainous terrain. No air quality impacts are expected at the nearest Class I area because of the extensive watering practices at the landfill and the mountainous terrain.

This facility must comply with the requirements of the Asbestos NESHAP in Subpart M to minimize the release of asbestos fibers. Standards for active waste disposal sites are described in 40 CFR 61.154 and are included in the conditions of the license. These conditions include:

- There shall be no visible emissions to the outside air from the disposal site.
- Access to the area shall be controlled and warning signs posted.
- Six inches of cover shall be applied at the end of each operating day.
- Maintain waste shipment and disposal records.
- Follow an approved closure plan.
- Notify EPA 45 days prior to any excavating or disturbance activity.

A regular program is already in place for utilizing the air monitoring data to execute Stop Work controls and Work Plan Reviews to evaluate and improve operations to eliminate dust and asbestos fiber emissions outside the misting dome. Personnel monitoring continues to assist in evaluating fiber levels within the misting dome during direct dumping of ACWM from vacuum boxes. Continued operation of the Class IV Unit and associated features would not change any work practices currently used at the Class IV Unit. Therefore, it would not cause any significant change in the current impact to dust or asbestos fiber emissions detected on site or within the vicinity of the site.

In summary, the Class IV Unit emissions will be actively controlled through existing work practices described above that are designed to meet zero visible emissions and have been practiced at this landfill under its current operation by

the EPA. Therefore, DEQ expects no impacts to the air quality in the analysis area.

3.2.5. Industrial, Commercial, and Agricultural Activities

No impacts to industrial, commercial, or agricultural activities are expected due to the Proposed Action.

Under the Proposed Action, the Class IV Unit would continue operations under Lincoln County management. Because the Class IV Unit has been operating since 2004, no additional impacts are expected.

3.2.6. Traffic and Utilities

Minor impacts to traffic and utilities are expected due to the Proposed Action.

Under the Proposed Action, the Class IV Unit would continue operations under Lincoln County management.

Currently, Libby Landfill is accessed via Libby Landfill Road off Pipe Creek Road (**Figure 7**). The entrance to Libby Landfill goes west from Pipe Creek Road on Libby Landfill Road. The Class IV Unit is currently operating and managed by EPA. As stated above, operations would continue under Lincoln County. Operations would remain the same, meaning traffic volumes would resemble current traffic conditions. Utilities needed for the operation of the Class IV Unit have been since 2004 when operations began.

3.2.7. Visuals

No impacts to visuals are expected due to the Proposed Action.

The Class IV Unit cannot be seen from Pipe Creek Road. The entrance to Libby Landfill, via Libby Landfill Road, is surrounded by trees. Under the Proposed Action, the Class IV Unit would continue operations under Lincoln County management and the Class IV Unit would not be relocated. Therefore, no impacts to visuals are expected.

3.2.8. Noise

Minor impacts to noise levels in the vicinity are expected due to the Proposed Action.

Under the Proposed Action, the Class IV Unit would continue operations under Lincoln County management. Therefore, noise from operations would resemble current conditions at Libby Landfill. Landfill operations would generate noise

from heavy equipment operations and vehicles entering and exiting the Class IV Unit. Landfill operations would be lessened by the trees and the topographical features surrounding the Class IV Unit. However, some noise would occur because of landfill operations. Therefore, the impact to noise levels would be minor.

3.2.9. Demands for Government Services

Impacts to the demands for government services are expected to be minor due to the Proposed Action.

Under the Proposed Action, the Class IV Unit would continue operations under Lincoln County management.

The Lincoln County sanitarian would conduct periodic inspections as needed. Landfill employees would oversee operations at the Class IV Unit and DEQ currently conducts inspections at Libby Landfill, which is adjacent to the Class IV Unit.

3.2.10. Cultural Uniqueness and Diversity

No impacts to cultural uniqueness and diversity are expected due to the Proposed Action.

The SHPO conducted a resource file search for Section 28, Township 31 North, and Range 31 West, which indicated there have been no previously recorded sites within the area. Based upon ground disturbances in Section 28, Township 31 North, Range 31 West associated with current Lincoln County Landfill operations, agricultural activities, and residential development in the area, SHPO determined that there is a low likelihood that cultural properties would be impacted.

3.2.11. Socioeconomic

No impacts to socioeconomics are expected due to the Proposed Action.

Under the Proposed Action, the Class IV Unit would continue operations under Lincoln County management. Landfill staff, currently employed at Libby Landfill, would assume responsibility for operations at the Class IV Unit. Therefore, socioeconomic conditions would not be impacted.

3.3. Cumulative Impacts

Cumulative impacts are the collective impacts on the human environment when a specific action is considered in conjunction with other past, present, and future actions by location and type. Cumulative impact analysis under MEPA requires

an agency to consider all past and present state and non-state actions. Related future actions must also be considered when these actions are under concurrent consideration by any state agency through pre-impact statement studies, separate impact statement evaluation, or permit processing procedures. Cumulative impact analyses help to determine whether an action, combined with other activities, would result in significant impacts.

According to Lincoln County and WPB, no other projects are anticipated within the vicinity of the Class IV Unit. Landfilling activities would continue in the Class IV Unit for approximately 100 years, or until landfill capacity is reached. Impacts of continued operations in the Class IV Unit would resemble current conditions. The Proposed Action is designed to accommodate the demand anticipated for management of Group III and Group IV wastes in Lincoln County and the surrounding service area. As the population grows, demands on the landfill may increase, and may cause a minor increase in dust and noise at the Class IV Unit. Dust would be mitigated according to the approved O&M plan.

4. FINDINGS

The depth and breadth of the project are typical of a landfill. DEQ's analysis of potential impacts from the Proposed Action are appropriate for the complexity, environmental sensitivity, degree of uncertainty, and mitigating factors provided by the Rules for each resource considered.

To determine whether preparation of an EIS is necessary, DEQ is required to determine the significance of impacts associated with the Proposed Action. The criteria that DEQ is required to consider in making this determination are set forth in ARM 17.4.608(1)(a) through (g):

- (a) The severity, duration, geographic extent, and frequency of occurrence of the impact;
- (b) The probability that the impact will occur if the Proposed Action occurs; or conversely, reasonable assurance in keeping with the potential severity of an impact that the impact will not occur;
- (c) Growth-inducing or growth-inhibiting aspects of the impact, including the relationship or contribution of the impact to cumulative impacts;
- (d) The quantity and quality of each environmental resource or value that would be affected, including the uniqueness and fragility of those resources or values;
- (e) The importance to the state and to society of each environmental resource or value that would be affected;

(f) Any precedent that would be set because of an impact of the Proposed Action that would commit DEQ to future actions with significant impacts or a decision in principle about such future actions; and

(g) Potential conflict with local, state, or federal laws, requirements, or formal plans.

The Site's location is described in **Section 1.4** of this Draft EA. It encompasses approximately 10.5 acres of the Lincoln County property. The Proposed Action would occur for approximately 100 years for the disposal of Group III and Group IV solid wastes. The facility is not within sage grouse core habitat, general habitat, or connectivity area. It has no special agricultural designation. Operations will not adversely affect any threatened or endangered species.

The Proposed Action is not expected to impact soils and vegetation at the Site. Operations have been in place since 2004. The Proposed Action would assume all previous operational practices. Once the Proposed Action ceases, the affected area would be restored and revegetated to resemble the surrounding topography and vegetation, as per the CP. Land use would be restricted to animal grazing once revegetation is achieved.

The Proposed Action is not expected to impact surface water resources. Landfill designs, including drainage ditches and detention ponds, control storm water and would prevent surface water contamination, as described in **Section 3.2.2.1** of this Draft EA. The controlled release of storm water from any onsite storm water detention ponds will not contain suspended sediment loads that naturally impacts coulees during heavy precipitation or snowmelt events. Therefore, in the event of a controlled storm water release, the quality of the storm water could be better than the storm water that would naturally flow from the Class IV Unit.

The Proposed Action is not expected to impact ground water. Narrative regarding ground water is described in **Section 3.2.2.2** of this Draft EA. The Class IV Unit is within the ground water monitoring network of the Libby Landfill. Group III and Group IV wastes do not pose concern for leachate contamination due to the nature of the wastes being deposited in the Class IV Unit.

DEQ has not identified any growth-inducing or growth-inhibiting aspects of the Proposed Action. DEQ's approval is not a decision regarding, in principle, any future actions that DEQ may perform. Furthermore, approval doesn't set any precedent or commit DEQ to any future action. Finally, the Proposed Action does not conflict with any local, state, or federal laws, requirements, or formal plans.

The Proposed Action would meet the requirements of the SWMA and associated rules. Based on the consideration of all criteria outlined in ARM 17.4.608, adherence to the solid waste, water, and air quality regulations, along with the facility's approved O&M plan, would

mitigate the potential for harmful releases, and impacts to human health and the environment due to the Proposed Action. Therefore, an EIS is not required.

4.1. Other Groups or Agencies Contacted or Contributing to the EA

Montana Natural Heritage Program
State of Montana Historic Preservation Office
Arrowhead Engineering, Inc.
CDM Federal
Volpe National Transportation Center
U.S. Environmental Protection Agency
U.S. Geological Survey
Montana Bureau of Mines and Geology
U.S. Department of Agriculture - Natural Resource Conservation Service
Montana Department of Transportation
Lincoln County Environmental Health

4.2. Authors

Draft EA prepared by:

Tim Stepp, Fred Collins, Mike Eder, Julie Ackerlund, and Liz Ulrich

Date: October 11, 2019

REFERENCES

EPA, U.S., Accessed 6/6/2019, Standard for waste disposal for manufacturing, fabricating, demolition, renovation, and spraying operations, Asbestos National Emissions Standards for Hazardous Air Pollutants (NESHAP)

<https://www.epa.gov/asbestos/asbestos-laws-and-regulations#neshap>

EPA, U.S., Accessed 6/6/2019, Standard for waste disposal for manufacturing, fabricating, demolition, renovation, and spraying operations, Asbestos National Emissions Standards for Hazardous Air Pollutants (NESHAP)

<https://www.govinfo.gov/content/pkg/CFR-2011-title40-vol8/pdf/CFR-2011-title40-vol8-part61-subpartM.pdf>

EPA, U.S., Accessed 6/6/2019, Infographic on actions to protect the public from asbestos, <https://www.epa.gov/asbestos/infographic-actions-protect-public-asbestos>

EPA, U.S., Accessed 6/6/2019, EPA actions to protect the public from exposures to asbestos, <https://www.epa.gov/asbestos/epa-actions-protect-public-exposure-asbestos#2019finalrule>

EPA, U.S., Accessed 6/6/2019, Restrictions on discontinued uses of asbestos; Significant new use rule, <https://www.regulations.gov/document?D=EPA-HQ-OPPT-2018-0159-5897>

EPA, U.S., Restrictions on Discontinued Uses of Asbestos, Docket Number EPA-HQ-OPPT-2018-0159, 40 CFR Parts 9 and 721, Final Rule April 25, 2019, Federal Register /Vol. 84, No. 80 /Thursday, April 25, 2019 /Rules and Regulations, p.17345

EPA, U.S., Accessed 6/6/2019, Risk Evaluation for asbestos, Assessing and managing chemicals under TSCA, <https://www.epa.gov/assessing-and-managing-chemicals-under-tsca/risk-evaluation-asbestos-0>

EPA, U.S., Accessed 6/6/2019, Asbestos scope document and supplemental files, Assessing and managing chemicals under TSCA, <https://www.epa.gov/assessing-and-managing-chemicals-under-tsca/asbestos-scope-document-and-supplemental-files>

EPA, U.S., Office of Chemical Safety and Pollution Prevention, Problem formulation of the risk evaluation for asbestos, EPA-740-R1-7018, May, 2018, https://www.epa.gov/sites/production/files/2018-06/documents/asbestos_problem_formulation_05-31-18.pdf

NIOSH, U.S., Centers for Disease Control and Prevention, Current Intelligence Bulletin 62, Asbestos fibers and other elongate mineral particles: State of the science and roadmap for research, Revised edition, <https://www.cdc.gov/niosh/docs/2011-159/pdfs/2011-159.pdf>

EPA, U.S., Integrated Risk Information System (IRIS), National Center for Environmental Assessment, Toxicological review of Libby amphibole asbestos, EPA/635/R-11/002F, December 2014, https://cfpub.epa.gov/ncea/iris/iris_documents/documents/toxreviews/1026tr.pdf

EPA, U.S., Office of Chemical Safety and Pollution Prevention, Scope of the risk evaluation for asbestos, EPA-740-R1-7008, June, 2017, https://www.epa.gov/sites/production/files/2017-06/documents/asbestos_scope_06-22-17.pdf

EPA, U.S., Designation of ten chemical substances for initial risk evaluations under the Toxic Substances Control Act, Docket Number EPA-HQ-OPPT-2016-0718-0001, 12/19/2016, <https://www.regulations.gov/document?D=EPA-HQ-OPPT-2016-0718-0001>

Esri, "Imagery Hybrid" Basemap, Scale Not Given, ArcGIS Online Group: DEQ Solid Waste, "Libby Expansion EA", Last Modified: July 26, 2019, <https://mtdeq.maps.arcgis.com/home/webmap/viewer.html?webmap=d921c21cd4d54a99a7be505147b35916>

Montana Tech of the University of Montana, Montana Bureau of Mines and Geology, Ground Water Information Center, July 26, 2019, <http://mbmgwic.mtech.edu/>

United States Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS), Web Soil Survey, 2019 <http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm>

USDA, NRCS Soil Survey Geographic Database (SSURGO), last updated: September 5, 2018

United States Geological Survey (USGS) Professional Paper 1524, Geology of the Libby Thrust Belt of Northwestern Montana and Its Implications to Regional Tectonics, Jack E. Harrison and Earle R. Cressman, 1993

USGS Professional Paper 231, Physiography and Geology of Western Montana and Adjacent Areas, W. C. Alden, 1953