

**Analysis of Brownfields Cleanup Alternatives – Preliminary Evaluation
Montana State University (MSU) Innovation Campus – Nelson Dairy
Center Building, West College Street, Bozeman, Gallatin County, MT
Prepared for Snowy Mountain Development Corporation**

I. Introduction & Background a. Site Location

The Montana State University (MSU) Innovation Campus – Nelson Dairy Center Building is located on West College Street, in Bozeman, Gallatin County, MT (herein referred to as “the Site”).

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. The frequency of wildfire occurrence and severity is projected to increase in Montana.

According to FEMA Flood Zone Map 30031C0812D, the Site is located within a Zone X, and is in an area with minimal flood hazard.

Based on the nature of the Site and its proposed redevelopment, these are not likely to significantly affect the Site.

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

The Site is in Bozeman, MT, on the MSU campus. During most of its time, 1959-1990, the Nelson Dairy farm center was used as part of the agricultural college for Montana State College (now Montana State University). Then, after the closure of the dairy center, the Reserve Officers’ Training Corps (ROTC) repurposed and began using the Milking Parlor and office buildings for classes and training. Initially, the facility had 17 buildings, two bunker silos, and yards covering 3 acres. However, most of the structures at the location of the Nelson Dairy farm center were demolished in the 1980s. Currently, there are four buildings still standing: the Milking Parlor, Office/Stock Pavilion (the two onestory buildings are connected by a common wall), and two Quonsets.

The Targeted Brownfields recipient has plans to demolish the buildings on the Site for future development. An asbestos inspection was performed on September 19, 2018 and identified the potential for asbestos-containing material (ACM) to be present.

c. Site Assessment Findings

The asbestos inspection was conducted on September 19, 2018. Results of the inspection have confirmed the presence of contaminants of concern (COCs) at the Site. The following list is a summary of the results and conclusions regarding COCs and associated media identified by Environmental Solutions at the Site:

Asbestos-Containing Material (ACM): A total of 46 bulk samples, representing 15 different homogenous materials, were collected from the Site and submitted for laboratory analysis. Results showed 5 of the 15 homogenous materials contained asbestos quantities greater than 1%. Additionally, a stainless-steel sink with insulation was assumed to contain ACM by samplers during the investigation. Based on the results of the ACM survey, asbestos is present in the building. ACM is considered a COC in relation to the Site.

d. Project Goal

The planned reuse and redevelopment of the Site is Commercial/Institutional.

II. Applicable Regulations and Cleanup Standards a. Cleanup Oversight Responsibility

The Montana DEQ Asbestos Control Program will be the regulating entity providing all appropriate permits and approvals of the asbestos abatement work performed at this property. The certified asbestos abatement contractor will submit all asbestos abatement plans to the Asbestos Control Program prior to commencing work. Upon review and approval, the Asbestos Control Program will then issue the asbestos abatement permit authorizing the asbestos abatement plan. This plan will include all necessary third-party clearance sampling confirming the abatement is complete. Once the abatement contractor has submitted their final abatement report, Snowy Mountain Development Corporation (SMDC) will request an audit to be performed by the Asbestos Control Program. The Asbestos Control Program will then review the final abatement report and confirm that the work plan was completed appropriately.

b. Cleanup Standards for Major Contaminants

SMDC will follow all the state cleanup standards for proper remediation of the ACM and any other hazardous material found on the Site.

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, 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., notify before you dig, ACM 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: Removal/Abatement of Hazardous Materials and Conventional Demolition of the Buildings, and Alternative #3: Removal/Abatement of Hazardous Materials from the Site.

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 – Including Climate Change Considerations

- Alternative #1: No Action is not effective in stopping the health risks from the identified COCs at the contaminated Site. The Site is on a university campus in a commercial area and needs to be remediated.
- Alternative #2: Removal/abatement of all hazardous material will remove the COCs from the Site and eliminate the health risks. Following removal of the hazardous building materials, the building would be demolished using conventional methods.
- Alternative #3: Removal/abatement of hazardous materials and keeping the buildings onsite would remove COCs through abatement and proper disposal of hazardous building materials such as ACM. The buildings would remain onsite for future demolition by the property owner

Implementability

- Alternative #1: No Action:
 - No actions will be conducted and is, therefore, easy to implement.
- Alternative #2: Removal/Abatement of Hazardous Materials and Conventional Demolition of the Buildings:
 - Based on the results of the asbestos inspection, Environmental Solutions recommends using standard protocols for removal of ACMs. 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 ACM at the Site during the cleanup phase of redevelopment (e.g., abatement). ACM remediation is recommended prior to any demolition activities at the Site.
 - ACM clearance sampling should be completed in accordance with the Sampling and Analysis Plan.
 - Demolition would occur following ACM clearance.
- Alternative #3: Removal/Abatement of Hazardous Materials from the Site:
 - All ACM would be abated and removed from structure in the same manner as in Alternative #2.

- The buildings would remain in place. Demolition would be performed at a later date by the property owner.

Cost

- Alternative #1: No Action necessitates no cost.
- Alternative #2: The total cost estimate for this alternative is \$155,000.
- Alternative #3: The total cost estimate for this alternative is \$120,000. The cost for this alternative is less than Alternative #2, as the future demolition of the buildings would not be part of this project.

c. Recommended Cleanup Alternative

The recommended cleanup alternative is Alternative #3: Removal/Abatement of Hazardous Materials from the Site. The alternative would be the most effective at removing the health hazards found at the Site. MSU does not intend to reuse the buildings during redevelopment. The buildings are an attraction for transients and drug use. Therefore, abatement of ACM for demolition would remove all hazardous materials, including the vermiculate insulation in the CMU walls. For these reasons, Alternative #3: 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.