Analysis of Brownfields Cleanup Alternatives (ABCAs)
For
Chippewa Landing- Bay Mills Indian Community, MI

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I. Introduction & Background

a. Site Locations

The Chippewa Landing site is located at 4234 South Bay Mills Point Road, Brimley, MI 49715, coordinates: 46.44402 N, -84.594959 W. This site is classified as fee land owned by Bay Mills Indian Community.

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

Historical research conducted by Mackinac Environmental Technologies (MET) dates back to a 1939 aerial photograph, which depicted the Site as undeveloped land with no buildings or structures of any kind. By 1953, one or two small buildings were visible on the Site near the current boat launch. Based on their size, they were likely used as small homes or cabins. The Site remained relatively unchanged through the 1960s and early 1970s. According to historical information, the main building on the Site was constructed between 1973 and 1975 along with the mobile home. The pole building to the north was added during the early 1980s and is visible on a 1982 aerial photograph. According to the former owner, the Site has been used as a home, retail store, bait shop, and for boat storage since the main building was constructed during the early 1970s. The former owner has been familiar with the Site for over 50 years. The site was then purchased by the Sault Ste. Marie Tribe of Chippewa Indians on December 1, 2020 from the former owner of over 50 years. Above ground storage tanks (ATSs) were removed from the property while under ownership by the Sault Ste. Marie Tribe of Chippewa Indians. Bay Mills Indian Community (BMIC) acquired the property through a land swap with Sault Ste. Marie Tribe of Chippewa Indians on August 13, 2021. Since that date, no changes have been made other than to apply institutional controls including monitoring and site security.

As required by State law, a Baseline Environmental Assessment (BEA) and Documentation of Due Care Analysis (DDCC) (Phase 2 Investigation equivalent) was conducted by MET on November 6, 2020 to evaluate ASTs located on the site. The investigation included the completion of three soil borings with a stainless steel hand auger to approximately two feet below grade. Groundwater was encountered at approximately one foot below ground surface. Three monitor wells were installed in the borings due to shallow groundwater. Only one soil

sample was collected from the dispenser area for analysis. Additional sampling activities for delineation purposes were conducted on October 4 – 6, 2021 by Gosling Czubak Engineering Sciences, Inc. (GCES).

On October 4-6, 2021, GCES personnel conducted a reconnaissance of the site to identify and sample potential asbestos containing materials (ACMs). Each observed material with a potential to contain asbestos was sampled. Where multiple layers were present (*e.g.*, flooring or drywall), samples included all layers, and included adhesive material (*e.g.*, mastic) and/or surfacing material (*e.g.*, drywall skim coat or mud). Although fiberglass batt insulations are not a typical suspect ACM material, select samples of the various types encountered throughout the site were collected for confirmation.

On November 29, 2021, GCES personnel conducted a reconnaissance of the site to identify and sample for the presence of lead paint. Painted surfaces included wall paneling, oriented strand board on interior and exterior walls, drywall, fibrous ceiling panels, concrete floors, interior and exterior wood surfaces, and steel siding. The structures were investigated as thoroughly as practical, gathering enough representative samples of different colored paints on the various surfaces. Some samples consisted of single colors while others were composed of multiple layers of different-colored paints.

c. Site Assessment Findings

Based on analytical results obtained during sampling activities, the following hazardous substances were detected above their respective Part 201 residential cleanup criteria:

SOIL:

- Laboratory results indicate the concentrations of toluene (13,000 µg/Kg), ethylbenzene (1,400 µg/Kg), naphthalene (5,100 µg/Kg), and 2-methylnaphthalene (4,900 µg/Kg) exceeded Part 201 groundwater/surface water interface (GSI) criteria. The concentrations of benzene (9,000 µg/Kg), total xylenes (10,000 µg/Kg), 1,2,4-trimethylbenze (9,200 µg/Kg), and 1,3,5-trimethylbenzene (2,400 µg/Kg) exceeded Part 201 GSI criteria and Part 201Residential Drinking Water protection (DWP) criteria. This impact to soil was delineated by hand auger borings with field screening and soil samples collected at various sampling locations.

- Field screening also indicated likely petroleum product impact in soil at hand auger locations. The field screening indicated that concentrations of VOCs in this area was less than detected in other areas.

GROUNDWATER:

- At one sampling location, concentrations of ethylbenzene (55 µg/L), naphthalene (89 µg/L), and 2-methylnaphthalene (100 µg/L) exceeded the Part 201 groundwater/surface water interface (GSI) criteria. The concentrations of total xylenes (520 µg/L), 1,2,4-trimethylbenzene (900 µg/L), and 1,3,5-trimethylbenze (350 µg/L) exceeded both the Part 201 GSI criteria and Part 201Residential Drinking Water protection (DWP) criteria. This impact to groundwater was delineated by groundwater samples collected at three locations.

ASBESTOS:

- Asbestos containing materials were found in the following structures:
    - Pole barn pipe
    - Garage
    - Utility/Storage Area
    - Primary Structure Interior and Exterior
    - Shed
    - Trailer Home
    - Pump House

LEAD PAINT:

- Lead paint found in the following areas:
    - House Trailer
    - Outbuildings
    - Garage and Utility/Storage Area
    - Store
    - Rec Room, Great Room and Suite
    - Exterior

d. Project Goal

The overall purpose of a cleanup at this site is to allow the property to be redeveloped while mitigating risks posed to human health and the environment while also incorporating climate resiliency in all actions. The cleanup goal(s) for this site are listed below.

- Excavate and properly dispose of the impacted soil.
- Remove and dispose of homogenized liquids deemed "hazardous"
- Remove and dispose of asbestos materials in buildings
- Remove and dispose of lead paint containing materials on buildings
- Conduct cleanup operations that are compliant with applicable tribal, state, and federal standards and protect human health and the environment and utilize climate resiliency strategies.
- Resample groundwater and soil in impacted area to confirm standards are met

II. Applicable Regulations and Cleanup Standards

a. Cleanup Oversight Responsibility

The cleanup will be enrolled in the state response program and overseen by the Tribe in coordination with U.S. EPA Region 5. Certified contractors will be hired to conduct the cleanup and subsequent monitoring. Contractors will be overseen by the Tribal Engineer and Environmental Coordinator.

b. Cleanup Standards for major contaminants

These standards will follow rules and regulations during the cleanup tasks and activities:
§ Michigan EGLE Cleanup Criteria Requirements for Response Activity (formerly the

Part 201 Generic Cleanup Criteria.)

c. **Laws & Regulations Applicable to the Cleanup (briefly summarize any federal, tribal, state, and local laws and regulations that apply to the cleanup)**

Laws and regulations that are applicable to this cleanup include the Federal Small Business Liability Relief and Brownfields Revitalization Act; State of Michigan Cleanup Criteria Requirements for Response Activity; MIOSHA regulations for handling asbestos containing materials and lead containing materials; Tribal laws. The cleanup contractor will be required to follow MIOSHA, EPA and state regulations and notifications. Federal, State and Tribal laws regarding procurement of contractors to conduct the cleanup will be followed. In addition, all appropriate permits (e.g., notify before you dig, soil transport/disposal manifests) will be obtained prior to the work commencing.

III. Evaluation of Cleanup Alternatives

Each of the potential cleanup alternatives is evaluated against the following set of four criteria:

1) Compliance

§ Compliance with applicable tribal, state and federal regulations.

2) Effectiveness

§ Protectiveness of human health and the environment, including workers during implementation;
§ Reliability for mitigation of risk in the short-term and long-term effectiveness;
§ Reduction of toxicity, mobility, and/or volume of contaminants;
§ Ability to achieve the cleanup goals; and
§ Resiliency to climate change conditions (including extreme weather conditions such as flooding).

3) Implementability

§ Technical feasibility;
§ Availability of required services, materials, and equipment;
§ Administrative feasibility;
§ Construction feasibility; and
§ Maintenance and monitoring requirements.

4) Cost (Conceptual costs for comparative analysis only)

§ Amount of time, effort, materials, and labor necessary.

The selection of "effectiveness," "implementability," and "cost" as evaluation criteria is based upon the EPA's Guidance for Conducting Remedial Investigations and Feasibility Studies under CERCLA (EPA, 1988). In addition, the selection of "compliance" as an evaluation criterion is used to take into account variations between federal, state, and/or local regulations, if applicable, on a site-by-site basis.

IV. Cleanup Alternatives

a. Cleanup Alternatives Considered

To address contamination, three different alternatives were considered, including:

- Alternative #1: No action
- Alternative #2: Excavation, removal, and disposal of impacted soil, concrete, and homogenized liquids. Removal of building containing

asbestos and lead paint.
- Alternative #3: Continue to monitor site with possible future action or no action

Alternative #1: No Action

Advantages

- No Cost

Disadvantages

- All contamination will still exist.
- Health, environmental, and safety hazards remain
- An eyesore will remain.
- The needs of the community will not be met since the site cannot be reused with the status quo situation.
- Not compliant with Federal, Tribal and State regulations
- No immediate costs, but potential high costs in future due to unlimited liability and deteriorating conditions.
- Increased deterioration of site due to changing weather event impacts including high water levels, seiches and extreme precipitation and runoff events.
- The "No Action" alternative is technically ineffective

Alternative #2: Excavation, removal, and disposal of impacted soil, and homogenized liquids, and removal of asbestos and lead paint containing materials.

Advantages

- Excavate and properly dispose of the impacted soil and concrete
- Remove and dispose of homogenized liquids deemed "hazardous"
- Remove and dispose of buildings with asbestos and lead paint.
- Conduct cleanup operations that are compliant with applicable tribal, state, and federal standards and incorporate climate resiliency actions.
- Collect liquid and soil characterization samples
- Removal of contamination will reduce safety, health and environmental risks.
- Allow for reuse/redevelopment of these sites.
- Reuse/redevelopment of this site will allow for consideration of climate adaptive strategies including planning for extreme weather events. These include options such as improved protection of wetlands, provide for properly sized storm water management, plan for changing coastal zone water levels and seiches, implementing green infrastructure and green energy alternatives and utilizing rainwater harvesting practices.

Disadvantages

- Alternative would incur a moderate amount of time, effort, labor, and material costs to complete the excavation, removal, and disposal of the impacted soil, and

homogenized liquids and to removal all building materials containing asbestos and lead.

- Estimated total cost is up to $350,000 to remove health and environmental risks from site.

Alternative #3: Continue to monitor site with possible future action or no action

Advantages

- Will conduct liquid and soil characterization samples to monitor contamination
- Minimal cost

Disadvantages

- All contamination will still exist.
- Health, environmental, and safety hazards remain
- Changing weather event impacts not considered, including high water levels, seiches and extreme precipitation and runoff events.
- An eyesore will remain.
- The needs of the community will not be met since the sites cannot be reused with the status quo situation.
- Not compliant with Federal, Tribal and State regulations
- Minimal costs, but potential high costs in future due to unlimited liability and deteriorating conditions.
- Costs associated with continued monitoring and sampling

b. Cost Estimate of Cleanup Alternatives (summary of the compliance, effectiveness, implementability and a preliminary cost estimate for each alternative)
To satisfy EPA compliance, requirements, the effectiveness, implementability, and cost of each alternative must be considered prior to selecting a recommended cleanup alternative.

Summary Comparison of Potential Alternatives

Cleanup Alternative	Compliance	Effectiveness	Implementability	Cost	Comment
Alternative #1: No Action	Compliant	Not effective	Implementable	Low (3rd)	**This alternative does not satisfy the cleanup goals or allow for redevelopment of the site**
Alternative #2: Excavation, removal, and disposal of impacted soil, concrete, and homogenized liquids. Removal of buildings containing asbestos and lead paint	Compliant	Effective	Implementable	High (1st)	**This alternative satisfies the cleanup goals, and allows for redevelopment of the site, including planning for adverse impacts from extreme climate events.**
Alternative #3: Continue to monitor site with possible future action or no action	Compliant	Not effective	Implementable	Moderate (2nd)	**This alternative does not satisfy the cleanup goals or allow for redevelopment of the site in a timely manner.**

c. Recommended Cleanup Alternative
Of the three cleanup alternatives evaluated for selection at the Chippewa Landing site, located at 4234 South Bay Mills Point Road, Brimley, MI 49715, coordinates: 46.44402 N, -84.594959 W, the preferred alternative recommended is: Alternative 2: Excavation, removal, and disposal of impacted soil, and homogenized liquids and removal and disposal buildings containing asbestos and lead paint. This alternative was selected based upon overall compliance with state and/or federal regulations, effectiveness in protecting human health and the environment in both the short-term and long-term, feasibility of implementation, long-term cost effectiveness and ability to redevelop the site into a future use that benefits the Bay Mills Indian Community and wider community as well.