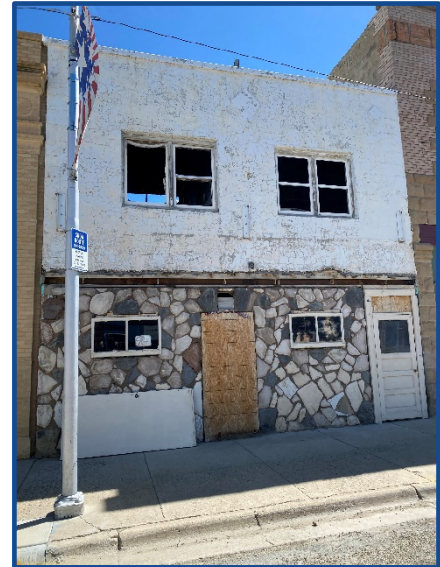


**Analysis of Brownfields Cleanup Alternatives
Preliminary Evaluation
Biegels Bar, 19 Central Avenue South, Harlowton, Montana 59039
Prepared for Snowy Mountain Development Corporation**

I. INTRODUCTION & BACKGROUND

a. Site Location

The site is located at 19 Central Avenue South, Harlowton, Fergus County Montana, USA (herein referred to as “the Site”). The Site is developed land with a structure bounded by a frontage sidewalk and Central Avenue South to the west, an alley to the east, City Hall to the north, and a vacant building with a Window and Door advertising display in the front window to the south. The exterior walls for the immediately adjacent buildings abut up against the exterior walls of Biegels Bar.



a.1. Forecasted Climate Conditions

According to the US Global Change Research Program (USGCRP) through NOAA National Centers for Environmental Information, Montana’s average annual temperature has increased approximately 2° F since the early 20th century. This increase is most evident in winter warming, which has been characterized by fewer very cold days since 1990. Under a higher emissions pathway, historically unprecedented warming is projected by the end of the 21st century.

Montana’s mountains and river systems provide critical water resources not only for Montana but also for other downstream states. Projected increases in spring precipitation may have both beneficial (increased water supplies) and negative (increased flooding) impacts.

Higher temperatures will increase the rate of soil moisture loss during dry spells, leading to an increase in the intensity of naturally occurring future droughts and an increased demand for irrigation water. The frequency of wildfire occurrence and severity is projected to increase in Montana.

b. Previous Site Use(s) and any previous cleanup/ remediation

The site in Harlowton, MT was built between 1910 and 1921 but the exact date of construction is not known. The structure has a basement and two floors above grade. The main floor of the property was a bar, known as Biegels Bar, from the late 1930s to 2013, when a fire burned out the top floor of the building. The second floor was used as a small apartment living area before the fire. The basement was used for storage. The building is currently vacant.

The City of Harlowton has plans to demolish the building on the site and use the site for future development. The building in its current condition from the fire allows precipitation to cause water damage to the adjacent City Hall building. A Phase I ESA was completed in 2018 and a Phase II ESA was completed in 2019 and revealed hazardous materials in the building.

c. Site Assessment Findings

The Phase II ESA sampling investigation conducted on September 27, 2018 confirmed the presence of contaminants of concern (COC) at the Site. The following list is a summary of the results and conclusions regarding COCs and associated media identified at the Site:

- **Asbestos-Containing Material (ACM):** Of the 17 samples submitted for laboratory analysis, one sample (wallboard joint compound) was reported as “positive” (>1% asbestos) or trace (<1% asbestos) for asbestos. The one positive sample was not friable and was determined to be 2% chrysotile (asbestos). However, a composite sample of the HVAC containment wallboard system (all wallboard system layers) in the basement is less than 1% and therefore is not regulated by the EPA. Occupational Safety and Health Administration (OSHA) rules are still applicable. Asbestos is considered a COC due to handling and disposal considerations.
- **Lead-Based Paint (LBP):** Of the 26 X-ray fluorescence (XRF) readings collected, a total of eight readings were determined to be “positive” (>1 milligram per square centimeter [mg/cm²]) for lead. Two exterior materials were assumed positive for lead. Location of the LBP include the basement, exterior 1st floor window casings, 2nd floor window casings (assumed), front exterior (assumed), and interior and exterior door casings.
- **Polychlorinated biphenyls (PCBs), Mercury, and Mold:** Visual inspections were conducted to identify possible PCB-containing equipment, mercury-containing equipment, and mold. A summary of the observations regarding the visual inspections conducted are presented below:
 - No PCB-containing ballasts were identified. PCBs are not considered COCs.
 - One thermostat switch was observed. The thermostat appears to contain a mercury component. Mercury is considered a COC.
 - Mold was observed on wood in the basement near the former coolers and the ceiling of the main floor. Mold is considered a COC.

d. Project Goal

The planned reuse and redevelopment of the Site is for city government use.

II. APPLICABLE REGULATIONS AND CLEANUP STANDARDS

a. Cleanup Oversight Responsibility:

Based on our knowledge, the inspection results, and the associated letter report prepared by Northern Industrial Hygiene, WWC recommends the following:

- Due to the small quantity of asbestos present at less than 1%, a MT DEQ Asbestos. Permit is not required; however, OSHA rules are applicable. Asbestos was confirmed to be present in one material and LBP was confirmed present in eight building material components and assumed positive in one material. The building should be kept adequately wet during demolition activities. Under the adequately wet provision, the wall board system (less than 1% asbestos) and LBP building materials do not have to be removed prior to demolition; however, removal by trained individuals before demolition is generally considered more protective. It is recommended that the demolition contractor contact landfills before beginning work to determine their policies for accepting related wastes

and to determine if TCLP analysis is required prior to landfill acceptance.

- The observed mercury-containing thermostat switch should be properly removed, prior to relevant demolition activities, and properly disposed of.
- If PCB-containing equipment is encountered, although none were observed, they should be properly removed prior to relevant demolition activities, and properly disposed of.
- As the presence of mold was noted, precautionary health and safety measures are recommended during remediation or demolition activities.
- Due to the location of the building and immediately adjacent buildings on both sides, the adjacent buildings may be compromised due to demolition activities. Therefore, a Structural Integrity Assessment for the adjacent buildings is recommended.

b. Cleanup Standards for Major Contaminants

The asbestos found in the Biegels Bar building are not regulated by the state for federal standards particularly because the wallboard system composite samples contain less than 1% asbestos. However, OSHA regulations regarding worker exposure to asbestos fibers apply (OSHA 1910 Subpart Z).

The lead-based paint found in the Biegels Bar Building are state and federally regulated. EPA defines LBP as paint containing greater than 0.5% lead by weight. Disposal of lead containing wastes is regulated under RCRA. Under RCRA, demolition debris is required to be tested using toxicity Characteristic Leaching Procedure (TCLP) method to determine whether the material exhibits the characteristics of hazardous waste. If so, paint must be managed as a hazardous waste. Note that LBP waste from abatement or renovation of residential households is excluded from listing as hazardous waste.

Mercury containing materials must be removed from structure and properly disposed of according to state and federal regulations.

c. Laws & Regulations Applicable to the Cleanup

Laws and regulations that are applicable to this cleanup include the Federal Small Business Liability Relief and Brownfields Revitalization Act, the Federal Davis-Bacon Act, state environmental law, Montana Prevailing Wages, and Town by-laws. Federal, state, and local laws regarding procurement of contractors to conduct the cleanup will be followed. In addition, all appropriate permits (e.g., call before you dig, soil transport/disposal manifests) will be obtained prior to the work commencing.

III. EVALUATION OF CLEANUP ALTERNATIVES

a. Cleanup Alternatives Considered

To address contamination at the Site there are three different alternatives considered:

Alternative #1: No Action

Alternative #2: Remediation/Abatement of asbestos and mercury containing equipment.

Alternative #3: Remediation/Abatement of mercury containing equipment prior to building demolition.

b. Evaluation of Cleanup Alternatives

To satisfy EPA requirements, the effectiveness, implementability, and cost of each alternative must be considered prior to selecting a recommended cleanup alternative.

Effectiveness

- Alternative #1: No Action is not effective in stopping the health risks from the identified COCs at the contaminated Site. No action is not recommended because it does not address site risk or exposure pathways. Exposure pathways for the site include lead leaching into soil and water and asbestos exposure to air if disturbed. The vacant building is an attractive nuisance in the downtown area of Harlowton which could result in exposure to lead, asbestos and/or mercury for anyone entering the building. Additionally, precipitation on the fire-damaged building is causing water damage to the immediately adjacent City Hall building.
- Alternative #2: Remediation/Abatement of asbestos and mercury containing equipment prior to building demolition. This alternative will include the abatement of building hazardous materials through the removal of asbestos and mercury containing equipment prior to full building demolition. The limited amount of LBP materials will be disposed of with the building demolition debris. Abatement is an effective way to prevent receptors such as the general population of Harlowton from coming into direct contact with contaminated building materials. This alternative is effective for the removal of the required COCs prior to and with the building demolition.
- Alternative #3: Remediation/abatement of mercury containing equipment prior to building demolition. The hazardous asbestos material is not considered ACM and is not regulated by EPA because the joint compound is 2% chrysotile, but a composite sample of the wallboard system is less than 1%. The limited amount of LBP and asbestos would be disposed of with the building demolition debris. The remediation and abatement of hazardous materials is an effective way to prevent receptors, such as the general population of Harlowton, from coming into direct contact with contaminated building materials. This alternative is effective at removing the required COCs prior to and with the building demolition.

Implementability

- Alternative #1: No Action is easy to implement since no actions will be conducted.
- Alternative #2: Remediation/Abatement of asbestos and mercury containing equipment prior to building demolition. Based on the results of the Hazardous Material Survey, the following recommendations were made by Northern Industrial Hygiene. These are standard abatement procedures for the COCs and are easy to implement using contractors with the appropriate training.
 - Contracting an accredited asbestos remediation company to address the asbestos at the Site during the cleanup phase of demolition (e.g., abatement). Asbestos is present only in the basement and is considered non-friable. Removal should be performed to maintain the non-friable status of the asbestos. If materials remain non-friable then disposal can be done using a class II landfill. Care must be taken during the removal process and workers must be made aware of the asbestos present. Proper protective measures must be taken.
 - Mercury containing equipment should be properly removed and disposed of.
 - LBP can be removed during demolition and disposed of as construction waste as long as proper documentation and waste profiling are observed. TCLP analyses may be required for landfill acceptance.

- A structural integrity assessment will be conducted for immediately adjacent buildings prior to demolition of the structure.
- **Alternative #3:** Remediation/abatement of mercury containing equipment and building demolition. The abatement procedures would have the same level of implementability as Alternative #2, with the exception of asbestos specific abatement. Building demolition would be performed without prior asbestos or LBP removal.
 - Mercury containing equipment should be properly removed and disposed of.
 - The asbestos present in the building can be removed during demolition as long as the asbestos remains non-friable and sufficiently wetted. All materials must be taken to an approved landfill for disposal.
 - LBP can be removed during demolition and disposed of as construction waste as long as proper documentation and waste profiling are observed. TCLP analyses may be required for landfill acceptance.
 - A structural integrity assessment will be conducted for immediately adjacent buildings prior to demolition of the structure.

Cost

- There will be no costs under Alternative #1: No Action and no cost.
- Alternative #2: The total cost estimate for this alternative is \$45,609.
- Alternative #3: The total cost estimate for this alternative is \$45,336.

c. Consideration of Climate Change Impacts

Regional trends show increased extreme weather such as increased frequency of heavy precipitation events and increased frequency of flooding effect the site. The site currently does not have a roof which contribute to infrastructure vulnerabilities creating opportunities for mold growth and damage to the adjacent City Hall building.

All proposed alternatives address these climate change risk factors by demolishing the building, except Alternative #1 for No Action.

d. Recommended Cleanup Alternative

The recommended cleanup alternative is Alternative #2 Remediation/Abatement of asbestos and mercury containing equipment Alternative #1, No Action does not provide any health protections or remove the hazardous building materials from the site. Alternative #2 does not protect workers from exposure to hazardous materials while performing cleanup activities. For these reasons, Alternative #2 is the recommended alternative.

Green and Sustainable Remediation Measures for Selected Alternative

To make the selected alternative greener, or more sustainable, several techniques are planned. The most recent Best Management Practices (BMPs) issued under ASTM Standard E-2893: Standard Guide for Greener Cleanups will be used as a reference in this effort. SMDC will require the cleanup contractor to follow an idle-reduction policy and use heavy equipment with advanced emissions controls operated on ultra-low sulfur diesel. The number of mobilizations to the Site would be minimized and erosion control measures would be used to minimize runoff into environmentally sensitive areas.