

December 2022 version

Environmental Assessment Worksheet

This most recent Environmental Assessment Worksheet (EAW) form and guidance documents are available at the Environmental Quality Board's website at: <https://www.eqb.state.mn.us/>. The EAW form provides information about a project that may have the potential for significant environmental effects. Guidance documents provide additional detail and links to resources for completing the EAW form.

Cumulative potential effects can either be addressed under each applicable EAW Item or can be addressed collectively under EAW Item 21.

Note to reviewers: Comments must be submitted to the RGU during the 30-day comment period following notice of the EAW in the *EQB Monitor*. Comments should address the accuracy and completeness of information, potential impacts that warrant further investigation and the need for an EIS.

1. Project title: Hill Annex Historic Properties Removal and Scram Mining Project

2. Co-Proposer: Calumet Reclamation Company

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4. Reason for EAW Preparation: (check one)

Required:

- ☐ EIS Scoping
☒ Mandatory EAW

Discretionary:

- ☐ Citizen petition
☐ RGU discretion
☐ Proposer initiated

If EAW or EIS is mandatory give EQB rule category subpart number(s) and name(s): MR 4410.4300, subp. 31.

An EAW is mandatory per Minnesota Rules part 4410.4300, subp. 31, Historical Places, due to removal of historic properties at the former Hill Annex State Park.

5. Project Location:

- County: Itasca County
- City/Township: City of Calumet and Marble
- PLS Location (¼, ¼, Section, Township, Range):

Scram Mine within the National Register of Historic Places Historic District (hereafter Scram Mine Historic District)

Section 16, T56N, R23W

Scram Mine Project Area

SW¼ and SE¼ of Section 15, T56N, R23W
SW¼, SE¼, and NE¼ of Section 16, T56N, R23W
SE¼ of Section 17, T56N, R23W
Ne ¼ and NW ¼ of Section 20, T56N, R23W
NE ¼ and SE ¼ of Section 21, T56N, R23W
NE ¼ and SE ¼ of Section 22, T56N, R23W
NW¼ and SE¼ of the SW¼ of Section 23, T56N, R23W
NW¼ of the NW¼ of Section 26, T56N, R23W
NE¼ and NW¼ of the SW¼ of Section 27, T56N, R23W
NW¼ of the SE¼ of Section 27, T56N, R23W
NW¼ of Section 27, T56N, R23W
NE¼ of Section 27, T56N, R23W

- Watershed (81 major watershed scale): Mississippi River – Grand Rapids Watershed
- GPS Coordinates: See Table 1

Scram Mine Project Area: 47.330439, -93.262612

Scram Mine Historic District: 47.33162853, -93.26443672

- Tax Parcel Number: See Tables 1 and 2.

Table 1: Parcels within the Scram Mine Historic District

Scram Mine Historic District Tax Parcels		
18-015-2300	87-016-3300	94-016-1100
18-015-3200	87-021-1100	94-016-1200
18-015-3300	87-021-1200	94-016-1300

Scram Mine Historic District Tax Parcels		
	87-021-2012	94-016-1400
	87-022-2200	94-016-2100
		94-016-2400
		94-016-3100
		94-016-3400
		94-016-4100
		94-016-4200
		94-016-4300
		94-016-4400
		94-017-4400

Note: there are parcels associated with the Minnesota Department of Transportation, City of Calumet, and Greenway Township within the Scram Mine Historic District Project Area that do not have parcel ID numbers.

Table 2: Parcels within the Scram Mine Project Area

Scram Mine Project Area Tax Parcels		
18-15-2300	87-016-3300	94-016-1100
18-15-2400	87-020-1100	94-016-1200
18-015-3200	87-020-1401	94-016-1300
18-015-3300	87-021-1100	94-016-1400

Scram Mine Project Area Tax Parcels		
18-015-3401	87-021-1200	94-016-2100
18-015-3405	87-021-1400	94-016-2400
18-15-3406	87-021-2102	94-016-3100
18-015-3420	87-022-2101	94-016-3400
18-015-4303	87-022-2103	94-016-4100
18-015-4401	87-022-2200	94-016-4200
18-022-1101	87-022-2300	94-016-4300
18-022-1102	87-022-2400	94-016-4400
18-022-1200	87-022-3100	94-017-3101
18-022-1202	87-022-3200	94-017-3102
18-022-1300	87-022-3202	94-017-3103
18-022-1400	87-022-3301	94-017-3104
18-022-1402	87-022-3302	94-017-3105
18-022-4100	87-022-3401	94-017-3106
18-022-4200	87-022-3402	94-017-3107
18-022-4300	87-410-2450	94-017-3108
18-022-4400		94-017-3401
18-23-2301		94-017-3402

Scram Mine Project Area Tax Parcels		
18-023-2302		94-017-4100
18-023-3200		94-017-4200
18-023-3300		94-017-4300
18-026-2200		94-017-4400
18-027-1100		94-020-1200
18-027-1102		94-020-1303
18-027-1200		
18-027-1202		
18-027-1300		
18-027-1400		
18-027-2100		
18-027-2102		
18-027-2200		
18-027-2300		
18-027-2400		
18-027-3100		
18-027-4200		
18-028-1400		

Scram Mine Project Area Tax Parcels		
18-530-0110		
18-530-0130		
18-530-1610		
18-530-1710		
18-530-1720		

Note: there are parcels associated with the Minnesota Department of Transportation, City of Calumet, City of Marble, Greenway Township, and Burlington Northern Santa Fe (BNSF) Railway within the proposed Scram Mine Project Area that do not have parcel ID numbers.

At a minimum attach each of the following to the EAW:

- County map showing the general location of the project (See Figure 1)
- U.S. Geological Survey 7.5 minute, 1:24,000 scale map indicating project boundaries (photocopy acceptable) (See Figure 1); and
- Site plans showing all significant project and natural features. Pre-construction site plan and post-construction site plan (See Figures 2A and 2B).
- List of data sources, models, and other resources (from the Item-by-Item Guidance: *Climate Adaptation and Resilience* or other) used for information about current Minnesota climate trends and how climate change is anticipated to affect the general location of the project during the life of the project (as detailed below in EAW Item 7, Climate Adaptation and Resilience).

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Exhibit 11	Southern Annual Progress End of Year 2
Exhibit 12	Southern Annual Progress End of Year 3
Exhibit 13	Southern Annual Progress End of Year 4
Exhibit 14	Southern Annual Progress End of Year 5

6. Project Description:

- a. Provide the brief project summary to be published in the *EQB Monitor*, (approximately 50 words).

Calumet Reclamation Company (CRC) plans to process legacy stockpiles and tailings basins containing hematite at the former Hill Annex Mine in Itasca County. The hematite would be processed into a concentrate-type product. The activity would require the demolition of historic properties owned by the Department of Natural Resources.

- b. Give a complete description of the proposed project and related new construction, including infrastructure needs. If the project is an expansion include a description of the existing facility. Emphasize: 1) construction, operation methods and features that will cause physical manipulation of the environment or will produce wastes, 2) modifications to existing equipment or industrial processes, 3) significant demolition, removal or remodeling of existing structures, and 4) timing and duration of construction activities

Project Overview

The proposed project is described in two parts, the Scram Mining Historic District and the Scram Mine Project Area.

Scram Mine Historic District

The proposed project is located in Itasca County, near the cities of Calumet and Marble (Figure 1). Portions of the proposed mining operations would occur within the boundaries of the former Hill Annex State Park, including areas that overlap with the Hill Annex Mine Historic District (Figure 1), which is listed on the National Register of Historic Places (NRHP) (see EAW Item 15). Throughout this

EAW, the Scram Mine Historic District refers to the portion of the proposed Scram Mine Project Area that overlaps with the Hill Annex Historic District (Figure 1).

Due to safety requirements associated with the proposed mining operations, existing buildings and infrastructure within the NRHP-listed property would be removed. The Minnesota Department of Natural Resources (DNR) would carry out the demolition of these structures and CRC would construct new infrastructure necessary to support the proposed mining operations.

The DNR and Minnesota State Historic Preservation Office (SHPO) have established a Programmatic Agreement to guide the resumption of mining activities at the former Hill Annex State Park. This agreement outlines a formal process for assessing potential effects on historic properties within the former park and resolving any adverse impacts that may be identified (DNR-MHS 2010).

Under this agreement, the DNR is responsible for implementing all mitigation commitments, which include comprehensive documentation of the property prior to the initiation of mining activities. This documentation includes photographic, oral, and written records that capture the historical significance of the Hill Annex Mine.

Scram Mine Project Area

CRC, a subsidiary of Scranton Holding Company, has prepared a Permit to Mine (PTM) application with the intention of using scam mining methods to capture hematite (iron oxide particles) left from historical mining operations that existed at the former Hill Annex Mine, hereafter referred to as the Project. Scram mining is defined in Minnesota Administrative Rules (Minn. Rules) 6130.0100 as: “a mining operation which produces natural iron ore or natural iron ore concentrates from previously developed stockpiles, tailings basins, underground mine workings, or open pits, which involves no more than 80 acres of land not previously affected by mining.”

The proposed Project consists of two plant ore feed categories: stockpiles and tailings basins. There are eight legacy stockpiles (Heavy Media Rejects #2, Cretaceous Lean Ore #2, Lean Ore #3, Lean Ore #5, Taconite #2, Taconite #7, Lean Ore #7, and Cretaceous #4) and three legacy tailings basins (Hill Annex Basin #1, Hill Annex Basin #2, and Hill Annex Basin #3) (Figure 2 and map series).

CRC is proposing to operate mining and crushing activities 24 hours per day, 7 days per week, 8 months per year for 15 years. Approximately, one day every two weeks, the plant would shut down for maintenance. In addition, one year would be needed to construct and commence mining, three years would be needed to close and reclaim the mining area, and another 10 years would be needed for reclamation monitoring, totaling 29 years of Project-related activities.

Mining Process Overview

The proposed scam mining Project plans to process approximately 1,000 long tons per hour (LTph) of plant feed, which includes crude feed material from stockpiles and tailings basins to produce approximately 500 LTph of concentrate (Exhibits 11 and 12). CRC expects to mine a total of 62 million long tons (LT) with the processing plants producing approximately 12,000 LT of concentrated product per day.

Stockpile Material Handling (Plant Feed) and Processing

Plant feed from legacy stockpiled material would be excavated and loaded using a front-end loader and transported via conveyor belt to a portable crushing operation. Oversized material would be directed to a jaw crusher for size reduction. The crushed material would then be transferred by loader onto a grizzly screen. Undersized material from the stockpile would be conveyed to a screening unit for separation, while oversized material would be processed through a cone crusher.

Material meeting size and physical criteria for further processing would be conveyed to a surge pile at the Density Medium Separation (DMS) plant (Exhibit 13) (Figure 2 and map series). Material that does not meet recovery criteria based on size or physical characteristics would be classified as reject material and deposited in the North Waste Management Area (WMA).

CRC has secured a residue lease from the State of Minnesota for Section 16, which previously housed the Hill Annex Mine processing plant. Fleet operations, service activities and heavy equipment traffic, and a designated parking area would be located near the DMS plant surge pile.

At the DMS plant, stockpile feed would be discharged via conveyor onto a single-deck screen for wet screening. Water used for wet screening would be collected within the process circuit and reused. Oversized material from the wet screen would undergo separation in a dense medium circuit, where a ferrosilicon suspension—an alloy of iron and silicon—is used to establish the required medium density for separating iron-bearing material from lower-density gangue based on specific gravity differences.

Material would be pumped to a cluster of medium cyclones and rinsed to recover ferrosilicon. Rinsate would be routed to magnetic separators, where highly magnetic ferrosilicon would be recovered and returned to the DMS circuit. Excess process water from this step would be directed to onsite process water basins or reused within the plant.

Material exiting the DMS circuit that fails to meet density-based recovery criteria would be classified as DMS rejects and conveyed via conveyor belt to the North WMA. Construction of the North WMA would progress during stockpile mining and as stockpiles are removed for processing. The final size of the North WMA would be restricted to the footprint of the legacy overburden stockpile on which the mined stockpiles currently sit (Exhibits 19A through 19E). Reject materials would be contoured and compacted using a bulldozer in accordance with State reclamation requirements.

Undersized material from the wet screen would be processed through a magnetic separator. The magnetic fraction would be combined with the DMS product. The non-magnetic fraction would pass through a classifier to remove slimes that could adversely affect spiral separation performance. Slimes removed during classification would be directed to a thickener, where solids would be settled and managed as reject material in the North WMA. Clarified water from the thickener would be recovered and returned to the process water circuit.

The coarse fraction from the classifier would feed spiral concentrators for gravity concentration. Spiral concentrate would be combined with the DMS product in a slurry. The final combined product would be dewatered to 12 to 15 percent moisture using appropriate dewatering equipment. Water recovered during dewatering would be collected and returned to the process water system. Dewatered spiral rejects would be combined with DMS rejects prior to disposal in the North WMA.

Tailings Basin Material (Plant Feed) Handling and Processing

Prior to processing plant feed from legacy tailings basins, vegetation would be removed from the active working areas within each of the three tailing basins. Active working areas would be limited to 20 acres at any given time. Excavation would be performed using a loader, and excavated legacy tailings basin material would be passed over a grizzly screen to remove large debris such as tree trunks and woody material.

Undersized legacy tailings basin material would be discharged into a bin feeder and conveyed to a trommel screen. At the trommel, process water would be added to convert the material into slurry. Trommel effluent water would remain within the closed-loop process water system and be reused in downstream processing.

The slurry would be conveyed to the spiral processing plant, where it would be deslimed using a classifier. Slimes removed during desliming would be directed to a thickener for solids separation. Thickener underflow would be managed as reject material, while recovered water would be returned to the process water circuit.

Following desliming, the slurry would be pumped to a low-intensity magnetic separator to extract magnetite, which would be combined with the spiral product. The resulting slurry would then be processed using Humphrey spirals, which separate heavier iron-bearing concentrate from lighter spiral reject materials based on specific gravity.

The heavier spiral product would be pumped to the DMS plant and combined with the DMS concentrate stream. Spiral rejects would be dewatered using a centrifuge. Centrifuge effluent water would be captured and routed back to the process water system for reuse.

Dewatered spiral rejects, with moisture content of approximately 12 to 15 percent using appropriate dewatering equipment, would be deposited in the South WMA. Construction of the South WMA would progress during tailings basin mining and as tailings basins are removed for processing. The final size of the South WMA would be restricted to the footprint of the legacy overburden stockpile on which the Hill Annex Tailings Basin #2 currently sits (Exhibits 20A – 20E).

Concentrate Handling, Loadout, and Rail Transport

Concentrate from the DMS plant and spiral processing plant would be combined at CRC's loadout area (Exhibits 13 and 14). This concentrate would be transported via rail to an out-of-state pig iron production facility (not part of this proposed Project). The product loadout would be located at CRC's facility in Calumet, Minnesota along the railway southwest of their DMS Plant and south of their product stockpile. The rail loop proposed for this operation would be constructed and owned by CRC but operated by BNSF. The product would be continuously transported via rail during the 8-month period that the mining facility would operate each year and would be transported to the proposed pig iron facility in Minot, North Dakota (see EAW Item 6e). It is estimated that two-unit trains would operate per day, each consisting of 125 rail cars and three locomotives carrying approximately 12,500 long tons of product per train. Rail cars are estimated to be 42 feet long, locomotives are estimated to be 75 feet long, resulting in an estimated overall length of 5,475 feet per train unit. The proposed pig iron facility in Minot, North Dakota is outside of Minnesota's regulatory authority and does not contribute to any potential significant effects within Minnesota. CRC anticipates producing

approximately 500 LTph of product, subject to variability in ore quality and feed characteristics.

Measures would be implemented to minimize potential spillage during concentrate handling and rail loading. These measures would include:

- Use of controlled conveyer discharge points (via conveyor belt) and enclosed or shielded transfer locations, where practicable;
- routine inspection and maintenance of conveyers, chutes, and loadout equipment;
- cleanup of incidental spillage in loadout areas using mechanical sweeping or vacuum methods; and
- proper loading of railcars to prevent overfilling.

Railcars would be inspected prior to departure to ensure doors and hatches are secured. CRC would coordinate with rail operators to implement standard spill prevention and response procedures during rail transport through Minnesota.

Waste Management Areas and Reclamation

No new tailings basins would be constructed as part of the proposed Project. Waste management areas are built within the footprints of the legacy tailings basins that are the plant feed source. In other words, the WMAs would be built within the same areas that are being SCRAM mined. The slopes of the North and South WMAs would be stabilized using industrial stormwater best management practices (BMPs) for erosion protection to minimize erosion and manage stormwater runoff following the proposed Project's Stormwater Pollution Prevention Plan (SWPPP). BMPs, including the erosion and sediment control measures described in EAW Item 11, such as silt fencing, rock check dams, hydro-mulch, and rapid-establishing cover crops, would be implemented for placement and management of reject material generated by the DMR and spiral processing plants.

Most of the historical stockpiles proposed to be mined by CRC were originally placed on a glacial overburden stockpile identified in the Minnesota Natural Resource Atlas as "Hill Annex stripping." This overburden stockpile would remain after mining of the stockpiles, and the WMAs would be placed on the overburden stockpile.

CRC anticipates approximately 13.2 million LT of DMS plant reject material would be conveyed via conveyor belt to the North WMA at a rate of approximately 250 LTph. These materials would be placed atop an existing legacy overburden stockpile base. The final footprint of Heavy Material Rejects #2 stockpile would not extend beyond the existing legacy footprint.

Spiral processing plant reject material would be conveyed via conveyor belt to the South WMA at a rate of approximately 300 LTph. The South WMA has sufficient capacity to accommodate the projected 18 million LT of spiral rejects.

Reject material in both WMAs would be compacted and contoured using a bulldozer to support future land use, promote stability, and direct surface water runoff toward the lined process wastewater basins described in EAW Item 12. Water captured in these basins would be recovered and reused through the proposed Project's closed-loop process water recirculation system, with a portion retained as residual moisture in the placed reject and waste material. Final surface restoration of both

WMAs would be conducted in accordance with the approved Reclamation Plan.

Reclamation Plan Overview

Reclamation would be conducted in accordance with applicable State of Minnesota requirements, including Minn. Rules 6130.1000 through 6130.4100 (Taconite and Iron Ore Reclamation Standards). All areas impacted by ground disturbance, including stockpiles, ponds, roads, processing areas, and associated infrastructure, would be reclaimed in accordance with the approved Reclamation Plan and applicable permit conditions.

Prior to initiating final reclamation of the Scram Mine Project Area, CRC would evaluate the plant site and associated auxiliary infrastructure for potential future reuse, consistent with Minn. Rule 6130.4100. This evaluation may allow for select infrastructure to remain in a deactivated, non-reclaimed condition, provided such infrastructure is demonstrated to be nonpolluting, structurally stable, and safe, and is approved by the DNR. Infrastructure retained under this provision may be repurposed for future mining activities or other approved land uses consistent with post-mining plans.

Infrastructure determined to be unnecessary for future use would be reclaimed in accordance with the Reclamation Plan. Reclamation sequencing for these components would include removal of physical structures followed by regrading and reestablishment of vegetation, initiated as soon as it is determined that the infrastructure is no longer required for operations. Where building demolition is necessary, structures would be removed down to the foundation, and foundations would be removed or reclaimed in accordance with Minn. Rules 6130.3600 and 6130.4100.

Roads would be reclaimed and revegetated in accordance with Minn. Rule 6130.3600. Culverts would be removed, and roadway alignments would be regraded as needed to restore natural drainage patterns or stable conveyance channels consistent with the surrounding landscape and reclamation objectives.

c. Project magnitude:

Project magnitude of the Scram Mine Historic District is provided in Table 3, and in Table 4 for the Scram Mine Project Area.

Table 3: Project Magnitude within Scram Mine Historic District

Description	Number
Total project acreage	297.27
Linear project length	N/A
Number and type of residential units	0
Residential building area (square feet)	0
Commercial building area (square feet)	0
Industrial building area (square feet)	145,818
Institutional building area (square feet)	N/A

Description	Number
Stockpiles (square feet)	5,450,319.09
Tailing basins (square feet)	0
Waste management areas (square feet)	1,551,874.40
Max. structure height (feet)	30

Table 4: Project Magnitude Scram Mine Project Area

Description	Number
Total project acreage	1,429.5
Linear project length	N/A
Number and type of residential units	0
Residential building area (square feet)	0
Commercial building area (square feet)	0
Industrial building area (square feet)	463,057
Institutional building area (square feet)	N/A
Stockpiles (square feet)	6,868,294
Tailing basins (square feet)	28,713,677
Waste management areas (square feet)	8,216,010
Max. structure height (feet)	30

- d. Explain the project purpose; if the project will be carried out by a governmental unit, explain the need for the project and identify its beneficiaries.

Purpose: The purpose of the proposed Project is to process legacy stockpiles and tailings basins containing primarily hematite (iron oxide mineral) resources from historical mining operations at the former Hill Annex Mine. As part of the proposed Project, the DNR would carry out the demolition of historic properties located within the Scram Mine Project Area and implement mitigation commitments discussed above.

Need: The Hill Annex Mine State Park was legislatively authorized in 1988 after the closure of the mine in 1978. The original legislative language establishing the state park recognized the site's School Trust mineral status and future mining potential and, specifically, preserved the path to return to active mining. The Hill Annex Mine State Park was abolished as a state park by the Minnesota State Legislature in 2024. The DNR operated the state park on an annual surface lease, but the DNR does not own the land under the park. The land is School Trust Land and at least 80% of all proceeds from state leases and mineral royalties at the site would go to the Permanent School Trust Fund for the benefit of K-12 public schools in Minnesota. The School Trust Lands at the site hold significant mineral

potential in ore stockpiles, a historic tailings basin, and in-ground mineral reserves. Some existing structures within the Scram Mine Historic District would be demolished to accommodate the proposed Project activities.

Beneficiaries: The proposed Project would benefit the local community, the State School Trust, and the broader public. Vandalism and erosion of the mine pit wall have created significant public safety hazards, limiting safe public access and preventing continued public use of much of the former park facilities. The DNR has been working with the State Historic Preservation Office on a historic mitigation plan to document the site conditions and preserve its history. In addition, the Clubhouse Museum contained many historic mining related artifacts, and the DNR worked with local partners to relocate and preserve these exhibits in a publicly accessible location. The Project is expected to generate approximately 150 local jobs during mineral processing activities. When mineral extraction concludes and leases expire, the DNR would work with community partners to evaluate future land uses that support long-term community and School Trust objectives.

- e. Are future stages of this development including development on any other property planned or likely to happen? ☐ Yes ☒ No
If yes, briefly describe future stages, relationship to present project, timeline and plans for environmental review.

North American Iron LLC proposes to construct and operate a pig iron manufacturing plant in Minot, North Dakota. This plant is not subject to Minnesota authority and is not being constructed or owned by either co-applicant of this EAW.

The Minot plant would receive partially beneficiated iron ore (pre-concentrate) by rail from Minnesota, where it would be roasted, concentrated, pelletized, and converted into pig iron. The pig iron would be shipped off-site to customers via railcar, while byproducts from the process would be granulated, stockpiled, and shipped off-site. Facilities in Minot would also include a power plant to produce electricity for on-site use, cooling towers, and a process wastewater treatment plant. Tailings byproducts generated by the Minot plant would be processed and managed on-site in a tailings storage facility. The plant does not require federal environmental review under the National Environmental Policy Act, and North American Iron LLC continues working on acquiring required state and local permits and approvals for constructing and operating the plant.

- f. Is this project a subsequent stage of an earlier project? ☒ Yes ☐ No
If yes, briefly describe the past development, timeline and any past environmental review.

The Hill-Annex Mine was an open pit iron mine in the Mesabi Range, MN. The mine started shipping ore in 1914 under the Inter-State Iron Company and operated until 1978, producing some 63 million tons of ore. After the Hill-Annex Mine closed the pits subsequently flooded. The site became a state park in 1988. No state environmental review was conducted at the site.

7. Climate Adaptation and Resilience:

- a. Describe the climate trends in the general location of the project (see guidance: *Climate Adaptation and Resilience*) and how climate change is anticipated to affect that location during the life of the project.

Climate change is expected to result in increasing temperatures and a greater frequency and intensity of extreme weather events. In Minnesota, climate models have identified the potential for increased rainfall, heat, localized flooding, and persisting drought conditions. Minnesota's average temperature has increased by 3.0 degrees Fahrenheit (°F) between 1895 and 2020. Most of this warming is concentrated in recent decades, particularly since 1970, and most of Minnesota's observed warming has been in the winter (i.e., December – February), where warming has increased 2-3 times faster than the summer (i.e., June – August). The state's annual rainfall has increased by 3.4 inches from 1895 to 2020. The occurrence of heavy rains, including 3-inch rainfall events, has become more frequent in Minnesota since 2000. Climate projections suggest this trend will continue, with more frequent and intense precipitation events expected in the coming decades (DNR 2025a).

In Itasca County, climate trends closely mirror statewide patterns. Historical data from the Minnesota Climate Trends database show that average temperatures in the county have increased by 0.33°F per decade from 1895 to 2024 (DNR 2025b). Drought severity, measured by the Palmer Drought Severity Index (PDSI), has increased by 0.18 PDSI units per decade over the same period. According to projections from the Minnesota Climate Explorer models, average temperatures could rise by as much as 10°F by the late 21st century (i.e., 2080 – 2099) (DNR 2025c). Annual precipitation in Itasca County has also shown a slight increase from 1985 to 2024 (0.17-inch increase per decade) (DNR 2025b). Current climate models from Minnesota Climate Explorer anticipate a 6-inch increase in average precipitation by the late 21st century (i.e., 2080 – 2099) (DNR 2025c).

These climate changes may elevate the risk of flooding in the Scram Mine Project Area due to more frequent and intense storm events. In 2025, approximately 17 percent of properties in Itasca County were at risk of flooding. This number is projected to rise slightly to 17.4 percent over the next 30 years. Overall, Itasca County is considered to have a moderate flood risk, with minor impacts expected for residential properties and moderate impacts anticipated for commercial properties, infrastructure, and municipal properties (First Street Technology, Inc. 2025). According to Federal Emergency Management Agency (FEMA) flood hazard data, the Scram Mine Project Area is in an Undetermined Flood Hazard Area (Zone D) (FEMA 2025), which is not regulated under existing Itasca County floodplain ordinances (Itasca County 2025).

- b. For each Resource Category in the table below: Describe how the project's proposed activities and how the project's design will interact with those climate trends. Describe proposed adaptations to address the project effects identified. See Table 4.

The proposed Project's proposed activities and how the proposed Project's design would interact with climate trends are provided in Table 5.

Table 5: Climate Resource Category

Resource Category	Climate Considerations	Project Information	Adaptations
Project Design	Climate change could result in increased risk of flooding or drought conditions.	The proposed Project would process approximately 1,000 LTpH of plant feed, which is crude feed material from stockpiles and tailings basins. Material rejects would be managed within two waste management areas and the slopes would be covered with Flex Guard erosion protection and re-vegetated according to the Restoration Plan to minimize stormwater runoff. Stormwater and process water runoff would be contained on-site by the existing perimeter dikes, and the proposed Project is not anticipated to alter existing watershed boundaries or modify host watersheds.	None proposed. The processing of crude feed material would not be impacted by flooding or drought conditions.
Land Use	The proposed Project would result in a change in land use/land cover as vegetated areas are cleared and graded. Following operation, all areas of ground disturbance would be reclaimed and vegetated areas restored. Vegetation clearing and restoration would be staged over	Climate change risks and vulnerabilities identified include changes in water levels of tailings basins and changes in conditions of existing and proposed vegetative cover. Trees that are removed would be chipped and used as mulch on-site for erosion control. Mulch	Reclamation methods in the Scram Mine Project Area following cessation of proposed Project activities will aim to establish plant growth and stabilize soils with surface treatments. These methods would continue until final vegetative cover is established, regardless

Resource Category	Climate Considerations	Project Information	Adaptations
	multiple years as the proposed Project progresses.	would be spread along non-vegetated stockpiles, tailings basin areas, waste management areas or other areas with high erosion risk during winter months when no activity is expected. Other options for sale of timber have not been considered since the entirety of the material would be needed for mulch. Newly planted seed mixes and existing seed banks could be vulnerable to flooding and drought conditions.	of climate concerns. Mulch material would be used on areas with erodible materials that are not actively being mined. These areas include stockpiles, tailings basin areas, waste management areas, and the majority of the site during the winter months when no activity is expected. Monitoring would occur over multiple growing seasons to verify that vegetative cover is established and meets commitments in the Project's State Disposal System Stormwater Pollution Prevention Plan and the Project's Reclamation Plan. The sale of timber was not considered as the entirety of the material would be needed for mulch.
Water Resources	Climate-related impacts to water resources are addressed in EAW Item 12.	Addressed in EAW Item 12.	Addressed in EAW Item 12.
Contamination/ Hazardous Materials/Wastes	Contamination/Hazardous Materials/Waste impacts are addressed in EAW Item 13. Project-related impacts would not be correlated with climate change.	Addressed in EAW Item 13.	Addressed in EAW Item 13.

Resource Category	Climate Considerations	Project Information	Adaptations
Fish, wildlife, plant communities, and sensitive ecological resources (rare features)	Impacts to fish, wildlife, plant communities, and sensitive ecological resources are addressed in EAW Item 14. Project-related impacts to these resources would not be correlated with climate change.	Addressed in EAW Item 14.	Addressed in EAW Item 14.

8. Cover types:

Estimate the acreage of the site with each of the following cover types before and after development:

Cover types within the Scram Mine Historic District are provided in Table 6 and cover types for the Scram Mine Project Area are provided in Table 7. Tree cover impacts within the Scram Mine Historic District are provided in Table 8 and tree cover impacts for the Scram Mine Project Area are provided in Table 9. Green infrastructure is not currently present within the Scram Mine Historic District or Scram Mine Project Area and is not proposed for the Project.

Table 6: Cover types within the Scram Mine Historic District Before and After Proposed Mining Activities

Cover Types	Before (acres)	After (acres)
Wetlands and shallow lakes (<2 meters deep)	1.89	TBD ¹
Deep lakes (>2 meters deep)	20.28	20.28
Wooded/forest	79.42	TBD ¹
Rivers/streams	0.00	0.00
Brush/grassland	49.23	TBD ¹
Cropland	0.00	0.00
Livestock rangeland/pastureland	0.22	TBD ¹
Lawn/landscaping	5.08	TBD ¹
Green infrastructure TOTAL	0.00	0.00

Cover Types	Before (acres)	After (acres)
Impervious surface	4.92	TBD ¹
Developed or barren land	0.00	0.00
Other (none)	136.23	TBD ¹
TOTAL	297.27	297.27¹

Table 7: Cover types within the Scram Mine Project Area Before and After Proposed Mining Activities

Cover Types	Before (acres)	After (acres)
Wetlands and shallow lakes (<2 meters deep)	159.70	TBD ¹
Deep lakes (>2 meters deep)	131.26	131.26
Wooded/forest	728.87	TBD ¹
Rivers/streams	0.00	0.00
Brush/grassland	207.77	TBD ¹
Cropland	0.00	0.00
Livestock rangeland/pastureland	0.22	TBD ¹
Lawn/landscaping	14.33	TBD ¹
Green infrastructure TOTAL	0.00	0.00
Impervious Surface	30.64	TBD ^{1,2}
Stormwater pond (wet sedimentation basin)	0.00	47.12
Other (barren land)	156.06	TBD ¹
TOTAL	1,428.85	1,428.85¹

¹ For Tables 6 and 7, CRC would use a standard forestry reclamation approach and suitable grass, forb, and tree seed mix that will be allowed to naturally revegetate. As such, there may be slight changes in the “after acreages” for some of the cover types such as wooded/forest and brush/grassland.

² There would be no newly paved surfaces.

Table 8: Tree Canopy Impacts Related to Project Activities in the Scram Mine Historic District

Trees	Percent	Number
Estimated tree canopy removal during construction and operations activities	79.42	TBD ¹
New trees planted	TBD ¹	TBD ¹

¹ For Tables 8 and 9, trees or tree seedlings would be included in the seed mix for the Scram Mine Historic District and Scram Mine Project Area, and the trees would be allowed to repopulate.

Table 9: Tree Canopy Impacts Related to Project Activities in the Scram Mine Project Area

Trees	Percent	Number
Estimated tree canopy removal during construction and operations activities	728.87	TBD ¹
New trees planted	TBD	TBD ¹

Following the completion of land-disturbing activities, the Scram Mine Historic District and Scram Mine Project Area would be restored and revegetated in accordance with Minn. Rules 6130.3500 and 6130.3600. The committed reclamation method is a grass and forb seed mix suitable for northern Minnesota, applied to achieve 90 percent vegetative cover within three years. Under this approach, cover types are anticipated to trend toward conditions broadly similar to existing conditions over time, through natural revegetation and recruitment from adjacent forest and wetland vegetation; however, the final acreage breakdown by cover type cannot be predicted with precision at this stage, as it depends on final grading, drainage, and natural recruitment patterns (see Tables 6 and 7). Substantial changes to wetlands or deep lakes are not anticipated after restoration is complete, and no direct impacts to these features are proposed.

Separately, the Reclamation Plan identifies a Modified Forestry Reclamation Approach as a potential reclamation research opportunity, using pioneer species such as jack pine (*Pinus banksiana*), paper birch (*Betula papyrifera*), and poplar species (*Populus* spp.) to actively accelerate forest succession in disturbed areas. This approach is contingent on CRC establishing a research partnership with an academic institution or local government unit and obtaining any required research permit. It is not a committed sitewide reclamation method, and its use would be evaluated and would supplement, rather than replace, the standard grass/forb reclamation described above.

9. Permits and approvals required:

List all known local, state and federal permits, approvals, certifications and financial assistance for the project. Include modifications of any existing permits, governmental review of plans and all direct and indirect forms of public financial assistance including bond guarantees, Tax Increment Financing and infrastructure. *All of these final decisions are prohibited until all appropriate environmental review has been completed. See Minnesota Rules, Chapter 4410.3100.*

Table 10: Required Permits and Approvals

Unit of Government	Type of Application/Approval	Status
U.S. Army Corps of Engineers (USACE)	Section 404 Permit	Required wetland permits would be applied for and received as needed prior to construction.
United State Fish and Wildlife Service (USFWS)	Eagle Disturbance Take or Nest Take permit	CRC would conduct bald eagle nest surveys of construction areas and a 660-foot buffer of construction areas prior to initiating initial construction activities as needed. If a bald eagle nest occurs within the Scram Mine Historic District, Scram Mine Project Area, or within 660 feet of either boundary, a USFWS Eagle Disturbance Take or Nest Take permit may be required.

Unit of Government	Type of Application/Approval	Status
DNR	Permit for the Take of Endangered or Threatened Species Incidental to a Development Project	Dependent upon the results of a presence/probable absence survey and habitat assessment for the state-threatened Case's ladies'-tresses (<i>Spiranthes casei</i>). If a take permit is required, this would be completed prior to conducting Project-related activities that would lead to a take. In addition, if a bald eagle nest occurs within the Scram Mine Historic District, Scram Mine Project Area, or within 660 feet of either boundary, an eagle nest take permit may be required.
DNR	Water Appropriation Permit	Application 2024-3521 was submitted to the DNR and is currently under review.
DNR	Permit to Mine	Revised Permit to Mine and public notice will be required.
DNR	Incidental Determination Delineation, and Possible Wetland Replacement Plan Wetland Conservation Act	Required wetland permits would be applied for as needed prior to construction. Incidental wetland determinations or wetland replacement plans would be submitted if required prior to draining or filling of wetlands, wholly or partially, and excavation in the permanently and semi-permanently flooded areas of type 3, 4, or 5 wetlands, and in all wetland types if the excavation results in filling,

Unit of Government	Type of Application/Approval	Status
		draining, or conversion to non-wetland.
Minnesota Pollution Control Agency (MPCA)	State Disposal System General Stormwater Permit for Construction Activity	To be applied for.
MPCA	SDS Permit for Operation of a Disposal System (Waste Management Area)	To be applied for.
MPCA	Air Permit	CRC is currently working with the MPCA to obtain required coverage under applicable permits.
MPCA	Section 401 Certification	Required certification would be applied for and received as needed prior to construction.
MN State Historical Preservation Office (SHPO)	Minnesota SHPO Review	Ongoing. Archaeology survey results would be submitted to SHPO when completed.
Minnesota Office of the State Archaeologist	Archaeological License	To be applied for as needed.
Minnesota Department of Transportation (MNDOT)	Oversize or Overweight Permits	To be applied for as needed.

Cumulative potential effects may be considered and addressed in response to individual EAW Item Nos. 10-20, or the RGU can address all cumulative potential effects in response to EAW Item No. 22. If addressing cumulative effect under individual items, make sure to include information requested in EAW Item No. 21.

10. Land use:

- a. Describe:
 - i. Existing land use of the site as well as areas adjacent to and near the site, including parks and open space, cemeteries, trails, prime or unique farmlands.

Scram Mine Historic District

The proposed Scram Mine Historic District is within Section 16, Township 56 North, Range 23 West, located near the cities of Calumet and Marble in Itasca County. The Scram Mine Historic District and portions of the Scram Mine Project Area are within the boundaries of the former Hill Annex Mine State Park, which was abolished in 2024. It also intersects one recreational trail, the Mesabi Trail, which is a 10-foot wide, paved (asphalt) bicycle trail that connects the nearby communities of Marble, Calumet, and Pengilly. CRC and DNR are working with the Mesabi Trail Authority to re-route the existing trail to accommodate the proposed Project.

The Scram Mine Project Area includes approximately 19.2 acres of Nashwauk fine sandy loam with 1 to 10 percent slopes, which meets the criteria for “prime farmland” as defined in 7 CFR § 657.5(a). However, due to the area’s historical use for mining and its inclusion within the former Hill Annex Mine State Park, it is no longer available for agricultural use and therefore does not qualify as prime farmland under federal guidelines. However, the removal of stockpiles and subsequent reclamation activities may improve land conditions.

Permanent and temporary land cover impacts were assessed using the National Land Cover Database (Figure 4) and were categorized by Project components in Table 11.

Table 11: Land Cover Impacts in the Scram Mine Historic District

National Landcover Database Cover Class (2024)	Existing Conditions (acres)	Temporary Impacts (acres)	Permanent Impacts (acres)
Barren Land	136.23	90.85	N/A
Deciduous Forest	52.91	32.87	N/A
Shrub/Scrub	48.12	26.93	N/A
Mixed Forest	20.55	9.48	N/A
Open Water	20.28	0.17	N/A
Evergreen Forest	5.96	3.27	N/A
Developed, Low Intensity	5.08	0.96	N/A
Developed, Open Space	4.25	0.88	N/A
Herbaceous	1.11	0.34	N/A
Woody Wetlands	1.89	0.11	N/A
Developed, Medium	0.67	<0.01	N/A

National Landcover Database Cover Class (2024)	Existing Conditions (acres)	Temporary Impacts (acres)	Permanent Impacts (acres)
Hay/Pasture	0.22	0.18	N/A
Total	297.27	166.03	--

Note: Following the completion of land-disturbing activities, the Scram Mine Historic District would be restored and revegetated in accordance with Minn. Rules 6130.3500 and 6130.3600. Suitable grass, forb, and tree seed mixes appropriate for northern Minnesota would be used. The Scram Mine Historic District would be restored to similar cover types as existing conditions.

Scram Mine Project Area

The proposed Scram Mine Project Area is within Sections 15, 16, 17, 20, 21, 22, 23, 26, and 27 Township 56 North, Range 23 West, located near the cities of Calumet and Marble in Itasca County. The Scram Mine Project Area is within the boundaries of the former Hill Annex Mine State Park, which was abolished in 2024. It also intersects one recreational trail, the Mesabi Trail, which is a 10-foot wide, paved (asphalt) bicycle trail and connects the nearby communities of Marble, Calumet, and Pengilly. CRC and DNR are working with the Mesabi Trail Authority to re-route the existing trail to accommodate the proposed Project. The Pengilly Snowmobile Trail and the Cross Range ATV trail also intersect the Scram Mine Project Area.

The Scram Mine Project Area includes approximately 56.7 acres of Nashwauk fine sandy loam with 1 to 10 percent slopes, which meets the criteria for “prime farmland” as defined in 7 CFR § 657.5(a). However, due to the area’s historical use for mining and its inclusion within the former Hill Annex Mine State Park, it is no longer available for agricultural use and therefore does not qualify as prime farmland under federal guidelines. However, the removal of stockpiles and subsequent reclamation activities may improve land conditions.

Permanent and temporary land cover impacts were assessed using the National Land Cover Database (Figure 4) and were categorized by Project components in Table 12.

Table 12: Land Cover Impacts in the Scram Mine Project Area

National Landcover Database Cover Class (2024)	Existing Conditions (acres)	Temporary Impacts (acres)	Permanent Impacts (acres)
Deciduous Forest	510.44	313.52	N/A
Shrub/Scrub	197.70	116.23	N/A
Mixed Forest	191.12	114.76	N/A
Barren Land	156.05	109.28	N/A
Woody Wetlands	141.55	134.56	N/A

National Landcover Database Cover Class (2024)	Existing Conditions (acres)	Temporary Impacts (acres)	Permanent Impacts (acres)
Open Water	131.26	110.03	N/A
Developed, Open Space	29.96	11.52	N/A
Evergreen Forest	27.31	18.85	N/A
Emergent Herbaceous Wetlands	18.15	18.01	N/A
Developed, Low Intensity	14.33	3.73	N/A
Herbaceous	10.07	9.23	N/A
Developed, Medium Intensity	0.68	0.00	N/A
Hay/Pasture	0.22	0.18	N/A
Total	1,429.85	959.91	--

Note: Following the completion of land-disturbing activities, the Scram Mine Project Area would be restored and revegetated in accordance with Minn. Rules 6130.3500 and 6130.3600. Suitable grass, forb, and tree seed mixes appropriate for northern Minnesota would be used. The Scram Mine Project Area would be restored to similar cover types as existing conditions.

- ii. Plans. Describe planned land use as identified in comprehensive plan (if available) and any other applicable plan for land use, water, or resources management by a local, regional, state, or federal agency.

The proposed land use and resource management are discussed in detail throughout EAW Items 10, 11, 12, and 14. All land use and resource management would be done in accordance with applicable regulations and permit requirements, including the Project's PTM.

The Project area is entirely within the 1855 Ceded Territory, which was created by the 1855 Treaty of Washington. In this treaty the Mississippi, Pillager, and Lake Winibigoshish Bands of Ojibwe ceded the lands contained within the Ceded Territory to the United States Government. Among others the Treaty created the Mille Lacs Reservation and Leech Lake Reservation, the latter being approximately 75 miles west of the Project site.

- iii. Zoning, including special districts or overlays such as shoreland, floodplain, wild and scenic rivers, critical area, agricultural preserves, etc.

Zoning within the Scram Mine Historic District is within the City of Marble boundary and includes state

trust lands and active state taconite lease interests (Cleveland-Cliffs).

Zoning within the Scram Mine Project Area includes Public and Industrial districts as designated by Itasca County, as well as zoning districts for the cities of Marble and Calumet. Itasca County zoning classifications include farmed residential, industrial, iron mining overlay, and public lands (Itasca County 2024).

Itasca County designates specific industrial zones as Mining Overlay Districts, A, B, and C, where mining is the primary permitted use. These districts include areas with known or potential iron ore resources (Itasca County 2013). The County's Comprehensive Land Use Plan prioritizes these zones to "encourage a sound and diverse economy that meets the needs of Itasca County residents and visitors for employment and services." As the proposed Project involves extractive operations of iron ore, it aligns with the land use objectives of these overlay districts.

The Scram Mine Project Area primarily includes state trust land, acquired surface estates, tax forfeited surface estates, or active state lease agreements. The Scram Mine Project Area does not intersect any special zoning districts, such as shoreland, floodplain, wildlife and scenic rivers, critical areas, or agricultural preserves. It is also outside the areas designated for parks, open space, or cemeteries.

The proposed Project would be implemented in accordance with Minn. Rules 6130.100 (Siting Goals), 6130.1100 (General Criteria for Site Selections), 6130.1200 (Exclusion Areas for Mining), and 6130.1300 (Avoidance Areas for Mining), thereby ensuring full compliance with applicable siting regulations and environmental standards.

- iv. If any critical facilities (i.e. facilities necessary for public health and safety, those storing hazardous materials, or those with housing occupants who may be insufficiently mobile) are proposed in floodplain areas and other areas identified as at risk for localized flooding, describe the risk potential considering changing precipitation and event intensity.

There are no critical facilities proposed in floodplain areas or areas identified as at risk for localized flooding; therefore, this section does not apply.

- b. Discuss the project's compatibility with nearby land uses, zoning, and plans listed in Item 9a above, concentrating on implications for environmental effects.

Local zoning requirements are not applicable for the proposed Project as the proposed Project is primarily located on state-owned, leased, or managed lands. Therefore, Itasca County, cities, and Greenway Township do not have jurisdictional authority, including zoning, over the proposed Project. CRC and the DNR have confirmed this with the appropriate jurisdictional authorities.

- c. Identify measures incorporated into the proposed project to mitigate any potential incompatibility as discussed in Item 10b above and any risk potential.

No incompatibility has been identified.

11. Geology, soils and topography/land forms:

- a. Geology - Describe the geology underlying the project area and identify and map any susceptible geologic features such as sinkholes, shallow limestone formations, unconfined/shallow aquifers, or karst conditions. Discuss any limitations of these features for the project and any effects the project could have on these features. Identify any project designs or mitigation measures to address effects to geologic features.

Surficial Geology

According to the Minnesota DNR's Ecological Classification System (2025d), the Scram Mine Historic District and Scram Mine Project Area are within the Nashwauk Uplands Subsection, which is characterized by rolling till plains, moraines, and flat outwash plains formed by the Rainy lobe glacier. Most of the Scram Mine Historic District and Scram Mine Project Area are underlain by glacial deposits from ice and meltwater of the western portion of the St. Louis sublobe, consisting primarily of mixed till. These till materials range from yellow-brown to gray and have clay to loam textures, containing pebbles, cobbles, and boulders juxtaposed chaotically with other glacial and ice-proximal units.

The eastern portion of the railroad corridor, which bisects the northern part of the Scram Mine Project Area, is underlain by glacial-lacustrine deposits composed mainly of silt and clay, with some sand (Jennings et al. 2005). However, historic mining activities have significantly altered surficial geology, replacing much of the native material with mining stockpiles, tailings, and overburden stripping fill materials. This legacy recontouring of the original surface has displaced and rerouted previous water flow and drainage patterns throughout the Scram Mine Project Area.

Bedrock Geology

The northern portion of the Scram Mine Project Area and entirety of the Scram Mine Historic District are predominantly underlain by the Biwabik Iron Formation, a Paleoproterozoic unit (approximately 1,600 to 2,500 million years ago [Ma]) composed of thick-bedded granular chert, iron silicates, magnetite, and hematite. These are interlayered with thin-bedded iron silicates, carbonates, and additional iron oxides, formed primarily through chemical precipitation.

The Coleraine Formation transects the southern border of the northern portion of the Scram Mine Project Area and underlies most of the southern portion of the Scram Mine Project Area and Scram Mine Historic District. This Cretaceous unit (approximately 95 Ma) consists of conglomerates rich in iron-formation clasts, hematite-cemented sandstone, and blue-green shale.

The Virginia Formation immediately underlies much of the southern portion of the Scram Mine Project Area and the southeastern boundary of northern portion of the Scram Mine Project Area. This Paleoproterozoic unit (1,827 to 1,878 Ma) includes interbedded carbonaceous shale, mudstone, siltstone, and fine-grained feldspathic graywacke.

The Calumet Fault, a northeast-southwest trending normal dip-slip fault, transects the western edge of the northern portion of the Scram Mine Project Area, representing the uplifted block.

Additionally, a south-southeast trending anticline and syncline are present within the southern half of the northern portion of the Scram Mine Project Area (Jirsa et al. 2005).

Based on the geology, karst features such as sinkholes, springs, or shallow limestone formations are not present within the proposed Scram Mine Project Area.

Groundwater

Groundwater wells within the Biwabik Iron Formation can yield up to 1,000 gallons per minute (gpm) in highly fractured taconite and ore zones, historically supporting municipal and industrial uses. In contrast, the Coleraine Formation is not known to yield groundwater to wells in the area. The Virginia Formation may yield up to 30 gpm from fractured zones near its upper surface. Perched aquifers may also occur within coarse stratified sand and gravel deposits of the glacial drift (Cotter et al. 1965). Additional details regarding groundwater resources within the Scram Mine Historic District and Scram Mine Project Area are discussed in EAW Item 12a.ii.

- b. Soils and topography - Describe the soils on the site, giving NRCS (SCS) classifications and descriptions, including limitations of soils. Describe topography, any special site conditions relating to erosion potential, soil stability or other soils limitations, such as steep slopes, highly permeable soils. Provide estimated volume and acreage of soil excavation and/or grading. Discuss impacts from project activities (distinguish between construction and operational activities) related to soils and topography. Identify measures during and after project construction to address soil limitations including stabilization, soil corrections or other measures. Erosion/sedimentation control related to stormwater runoff should be addressed in response to Item 12b.ii.
- NOTE: For silica sand projects, the EAW must include a hydrogeologic investigation assessing the potential groundwater and surface water effects and geologic conditions that could create an increased risk of potentially significant effects on groundwater and surface water. Descriptions of water resources and potential effects from the project in EAW Item 12 must be consistent with the geology, soils and topography/land forms and potential effects described in EAW Item 11.

Soils Overview for Scram Mine Historic District

Most of the native soils within the Scram Mine Historic District were significantly disturbed by historic mining activities. According to the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Web Soil Survey (WSS), soils within the Scram Mine Historic District are primarily comprised of those associated with mining, including udorthents, dumps, and pits (Table 13) (Appendix A).

Soils within the Scram Mine Historic District are comprised of:

- Udorthents (29.2 percent). These soils were extensively altered by human activity and typically lack well-defined soil horizons.
- Dumps and pits (63.7 percent). Represent areas directly associated with historic mining operations.

Approximately 7 percent of the Scram Mine Historic District is comprised of undisturbed native soils. The two soil types include:

- Nashwauk fine sandy loam (6.5 percent)
- Pengilly-Winterfield association (0.5 percent)

Approximately 63.7 percent of the soils within the Scram Mine Historic District do not have drainage class ratings. Most of the remaining soils are considered well drained (29.3 percent of Scram Mine Historic District). Less than 1 percent of the Scram Mine Historic District contains soils classified as poorly drained.

The NRCS Erosion Hazard Rating within the Scram Mine Historic District ranges from not rated to severe (Figure 10).

Table 13: Scram Mine Historic District USDA WSS Mapped Soil Types

Soil Map Unit Name	NRCS Erosion Hazard Rating	Drainage Class	Acres in Scram Mine Historic District	Percent of Scram Mine Historic District
Mine dumps	Not rated	Not rated	130.9	44.0
Udorthents, nearly level to rolling	Moderate	Well drained	85.9	28.9
Mine pits	Not rated	Not rated	58.6	19.7
Nashwauk fine sandy loam, 1 to 10 percent slopes	Moderate	Moderately well drained	19.2	6.5
Pengilly-Winterfield association	Slight	Poorly drained	1.6	0.5
Udorthents, very steep	Severe	Well drained	1.0	0.4
		Total	297.2	100.0

Soils Overview for Scram Mine Project Area

Most of the native soils within the Scram Mine Project Area were significantly disturbed by historic mining activities. According to the USDA NRCS WSS, the Scram Mine Project Area is primarily underlain by soil map units associated with mining, including udorthents, slickens, water, dumps, and pits (Table 14) (Appendix A).

Soils within the Scram Mine Project Area are comprised of:

- Udorthents (35.0 percent). These soils were extensively altered by human activity and typically lack well-defined soil horizons.
- Slickens (24.9 percent). These soils consist of fine-textured, ground rock materials generated during mining and material separation processes.
- Water, dumps, and pits (34.0 percent). Represent areas directly associated with historic mining operations.

Approximately 5.9 percent of the Scram Mine Project Area is comprised of undisturbed native soils. The five soil types include:

- Nashwauk fine sandy loam (4.3 percent)
- Keewatin silt loam (0.8 percent)
- Pengilly-Winterfield association (0.2 percent)
- Eagleview and Menahga soils (0.2 percent)
- Mahtomedi and Graycalm soil map units (0.3 percent)
- Cromwell fine sandy loam (0.1 percent)

Approximately 58.9 percent of the soils within the Scram Mine Project Area do not have drainage class ratings. Most of the remaining soils are considered well drained, somewhat excessively drained, or excessively drained (35.6 percent of the Scram Mine Project Area). Approximately 5.5 percent of the Scram Mine Project Area contains soils classified as somewhat poorly drained, poorly drained, or very poorly drained.

The NRCS Erosion Hazard Rating within the Scram Mining Project Area ranges from not rated to severe (Figure 10).

Table 14: Scram Mine Project Area USDA WSS Mapped Soil Types

Soil Map Unit Name	NRCS Erosion Hazard Rating	Drainage Class	Acres in Scram Mine Historic District	Percent of Scram Mine Historic District
Udorthents, nearly level to rolling	Moderate	Well drained	438.9	30.7
Slickens	Not rated	N/A	356.4	24.9

Soil Map Unit Name	NRCS Erosion Hazard Rating	Drainage Class	Acres in Scram Mine Historic District	Percent of Scram Mine Historic District
Dumps, mine	Not rated	N/A	281.7	19.8
Water	Not rated	N/A	134.3	9.4
Pits, mine	Not rated	N/A	69.1	4.8
Udorthents, very steep	Severe	Well drained	61.9	4.3
Nashwauk fine sandy loam, 1 to 10 percent slopes	Moderate	Moderately well drained	61.5	4.3
Keewatin silt loam	Slight	Somewhat poorly drained	11.6	0.8
Mahtomedi and Graycalm soils, 1 to 10 percent slopes	Slight	Excessively drained	4.2	0.3
Pengilly-Winterfield association	Slight	Poorly drained	3.5	0.3
Eagleview and Menahga soils, 3 to 15 percent slopes	Slight	Somewhat excessively drained	3.4	0.3
Cromwell fine sandy loam, 1 to	Moderate	Somewhat excessively	1.9	0.1
Blackhoof muck	Slight	Very poorly drained	0.5	<0.1
		Total	1,429.5	100.0

Erosion Hazard and Soil Drainage Scram Mine Historic District

The USDA NRCS erosion hazard rating assesses the potential for soil loss in off-road or off-trail areas following surface disturbance. Erosion hazard ratings within Scram Mine Historic District range from slight to very severe:

- 63.7 percent of soils in the Scram Mine Historic District do not have erosion hazard ratings. These soils are related to the historic mining operation (i.e., dumps and pits).
- 35.4 percent of soils have moderate erosion hazard ratings, indicating that some erosion is likely and erosion control measures may be necessary.
- 0.5 percent of soils have slight erosion hazard ratings, suggesting minimal erosion risk under normal climatic conditions.
- 0.3 percent of soils have very severe erosion hazard ratings, typically in areas with steep slopes where erosion risks are significantly higher.

Erosion Hazard and Soil Drainage Scram Mine Project Area

Erosion hazard ratings within the Scram Mine Project Area range from slight to very severe:

- 58.9 percent of the area lacks available erosion hazard data and is related to the historical mining operations including slickens, dumps, pits, and open water.
- 35.1 percent are rated moderate, indicating that some erosion is likely and erosion control measures may be necessary.
- 4.3 percent are rated very severe, typically in areas with steep slopes where erosion risks are significantly higher.
- 1.5 percent are rated slight, suggesting minimal erosion risk under normal climatic conditions.

Erosion and Sediment Control Measures

Soil disturbance would be phased in coordination with mining activities and removal of buildings within the Scram Mine Historic District and managed in accordance with the Project's Reclamation Plan and applicable State of Minnesota reclamation standards, including Minn. Rules 6130.2000, 6130.3500, and 6130.3600. These rules establish performance standards for mining practices, erosion control, and site stabilization during active operations and reclamation.

Erosion and sediment control BMPs would be implemented throughout construction and mining operations and detailed in the Project's SWPPP when developed. Erosion control BMPs may include:

- Natural fiber erosion blankets,
- Silt fencing,
- Hydro-mulch,
- Straw mulch,
- Rapid-establishing cover crops, and

- Rock check dams

Soil stabilization would begin immediately following soil-disturbing activities, weather permitting, consistent with the requirements of Minn. Rule 6130.3600. All disturbed areas would be reseeded with a DNR-approved seed mixture during the restoration phase of the proposed Project to establish permanent vegetative cover and minimize erosion.

To comply with water quality standards, all applicable conditions of the MPCA's) SDS General Stormwater Permit for Construction Activity would be met. Stormwater runoff management measures are further described in EAW Item 12b, which also outlines applicable stormwater, erosion control, and permitting requirements.

Topography/Landforms

The Scram Mine Historic District and Scram Mine Project Area are located within the Twin Lakes – Swan River subwatershed (Hydrologic Unit Code 070101030403), which is part of the Mississippi River – Grand Rapids Watershed in the Upper Mississippi River Basin. Surface waters from this region would ultimately flow to the Mississippi River Headwaters.

Geographically, the Scram Mine Project Area is situated within the Nashwauk Uplands Subsection, a landscape formed by the Rainy lobe glacier and characterized by rolling till plains, moraines, and relatively flat outwash plains. One of the most prominent regional landforms is Giants Range, a narrow bedrock ridge rising approximately 200 to 400 feet above the surrounding terrain and located northeast of the Scram Mine Project Area (DNR 2025d). The Giants Range forms the southern boundary of the Nashwauk Uplands Section.

Historic mining activities have substantially modified topography within both the Scram Mine Historic District and Scram Mine Project Area. Existing landforms include stockpiles, tailings basins, pit features, and reworked surfaces. Elevations within the Scram Mine Project Area range from approximately 1,596 feet above mean sea level (amsl) to approximately 1,270 feet amsl (Figures 1 and 2 and map series). Light detection and ranging data for Itasca County indicate the average slope within the North Area is 10.3 percent, the average slope in the North Tailings Basin Area is 3.9 percent, and the average slope in the South Tailings Basin Area is 1.5 percent.

Construction and operational activities associated with the proposed Project would largely occur within areas previously disturbed by historic mining. Soil excavation and grading activities would be conducted across active work areas totaling approximately 20 acres at any given time within the Scram Mine Project Area. These activities would ensure that ground surfaces are stable, level, and free of obstructions, allowing for the safe and efficient movement of equipment and materials. The specific depth and volume of excavation would vary based on site-specific conditions and the requirements of each work area.

As the proposed Project would occur in an area historically disturbed by mining, the proposed Project is not anticipated to result in substantial new alterations to regional topography or natural landforms. Localized topographic changes within the Scram Mine Project Area may occur as slopes are regraded to allow for the efficient movement of equipment and materials. Topographic changes would be limited to regrading associated with material handling areas, WMAs, access roads, and infrastructure removal. These changes would be managed in accordance with the Project's Reclamation Plan and

applicable Minnesota reclamation standards. Final landform configuration and stabilization are described further in the Reclamation Plan (EAW Item 5b) and Stormwater Management (EAW Item 12b.ii) sections.

The Scram Mine Historic District contains multiple stockpiles and exhibits greater localized topographic variability. Surface drainage in this area is influenced by stockpile geometry, slopes, and orientation, which can direct runoff toward multiple localized flow paths. Runoff from stockpiles is managed through onsite containment, grading, and stormwater controls to prevent uncontrolled offsite discharge, as described in EAW Item 12b.ii.

In contrast, the southern portion of the Scram Mine Project Area includes several tailings basins and generally slopes toward the southeast. Surface drainage from this area flows predominantly toward existing onsite tailings ponds (Figure 5A). Areas not hydraulically connected to tailings ponds, such as localized upland features, stockpile margins, and infrastructure areas, drain toward engineered stormwater BMPs, including stormwater ponds, vegetative buffers, and silt fence.

12. Water resources:

a. Describe surface water and groundwater features on or near the site in a.i. and a.ii. below.

- i. Surface water - lakes, streams, wetlands, intermittent channels, and county/judicial ditches. Include any special designations such as public waters, shoreland classification and floodway/floodplain, trout stream/lake, wildlife lakes, migratory waterfowl feeding/resting lake, and outstanding resource value water. Include the presence of aquatic invasive species and the water quality impairments or special designations listed on the current MPCA 303d Impaired Waters List that are within 1 mile of the project. Include DNR Public Waters Inventory number(s), if any.

Surface Water Features and Wetlands Scram Mine Historic District

A portion of the Hill Annex Pit is within the Scram Mine Historic District. The Hill Annex Pit was not classified as a DNR Public Water Inventory (2025h) waterbody.

Surface Water Features and Wetlands Scram Mine Project Area

The Scram Mine Project Area contains several surface water features, including Hill Annex Pond One, three unnamed basins in the southern portion of the Scram Mine Project Area, and an unnamed lake that partially extends into the northern portion of the Scram Mine Project Area. None of the water features in the Scram Mine Project Area were classified as DNR Public Water Inventory (2025h) waterbodies.

Water required for the proposed Project would be sourced from the Hill Annex Pit as described in EAW Item 12b below. Based on the final 2024 MPCA 303d Impaired Waters List (DNR 2024), the following impaired Public Waters Inventory (PWI) water resources (Figure 5A) were identified within one mile of the Scram Mine Project Area:

- **Swan River (Kittle Number: M-128):** Located approximately 0.9 miles southeast of the Scram Mine Project Area, is an impaired stream with aquatic consumption, aquatic recreation, sulfate, and wildlife and recreation impairments. Total maximum daily loads (TMDLs) have

been approved for *Escherichia coli* and mercury in fish tissue. A portion of Swan River (outlet of West Bay on Swan Lake) is identified as an MPCA wild rice water.

- **Snowball Lake (DOWLKNUM: 31010800):** Located less than 0.1 miles north of the railroad rights-of-way in the northeastern portion of the Scram Mine Project Area, this lake is impaired with aquatic consumption impairments. TMDLs have been approved for mercury in fish tissue.
- **Upper Panasa Lake (DOWLKNUM: 31011100):** This is a Priority Shallow Lake. This lake is impaired with aquatic consumption impairments and TMDLs have been approved for mercury in fish tissue.
- **Lower Panasa Lake (DOWLKNUM: 31011200):** Located approximately 0.1 miles south of the southern portion of the Scram Mine Project Area, this lake is impaired with aquatic consumption impairments. TMDLs have been approved for mercury in fish tissue.
- **Swan Lake (DOWLKNUM: 31006701):** Located 0.9 miles southeast of the Scram Mine Project Area. The Minnesota Biological Survey (MBS) has identified Swan Lake as a Site of Moderate Biodiversity Significance. This lake is a high-priority fishery with annual walleye (*Stizostedion vitreum*) stocking, a special fishing regulation and intensive monitoring. This lake is also a coldwater fishery with burbot (*Lota lota*) and cisco (*Coregonus artedii*) present. The southwest bay of Swan Lake is impaired for aquatic consumption and wild rice. Swan Lake is also an MPCA and DNR wild rice water.
- **Mud Lake (DOWLKNUM 31011000):** Located 0.2 miles southwest of the Scram Mine Project Area;
- **Unnamed Basin (DOWLKNUM: 31010700):** Located 0.5 miles northeast of the Scram Mine Project Area;
- **Unnamed Basin (former Majorca Tailings Basin) (DOWLKNUM: 31010500):** This is a Priority Shallow Lake. Located 0.4 miles north of the Scram Mine Project Area;
- **Unnamed Stream (Kittle number: M-128-016):** Extending northwest to southeast, located 0.19 miles southeast of the Scram Mine Project Area at the closest point, and
- **Snowball Creek (Kittle number: M-128-017):** Extending northwest to southeast, located 0.3 miles east of the Scram Mine Project Area at the closest point.

Until a final rule is provided by the U.S. Army Corps of Engineers, all wetlands within the Scram Mine Project Area would be subject to additional federal regulations or permitting under Section 404 of the Clean Water Act (CWA).

In 2025, Northeast Technical Services, Inc. (NTS) staff prepared a wetland delineation report for the Scram Mine Project Area. Jurisdictional status still needs to be determined for wetlands within the Scram Mine Project Area following submittal of the delineation report to determine if wetlands would be subject to additional regulations or permitting under Section 404 of the Clean Water Act (CWA).

A total of 105.4 acres of wetlands were delineated in the Scram Mine Project Area. Of these, 98.6 acres were incidental wetlands and 6.3 acres were natural wetlands, (Table 13). A total of 1.6 acres were delineated in the Scram Mine Historic District. The 1.55 wetland acres in the Scram Mine Historic District included 0.9 acre of incidental wetlands and 0.7 acre of natural wetlands (Table 15).

Table 15: Delineated Wetlands within the Scram Mine Project Area and Scram Mine Historic District

Wetland ID	Type	Area in the Scram Mine Project Area (Acres)	Area in Scram Mine Historic District (Acres)
Ditch 1.1-2	Depressional	0.04	--
Ditch 2	Depressional	0.12	--
Ditch 3	Depressional	0.09	--
Ditch 4	Depressional	0.15	--
Ditch 5	Depressional	0.41	0.12
Ditch 6	Depressional	0.47	0.19
Ditch 7	Depressional	<0.01	<0.01
EV 03	Depressional	23.09	--
EV 04	Depressional	1.59	--
EV 06	Depressional	0.51	--
EV 07	Depressional	0.93	--
EV 08	Depressional	1.03	--
EV 09	Depressional	0.64	--
EV 11	Depressional	0.23	0.23
EV 14	Depressional	0.02	--
EV 16	Depressional	0.21	--
EV 17	Depressional	0.85	--
EV 19	Depressional	0.71	--

Wetland ID	Type	Area in the Scram Mine Project Area (Acres)	Area in Scram Mine Historic District (Acres)
EV 25	Depressional	1.12	<0.01
EV 27	Depressional	0.08	0.08
EV 29	Depressional	0.41	--
FW 02	Depressional	0.27	--
FW 09	Depressional	2.68	--
FW 27	Depressional	6.00	--
FW 33	Depressional	0.59	--
FW 34	Depressional	0.87	0.06
FW 35	Depressional	1.37	--
FW 37	Depressional	0.02	0.02
FW 39	Depressional	0.04	0.04
FW 40	Depressional	0.17	--
FW 42	Depressional	0.01	<0.01
FW 45	Depressional/Riverine	0.04	--
SS 03	Depressional	2.86	--
SS 04	Depressional	43.89	--
SS 07	Depressional	2.20	--
SS 08	Depressional	3.63	--

Wetland ID	Type	Area in the Scram Mine Project Area (Acres)	Area in Scram Mine Historic District (Acres)
SS 09	Depressional	0.05	--
SW 02	Depressional	1.11	--
SW 03	Depressional	0.10	0.10
SW 04	Depressional	0.46	--
EV 10	Depressional	0.58	0.58
EV 21	Depressional	1.82	--
EV 22	Depressional	0.38	--
EV 23	Depressional	0.43	--
EV 24	Depressional	0.53	--
EV 30	Depressional	0.09	--
FW 36	Depressional	0.90	--
FW 38	Depressional	0.07	0.03
FW 43	Depressional	0.08	0.08
FW 44	Depressional	0.51	--
SS 10	Depressional	0.64	--
SS 11	Depressional	0.27	--
	Total	105.36	1.55

- ii. Groundwater – aquifers, springs, seeps. Include: 1) depth to groundwater; 2) if project is within a MDH wellhead protection area; 3) identification of any onsite and/or nearby wells, including unique numbers and well logs if available. If there

are no wells known on site or nearby, explain the methodology used to determine this.

Groundwater Scram Mine Project Area

According to the Minnesota Hydrogeology Atlas (DNR 2016), the depth to groundwater within the Scram Mine Project Area and Scram Mine Historic District ranges from the surface to more than 50 feet below ground surface (Figure 6). Groundwater in the vicinity of the proposed Project is assumed to flow toward nearby surface water bodies and lower elevation areas. Minimal alteration of the existing surface is anticipated, which would help preserve existing surface water connections and limit potential impacts to groundwater flow.

Based on the Minnesota Department of Health (MDH) Source Water Protection Web Map Viewer (MDH 2025), the Scram Mine Historic District and Scram Mine Project Area are not located within any Drinking Water Supply Management Areas or Wellhead Protection Areas. No wells were mapped within the Scram Mine Historic District or Scram Mine Project Area, there are eight wells mapped within 500 feet of the Scram Mine Project Area or Scram Mine Historic District (Table 16) (Figure 6).

Table 16: Groundwater Wells Identified within 500 feet of the Scram Mine Historic District and Scram Mine Project Area

Well ID	Well Depth (feet below ground surface)	Date Drilled (Month/Day/Year)	UTM Easting	UTM Northing
416498	300	5/19/1986	481327	5241577
789941	120	1/15/2013	479066	5241424
789942	120	1/15/2013	479561	5241280
804404	350	8/26/2015	479558	5241280
854072	218	11/13/2020	481331	5241561
855029	65.5	4/28/2021	478994	5241070
876467	334	3/2/2022	479066	5241419
876468	275	3/10/2022	478998	5241070

b. Describe effects from project activities on water resources and measures to minimize or mitigate the effects in Item b.i. through Item b.iv. below.

i. Wastewater - For each of the following, describe the sources, quantities and

composition of all sanitary, municipal/domestic and industrial wastewater produced or treated at the site.

- 1) If the wastewater discharge is to a publicly owned treatment facility, identify any pretreatment measures and the ability of the facility to handle the added water and waste loadings, including any effects on, or required expansion of, municipal wastewater infrastructure.

Publicly Owned Treatment Facilities

All water used for the proposed Project within the Scram Mine Historic District and Scram Mine Project Area would be managed within a closed-loop operational system. Process water would be captured, stored or reused onsite, with no direct discharge of wastewater to surface waters. Residual water not actively reused would remain as moisture within the reject materials transferred to the North and South WMAs, where it would be retained and managed onsite.

No sanitary, municipal/domestic, or industrial wastewater would be discharged to a publicly owned treatment facilities. Therefore, the proposed Project would not increase flows, pollutant loadings, or treatment demands on municipal wastewater infrastructure, and no pretreatment measures or infrastructure modifications would be required. As a result, this section is not applicable.

- 2) If the wastewater discharge is to a subsurface sewage treatment systems (SSTS), describe the system used, the design flow, and suitability of site conditions for such a system. If septic systems are part of the project, describe the availability of septage disposal options within the region to handle the ongoing amounts generated as a result of the project. Consider the effects of current Minnesota climate trends and anticipated changes in rainfall frequency, intensity and amount with this discussion.

Subsurface Sewage Treatment Systems (SSTS)

The proposed Project would not discharge wastewater to subsurface sewage treatment systems (SSTS). All process generated would either be recirculated within the Scram Mine Project Area or Scram Mine Historic District, temporarily stored within onsite containment features, or retained as moisture within the reject materials managed in the North and South WMAs. No septic or subsurface wastewater treatment systems are proposed for process or industrial wastewater management.

Accordingly, considerations related to SSTS design flow, site suitability, septage disposal capacity, or long-term system performance under current or anticipated Minnesota climate conditions are not applicable.

- 3) If the wastewater discharge is to surface water, identify the wastewater treatment methods and identify discharge points and proposed effluent limitations to mitigate impacts. Discuss any effects to surface or groundwater from wastewater discharges, taking into consideration how current Minnesota climate trends and anticipated climate change in the general location of the project may influence the effects.

Surface Water Discharge

No direct surface water discharge from CRC processes would occur. Process water and contact water generated during Project operations would be retained onsite through internal recirculation, containment within engineered stormwater management features, and retention as moisture within reject materials managed in the North and South WMAs. The lined process wastewater basins are intentionally designed without a discharge outlet, consistent with the proposed Project's closed-loop water management approach (EAW Item 6). If necessary, water captured in these basins would be withdrawn and returned to the plant process water system for reuse in beneficiation at the DMS and spiral plants (Exhibits 13 and 14).

Project water management has been evaluated for consistency with Minn. Rules. This includes consistency with Minn. R. 6130.2200, which addresses watershed modification. Consistency with Minn. R. Ch. 7001, which regulates potential mine wastewater discharges to surface waters, and Minn. Stat. Ch. 115 that regulates disposal systems, dictate that such discharges are prohibited except as authorized under a NPDES or SDS permit. Because the proposed Project is designed to operate without direct discharges of process wastewater to surface waters, compliance within Minn. R. Ch. 7001 and Minn. Stat. Ch. 115 would be maintained. If future operational conditions require discharge not currently anticipated, such discharge would be subject to permitting and compliance with Minn. R. Ch. 7001, Minn. Stat. Ch. 115, and applicable MPCA water quality standards.

Stormwater runoff associated with the Scram Mine Project Area and Scram Mine Historic District would be managed under applicable MPCA SDS Permit requirements, as discussed in Item 12b.ii. Any permitted stormwater discharges would be subject to applicable effluent limits, monitoring, and BMPs necessary to protect surface water and groundwater quality, taking into consideration current Minnesota climate trends and anticipated changes in precipitation frequency and intensity.

- ii. Stormwater - Describe changes in surface hydrology resulting from change of land cover. Describe the routes and receiving water bodies for runoff from the project site (major downstream water bodies as well as the immediate receiving waters). Discuss environmental effects from stormwater discharges on receiving waters post construction including how the project will affect runoff volume, discharge rate and change in pollutants. Consider the effects of current Minnesota climate trends and anticipated changes in rainfall frequency, intensity and amount with this discussion. For projects requiring NPDES/SDS Construction Stormwater permit coverage, state the total number of acres that will be disturbed by the project and describe the stormwater pollution prevention plan (SWPPP), including specific BMPs to address soil erosion and sedimentation during and after project construction. Discuss permanent stormwater management plans, including methods of achieving volume reduction to restore or maintain the natural hydrology of the site using green infrastructure practices or other stormwater management practices. Identify any receiving waters that have construction-related water impairments or are classified as special as defined in the Construction Stormwater permit. Describe additional requirements for special and/or impaired waters.

Stormwater Management and Runoff

Stormwater and water management features described below reflect conceptual design assumptions based on currently available Project information. Final configuration, sizing, and operational details would be refined during permitting and final design and following ongoing model results. The location of stormwater ponds would be included in the Project's SDS permit.

Runoff pathways from the Scram Mine Project Area and Scram Mine Historic District are illustrated in Figure 5A, including immediate receiving waters and major downstream waterbodies. The proposed Project would not alter existing watershed boundaries or modify host watersheds.

Under the project, contact water would be collected in lined basins with discharge to surface waters. Stormwater generated within the Scram Mine Project Area would be managed using onsite containment and internal drainage controls designed to avoid offsite discharge. Runoff from surge and product stockpiles would be directed to engineered stormwater ponds designed to temporarily store runoff, promote settling of suspended solids and provide a source of plant process make-up water.

Runoff from contact water from feedstock and reject materials within the tailings basins would remain contained by the existing perimeter dikes. Process water associated with reject materials would be retained as moisture within the material matrix and managed within designated lined waste/reject materials basins located inside the WMAs. These basins are intended to provide contained storage as a source of process make-up water with no direct discharge to surface waters.

Stormwater infiltration basins would also be used to manage precipitation falling on disturbed areas within the Scram Mine Project Area and Historic District. These features would be designed to temporarily store stormwater volumes, attenuate peak flows, and promote infiltration where site conditions allow. Basin capacity and configuration would be developed to account for current Minnesota precipitation patterns and anticipated increases in rainfall intensity and frequency associated with climate change.

Stormwater runoff from the Scram Mine Project Area and Scram Mine Historic District would be managed in accordance with the MPCA SDS Permit, consistent with the Project's SWPPP. Detailed design drawings for stormwater ponds, infiltration basins, and conveyance infrastructure would be provided as part of the NPDES/SDS permitting process.

Reclamation

Stormwater basins (lined process wastewater basins and infiltration basins) and the associated drainage ditch network constructed to support Project operations are infrastructure subject to the Reclamation Plan's general infrastructure reclamation provisions. Per Reclamation Plan Section 4.1, infrastructure not retained for future reuse would be reclaimed per the Reclamation Plan and reclamation schedule, and per Section 4.2.3, disturbed areas would be reclaimed and revegetated in accordance with MR 6130.3500 and 6130.3600 once no longer needed for water management. Basin- and ditch-specific closure details (e.g., dewatering sequencing, liner disposition, sediment management) would be developed and reported through the Mine Operating Plan and Annual Mining Report process required under MR 6130.4400 and 6130.4500, consistent with the Reclamation Plan's Water Management reporting category and its progressive, adaptive reclamation approach.

- iii. Water appropriation - Describe if the project proposes to appropriate surface or groundwater (including dewatering). Describe the source, quantity, duration, use and purpose of the water use and if a DNR water appropriation permit is required. Describe any well abandonment. If connecting to an existing municipal water supply, identify the wells to be used as a water source and any effects on, or required expansion of, municipal water infrastructure. Discuss environmental effects from water appropriation, including an assessment of the water resources available for appropriation. Discuss how the proposed water use is resilient in the event of changes in total precipitation, large precipitation events, drought, increased temperatures, variable surface water flows and elevations, and longer growing seasons. Identify any measures to avoid, minimize, or mitigate environmental effects from the water appropriation. Describe contingency plans should the appropriation volume increase beyond infrastructure capacity or water supply for the project diminish in quantity or quality, such as reuse of water, connections with another water source, or emergency connections.

Water Appropriation and Use

The proposed Project would involve the appropriation of up to 715 million gallons of water per year for mine processing and up to 35 million gallons per year for dust control. All water would be sourced exclusively from the Hill Annex Pit within the Scram Mine Project Area. No water would be appropriated from public waters, and no impacts to existing watersheds or private or municipal wells are anticipated. Water consumption for the proposed Project was estimated at 262 gpm, which is lower than the estimated water inflow into the Hill Annex Pit of approximately 2,000 gpm. Project operations are not expected to noticeably lower the Hill Annex Pit water level. Water appropriation needs for the proposed Project are not expected to increase during the life of the proposed Project given the predicted increase in annual precipitation based on climate change models.

CRC submitted a Water Appropriation Permit Application (No. 2024-3521) to the DNR, which is currently under review. CRC holds riparian access rights along the leased shoreline of the Hill Annex Pit, providing the legal authority to request a Water Appropriation Permit. Minor temporary fluctuations in pit water levels are expected as a result of the proposed withdrawals and would remain within the available capacity of the pit.

All process water used for beneficiation and plant operations would be recirculated or collected for reuse within the Scram Mine Project Area. The only water leaving the processing system would be moisture retained in final products and waste/reject materials, as well as evaporation losses from beneficiation processes, which are estimated to be less than 60 gpm.

For dust suppression, appropriated water would be applied to haul roads, stockpiles, and WMAs within the Scram Mine Project Area. The estimated average monthly water use for dust control is approximately 4.1 million gallons, based on equipment manufacturer specifications and water use data from similar mining operations.

The projected water use is within the sustainable capacity of the Hill Annex Pit. While regional climate models generally predict warmer and wetter conditions, they also project periods of intermittent and prolonged drought. The proposed Project's reliance on an existing Hill Annex Pit water source and its

emphasis on water reuse and recirculation provide operational resilience under variable climate conditions. Should future conditions change due to climate variability or increased demand on water resources, CRC would evaluate whether modifications to operations or additional water appropriation authorizations would be necessary.

CRC would comply with all conditions outlined in their Water Appropriation Permit application. As part of the permit requirements, CRC would implement a monitoring program throughout the life of the mine, which is anticipated to include:

- daily precipitation monitoring during the open water season (May 1 through October 15);
- monthly water level monitoring at the Hill Annex Pit during the open water season; and
- monthly water level monitoring at the Hill Annex Fine Tailings Basin #3 during active mine operations.

iv. Surface Waters

- a) Wetlands - Describe any anticipated physical effects or alterations to wetland features such as draining, filling, permanent inundation, dredging and vegetative removal. Discuss direct and indirect environmental effects from physical modification of wetlands, including the anticipated effects that any proposed wetland alterations may have to the host watershed, taking into consideration how current Minnesota climate trends and anticipated climate change in the general location of the project may influence the effects. Identify measures to avoid (e.g., available alternatives that were considered), minimize, or mitigate environmental effects to wetlands. Discuss whether any required compensatory wetland mitigation for unavoidable wetland impacts will occur in the same minor or major watershed and identify those probable locations.

Wetlands

CRC would coordinate with the DNR to confirm the findings under the Wetland Conservation Act (WCA). CRC would pursue all applicable permits for the excavation of or discharge of dredged or fill materials into those wetlands, in compliance with state regulations.

As discussed in EAW Item 7, climate models for Itasca County and the broader Minnesota region project an increase in total annual precipitation, more frequent heavy rainfall events, and a higher likelihood of localized flooding. These trends suggest a potential rise in surface water levels. Conversely, the models also predict an increased likelihood of prolonged drought periods, which could lead to temporary declines in surface water levels.

Accordingly, the proposed Project's impacts on surface water features within and surrounding the Scram Mine Project Area are expected to reflect these broader climatic trends. Hydrologic effects may be temporary and are not expected to result in permanent alterations to surrounding water regimes or host watersheds but would need to be evaluated through the wetland assessment process.

- b) Other surface waters- Describe any anticipated physical effects or alterations to surface water features (lakes, streams, ponds, intermittent channels, county/judicial ditches) such as draining, filling, permanent inundation, dredging, diking, stream diversion, impoundment, aquatic plant removal and riparian alteration. Discuss direct and indirect environmental effects from physical modification of water features, taking into consideration how current Minnesota climate trends and anticipated climate change in the general location of the project may influence the effects. Identify measures to avoid, minimize, or mitigate environmental effects to surface water features, including in-water BMPs that are proposed to avoid or minimize turbidity/sedimentation while physically altering the water features. Discuss how the project will change the number or type of watercraft on any water body, including current and projected watercraft usage.

There are no anticipated physical effects to surface water features other than those within the Scram Mine Historic District and Scram Mine Project Area as discussed in EAW Item 12b.iv.a.

Stormwater runoff to surrounding waterbodies would be managed in accordance with the proposed SDS permit and Minn. Rules Ch. 7001.

The proposed Project would not affect the number or type of watercraft usage or passage for any of the water resources in or surrounding the Scram Mine Historic District or Scram Mine Project Area.

13. Contamination/Hazardous Materials/Wastes:

- a. Pre-project site conditions - Describe existing contamination or potential environmental hazards on or in close proximity to the project site such as soil or ground water contamination, abandoned dumps, closed landfills, existing or abandoned storage tanks, and hazardous liquid or gas pipelines. Discuss any potential environmental effects from pre-project site conditions that would be caused or exacerbated by project construction and operation. Identify measures to avoid, minimize or mitigate adverse effects from existing contamination or potential environmental hazards. Include development of a Contingency Plan or Response Action Plan.

Based on the MPCA's What's in My Neighborhood website (MPCA 2025a), the following site was identified within the Scram Mine Project Area and Scram Mine Historic District that may pose potential environmental hazards (Appendix B):

Hill Annex State Park, located within the Scram Mine Project Area and Scram Mine Historic District, is listed in the following MPCA databases:

- Site Assessment (SA0004460) – *inactive*
- Voluntary Investigation and Cleanup (Voluntary Investigation and Cleanup (VIC)/Brownfields – VP20960) – *inactive*
- Hazardous Waste (MNS000360560 – One time generator) – *active*
- Hazardous Waste (MND982642076) – *inactive*

- Hazardous Waste (MND980897771) – *inactive*
- Petroleum Remediation (LS00101321) – *inactive*
- Tanks (TS0012286) – *inactive*
- Wastewater (MN0030198) – *terminated* (12/29/2009)

Based on the available documentation, two distinct areas—*Site #1* and *Site #2*—were associated with separate polychlorinated biphenyl (PCB) releases:

- *Site #1* contained nine permanent transformers that serviced the wash plant. Soil samples HA-2 and HA-3 showed PCB concentrations of 0.36 milligrams (mg)/kilogram (kg) and 14 mg/Kg, respectively, along with elevated levels of diesel range organics (DRO). The Minnesota State Park's Division had previously reported that all on-site transformers were inspected for PCBs and other hazardous materials. Any contamination was removed by appropriate personnel.
- *Site #2* included two smaller transformers. Soil sample HA-1 contained 0.23 mg/Kg of PCBs and elevated levels of DRO.

According to the MPCA's WIMN website, the sites were referred to the Site Assessment Program on February 1, 2000, following involvement from the MPCA Tanks & Spills Program. It was subsequently closed and transferred to the MPCA Brownfields (VIC) Program on September 19, 2005.

Under the VIC Program, the MPCA reviewed the following documents:

- Phase I/II Environmental Site Assessment – reviewed August 30, 2005
- Remedial Investigation Report – reviewed August 30, 2005
- Monitoring Report – reviewed August 30, 2005
- Sampling and Analytical Project Plan – reviewed and approved September 19, 2006
- Response Action Plan (RAP) – reviewed and approved January 26, 2007

Multiple public meetings were held in 2006 and 2007, and a site visit was conducted on May 30, 2007. The site was officially designated as closed by the MPCA on May 30, 2008.

No sources of contamination or potential environmental hazards were identified on the Minnesota Department of Agriculture (MDA) What's in My Neighborhood website (MDA 2025) or the MPCA's Minnesota Groundwater Contamination Atlas (MPCA 2025b).

However, due to the known releases of PCB and DRO, and the potential for residual soil and groundwater contamination, CRC, or the DNR, would retain a qualified environmental consultant to submit a formal information request to the MPCA under Minn. Stat. 13. This request would seek additional documentation related to the historical leak sites. If the review indicates a high likelihood of encountering residual contamination during site activities, a RAP will be developed. If a RAP is required, it is recommended CRC, or the DNR, enroll in the VIC program to obtain technical support and applicable liability assurances.

Additionally, due to the potential to encounter abandoned underground storage tanks or other improperly disposed hazardous materials from previous site activities, CRC or the DNR would prepare a MPCA Construction Contingency Plan (CCP) prior to the start of construction. A CCP would be developed based on the Phase II Site Assessment currently being completed for the proposed Project.

The CCP would be completed prior to the start of construction in areas of concern identified in the Phase II Site Assessment. This plan would provide guidance for identifying, handling, managing, and disposing of hazardous or regulated materials encountered during construction or mining operations. If such materials are discovered, site personnel will be instructed to halt work immediately until the materials can be properly assessed by a qualified professional. All actions would be in accordance with applicable local, state, and federal regulations.

- b. Project related generation/storage of solid wastes - Describe solid wastes generated/stored during construction and/or operation of the project. Indicate method of disposal. Discuss potential environmental effects from solid waste handling, storage and disposal. Identify measures to avoid, minimize or mitigate adverse effects from the generation/storage of solidwaste including source reduction and recycling.

Waste Management Areas

The primary solid waste that would be generated during the operations of the Hill Annex Scram Mine include mining rejects, which are the depleted ferrous bearing materials that are separated out through the DMS plant and spiral plant processes. These reject materials would be managed within the North and South WMAs. No new tailings basins would be constructed for the proposed Project. The slopes of the WMAs would be covered with Flex Guard erosion protection to minimize stormwater runoff. If any unanticipated hazardous or regulated materials are encountered during construction or mining operations, they would be managed under a RAP or CCP in accordance with applicable local, state, and federal regulations, as discussed in EAW Item 13a.

North WMA

The North WMA on the north side of Hwy 169 would be placed on top of an existing legacy overburden stripping stockpile located east of the DMS plant, which also lies beneath the Cretaceous #4 Stockpile (Figure 2 and map series) proposed to be used as feedstock. The historic stockpile was originally placed on a glacial overburden stockpile identified in the Minnesota Natural Resource Atlas as "Stockpile: Glacial Overburden" and includes material stripped during operation of the Hill Annex Mine. This overburden stockpile would remain after the mining of the tailings basin, and the WMA would be placed on this overburden stockpile. The final size of the North WMA would be restricted to the footprint of the legacy overburden stockpile. The proposed North WMA would have sufficient capacity to accommodate the 13.2 million LT of proposed rejects from the DMS plant. The surface of the North WMA would be remediated according to the provisions of the Project's Reclamation Plan during stockpile construction to further reduce erosion and fugitive dust issues. Stormwater runoff from the North WMA would be routed to contained process water ponds adjacent to each area.

South WMA

The rejects from the spiral plant south of Hwy 169 would be transported to the South WMA via conveyor (Figure 2 and map series). An overburden stripping stockpile pad was built prior to the deposition of the overlying Hill Annex Tailings Basin #2. Tailings Basin 2 was historically constructed on a glacial overburden stockpile identified in the Minnesota Natural Resource Atlas as "Stockpile: Glacial Overburden." This overburden stockpile would remain after mining of the stockpiles and the WMA would be placed on this overburden stockpile. Reject placement would start on the higher

ground on the northeast corner of the overburden legacy material and then progress south and west. The existing perimeter dikes enclosing the Hill Annex Tailings Basins #1, #2, and #3 would be maintained during the operational life of the Scram Permit. The proposed South WMA would have sufficient capacity to accommodate the 18 million LT of proposed rejects from the spiral plant. The South WMA surface areas would be remediated in accordance with the Project's Reclamation Plan. Stormwater runoff from the South WMA would be routed to contained process water ponds adjacent to each area.

Leachable Materials

The stockpiles and tailings basins that supply feed material to the DMS plant and spiral plant are considered viable ore sources by CRC. These materials may include ore derived from the Precambrian Biwabik Iron Formation and the overlying Cretaceous Coleraine Formation lean ores, as discussed in EAW Item 11a. The chemical properties of the Biwabik Iron Formation are generally more predictable than that of the Cretaceous deposits, which are known for their heterogeneity.

The Biwabik Iron Formation are typically low in elements such as sulfur, arsenic, chlorine, cobalt, mercury, and other non-ferrous base metals, thereby reducing the risk of acid mine drainage. CRC collected samples from stockpiles and tailings basins within the Scram Mine Project Area to evaluate potential leachate constituents, including iron, magnesium, manganese, sulfate, total dissolved solids, chlorine, and trace metals. The exceedances of aluminum, iron, and manganese beyond federal secondary maximum containment levels rather than human health-based standards occur at nearly all sampled locations within the Scram Mine Project Area which is consistent with the intrinsic hematite/magnetite/iron-hydroxide mineralogy of the ore body. Exceedances of health-based standards for arsenic, beryllium, lead, thallium, and vanadium are concentrated to a limited number of locations, principally the Cretaceous Lean Ore #2 and Cretaceous #4 stockpile borings. These areas were identified as having the Scram Mine Project Area's only elevated acid-generating potential and the lowest field pH values recorded (5.89 and 5.91). This pattern is consistent with acid-generating mineralogy increasing trace-metal mobility at these specific locations, rather than an unaddressed condition throughout the Scram Mine Project Area. In lieu of additional groundwater monitoring at this time, CRC proposes construction of lined, zero-discharge basins to contain process water on-site. The data and corresponding analysis are disclosed in a Waste Characterization Report. The DNR reviewed the Waste Characterization Report and concluded that the data does not indicate existing elevated concentrations of concern.

Any risks associated with leachable materials would be addressed and managed in accordance with the Project's SDS Permit.

Process Additives

Additives used in the mining process include ferrosilicon and a flocculent used in the thickener. Ferrosilicon is a corrosion-resistant metal powder composed solely of iron and silicon. It is a non-reactive, non-toxic material commonly used to control density during media separation. A small quantity of ferrosilicon may exit the plant at an estimated rate of 100 grams per ton of process material. Of this loss, approximately 20 percent by weight would be retained in the final product, and the remaining 80 percent would be contained in the reject material. Over time, ferrosilicon would corrode, producing iron oxide and silica as its final degradation products.

The flocculent proposed for use, HyperFloc 204 is supplied by HyChem, and is consistent with additives commonly employed in thickener operations at other taconite processing facilities throughout Minnesota's Iron Range.

Safety Data Sheets for the two additives are provided in Appendix C.

State Disposal System (SDS) Permit

CRC's coordination with the MPCA regarding an SDS Permit application is ongoing. This permit would govern the regulation of wastewater discharges to land. Process water from CRC's plants would be recovered and reused through a closed-loop recirculation system. A portion of the process water would remain as residual moisture in the rejects and waste materials placed within the WMAs. These areas would be contoured and compacted to support future land use and to direct surface water runoff toward designated containment areas. No direct discharge of process water from the plants to land or surface waters is proposed under the proposed Project.

- c. Project related use/storage of hazardous materials - Describe chemicals/hazardous materials used/stored during construction and/or operation of the project including method of storage. Indicate the number, location and size of any new above or below ground tanks to store petroleum or other materials. Indicate the number, location, size and age of existing tanks on the property that the project will use. Discuss potential environmental effects from accidental spill or release of hazardous materials. Identify measures to avoid, minimize or mitigate adverse effects from the use/storage of chemicals/hazardous materials including source reduction and recycling. Include development of a spill prevention plan.

Fuels, Oils, and Lubricants

Fuels, oils, lubricants, and other hazardous or regulated materials used in heavy equipment would be present onsite during the deconstruction phase of the historic structures and buildings, and the construction, and operation phases of the scam mine. Small portable storage tanks and portable generators may also be used during the construction and operation phases. All such equipment would be staged indoors or in secondary containment in designated protected areas.

If required, a Spill Prevention, Control, and Countermeasure (SPCC) Plan would be developed to address the accidental release of hazardous materials or petroleum products. The SPCC would be developed in accordance with applicable state and federal regulatory requirements, as outlined in 40 CFR 112, Minn. Rules 7151, and Minn. Stat. 115E.

- d. Project related generation/storage of hazardous wastes - Describe hazardous wastes generated/stored during construction and/or operation of the project. Indicate method of disposal. Discuss potential environmental effects from hazardous waste handling, storage, and disposal. Identify measures to avoid, minimize or mitigate adverse effects from the generation/storage of hazardous waste including source reduction and recycling.

Typical construction-related wastes are anticipated during the deconstruction of the historic structures and buildings and Project construction and operation. The presence of hazardous materials

and petroleum products would be limited and primarily associated with fuels and oils used in heavy equipment used during deconstruction, construction, and operation phases. No bulk storage or disposal of hazardous wastes or petroleum products on-site is anticipated. However, if it is determined that bulk storage or disposal of hazardous wastes or petroleum products on-site is required, appropriate local, state and federal regulatory requirements would be followed.

Although spills of hazardous materials are uncommon, any reportable quantity spills would be promptly reported to the DNR, MPCA, and the Minnesota Duty Officer. In such cases, the contractor would immediately initiate cleanup procedures, ensuring compliance with applicable environmental regulations and minimizing potential impacts to soil, groundwater, or surface waters.

14. Fish, wildlife, plant communities, and sensitive ecological resources (rare features):

- a. Describe fish and wildlife resources as well as habitats and vegetation on or in near the site.

The Ecological Classification System (ECS) developed by the DNR and U.S. Forest Service, provides a framework for ecological mapping and landscape classification. According to the ECS, the Scram Mine Historic District and the Scram Mine Project Area are located within the Laurentian Mixed Forest Province, specifically in the Northern Superior Uplands Section and the Nashwauk Uplands Subsection.

The Laurentian Mixed Forest Province is characterized by broad areas of conifer forest, mixed hardwood and conifer forests, and conifer bogs and swamps (DNR 2025e). The Northern Superior Uplands Section aligns with the Canadian Shield in Minnesota and is distinguished by its abundance of lakes and glacially scoured bedrock. Soils in this section are typically thin and discontinuous, composed of coarse loamy till. Upland vegetation is highly uniform, dominated by fire-dependent forests and woodlands with peatlands and wet forests present as inclusions in low-lying areas within the broader upland forest areas. Within the Nashwauk Uplands Subsection, pre-settlement vegetation was primarily comprised of white pine (*Pinus strobus*), red pine (*Pinus resinosa*), balsam fir (*Abies balsamea*), white spruce (*Picea glauca*), and aspen (*Populus* spp.)-birch (*Betula* spp.) and is currently represented by a mix of mesic hardwood and fire-dependent forests.

Fauna

The Scram Mine Project Area and Scram Mine Historic District fall within the DNR Nongame Wildlife – Northeast Region (DNR 2025f), which supports a diverse range of wildlife species. These may include:

- Amphibians and reptiles: frogs, toads, salamanders, turtles, et cetera (etc.)
- Migratory water birds: geese, ducks, common loon (*Gavia immer*), etc.
- Upland birds: woodpeckers, warblers, thrushes, owls, hawks (buteos and accipiters), bald eagles (*Haliaeetus leucocephalus*), spruce grouse (*Canachites canadensis*), osprey (*Pandion haliaetus*), etc.
- Mammals: raccoons (*Procyon lotor*), rabbits, bats, squirrels, mice, white-tailed deer (*Odocoileus virginianus*), etc.

No USFWS-administered properties, DNR Wildlife Management Areas, USFWS Rusty Patched Bumble Bee High Potential Zones, Waterfowl Production Areas, DNR native mussel areas, or National

Audubon Society Important Bird Areas are located within the Scram Mine Historic District, Scram Mine Project Area, or within one mile of either (Figure 7). A one-mile buffer of the Scram Mine Project Area was used to identify records of sensitive ecological resources and rare species that may be impacted by the proposed Project. The one-mile buffer is the standard review area used by the DNR for Natural Heritage Inventory System reviews.

Upper Panasa Lake and Lower Panasa Lake are stocked with walleye (DNR 2026c). Other fish known to Upper Panasa include black bullhead (*Ameriurus melas*), yellow bullhead (*Ameriurus natalis*), brown bullhead (*Ameiurus nebulosus*), golden shiner (*Notemigonus crysoleucas*), northern pike (*Esox lucius*), bluegill (*Lepomis machrochirus*), white sucker (*Catostomus commersonii*), bigmouth buffalo (*Ictiobus cyprinellus*), blacknose shiner (*Notropis heterolepis*), fathead minnow (*Pimephales promelas*), tadpole madtom (*Noturus gyrinus*), and yellow perch (*Perca flavescens*).

Other fish species known to Lower Panasa Lake include yellow and brown bullhead, black crappie (*Pomoxis nigromaculatus*), bluegill, bowfin (*Amia calva*), largemouth bass (*Micropterus salmoides*), northern pike, pumpkinseed (*Lepomis gibbosus*), rock bass (*Ambloplites rupestris*), shorthead redhorse (*Moxostoma macrolepidotum*), silver redhorse (*Moxostoma anisurum*), banded killifish (*Fundulus diaphanus*), Iowa darter (*Etheostoma exile*), johnny darter (*Etheostoma nigrum*), central mudminnow (*Umbra limi*), tadpole madtom, white sucker, and yellow perch (DNR 2026c).

Fish species known to occur in Swan Lake include black crappie, bluegill, bowfin, brown bullhead, common shiner (*Luxilus cornutus*), largemouth bass, northern pike, pumpkinseed, rock bass, shorthead redhorse, silver redhorse, smallmouth bass (*Micropterus dolomieu*), tullibee (*Coregonus artedii*), walleye, white sucker, yellow bullhead, and yellow perch (DNR 2025c). Fish known to occur in Snowball Lake include black crappie, bluegill, bowfin, hybrid sunfish, largemouth bass, northern pike, pumpkinseed, rock bass, walleye, white sucker, yellow bullhead, and yellow perch (DNR 2025c). Additionally, there are no trout fishing streams or lakes within the Scram Mine Historic District, Scram Mine Project Area, or within one mile of the Scram Mine Project Area (DNR 2025g).

Flora

In Itasca County, where the Scram Mine Project Area and Scram Mine Historic District are located, a total of 399 native plant species have been recorded (DNR 2025h). Native plant species that may occur within the Scram Mine Historic District or Scram Mine Project Area include:

- Ferns: cinnamon fern (*Osmunda cinnamomea*).
- Flowering plants: alumroot (*Heuchera richardsonii*), common boneset (*Eupatorium perfoliatum*), false Solomon's seal (*Maianthemum racemosum* subsp. *racemosum*), etc.
- Grasses, sedges, and rushes: Canada bluejoint (*Calamagrostis canadensis*), fowl manna grass (*Glyceria striata*), graceful sedge (*Carex gracillima*), Pennsylvania sedge (*Carex pensylvanica*), etc.
- Trees and shrubs: American basswood (*Tilia americana*), box elder (*Acer negundo*), chokecherry (*Prunus virginiana*), downy arrowwood (*Viburnum rafinesquianum*), etc.
- Vines: climbing bittersweet (*Celastrus scandens*), woodbine (*Parthenocissus inserta*), and wild grape (*Vitis riparia*), etc.

In addition to native plant species, noxious weeds or prohibited exotic plant species may occur within

the Scram Mine Historic District or Scram Mine Project Area. Noxious plants are regulated under the MDA and DNR. A discussion of invasive species management is provided in EAW Items 14c and 14.d.

- b. Describe rare features such as state-listed (endangered, threatened or special concern) species, native plant communities, Minnesota Biological Survey Sites of Biodiversity Significance, and other sensitive ecological resources on or within close proximity to the site. Provide the license agreement number (LA-__) and/or correspondence number (MCE 2022-00465) from which the data were obtained and attach the Natural Heritage Review letter from the DNR. Indicate if any additional habitat or species survey work has been conducted within the site and describe the results.

State-Listed Species and Ecological Communities

The Minnesota Biological Survey (MBS), administered by the DNR, systematically collects, interprets, monitors and delivers data on plant and animal distributions, as well as the ecology of DNR Native Plant Communities (NPCs) and functional landscapes. MBS sites of biodiversity significance are ranked based on their ecological value:

- **Outstanding:** Contains the best occurrences of the rarest species, the most outstanding examples of the rarest native plant communities, or the largest, most ecologically intact or functional landscapes.
- **High:** Contains very good quality occurrences of the rarest species, high-quality examples of rare native plant communities, or important functional landscapes.
- **Moderate:** Contains occurrences of rare species, moderately disturbed native plant communities, or landscapes with strong potential for ecological recovery.
- **Below:** Lacks rare species or natural features or does not meet MBS criteria for higher rankings.

There are eight NPCs within one mile of the Scram Mine Historic District (Table 17), but one are located within the Scram Mine Project Area. There are multiple NPCs within one mile of the Scram Mine Project Area and two are considered state imperiled (s2). The two state imperiled NPCs are Northern Mesic Mixed Forests (Figure 7).

Table 17: Native Plant Communities (NPCs) within One Mile of the Scram Mine Historic District

NPC Community Type	Number of Communities	Within Scram Mine Project Area (Yes/No)
Northern Mesic Hardwood Forest	1	No
Northern Mixed Cattail Marsh	1	No
Northern Rich Alder Swamp	2	No
Northern Wet Ash Swamp	1	No

NPC Community Type	Number of Communities	Within Scram Mine Project Area (Yes/No)
Northern Wet-Mesic Boreal Hardwood-Conifer Forest	2	No
Northern Wet-Mesic Hardwood Forest	1	No

There were no mapped MBS sites of biodiversity significance within the Scram Mine Historic District and Scram Mine Project Area based on the Minnesota Conservation Explorer (MCE) Natural Heritage Report (Appendix D). However, an MBS site of moderate biodiversity significance, Swan Lake (Site #131), was mapped immediately adjacent east of the Scram Mine Project Area (Figure 7). The Swan Lake MBS site is approximately 0.9 miles east of the Scram Mine Historic District.

Three DNR Other Forest Land, Miscellaneous management units, totaling 349.5 acres, were mapped within the Scram Mine Historic District (Figure 7). There were no old growth stands, Scientific and Natural Areas, prairies identified under the Minnesota Prairie Conservation Plan, or lakes of biological significance within one mile of the Scram Mine Historic District or Scram Mine Project Area.

Based on the DNR Natural Heritage Letter (MCE-2025-00675), no records of state-listed species were mapped within the Scram Mine Historic District. Multiple records of state-listed species were within one mile of the Scram Mine Historic District. Of these, many were within the Scram Mine Project Area (Table 18) (Appendix D). The species include the little brown bat (*Myotis lucifugus*), pale moonwort (*Botrychium pallidum*), least moonwort (*Botrychium simplex*), prairie moonwort (*Botrychium campestre* var. *campestre*), and St. Lawrence grapefern (*Sceptridium rugulosum*), all species of special concern, and the state threatened Case's ladies'-tresses (*Spiranthes casei*). The pale moonwort, least moonwort, prairie moonwort, and Case's ladies'-tresses are known to occur in sediment basins and abandoned mine sites, such as those within the Scram Mine Project Area.

Additionally, the DNR indicated that peregrine falcons (*Falco peregrinus*) have been known to nest in the former Hill Annex Mine State Park and there were reports of a great blue heron (*Ardea herodias*) rookery on an island in the Hill Annex Pit (pers. comm.). Locations of the peregrine falcon nest and great blue heron rookery were not available. Under Minnesota Statute 84.0895, Protection of Threatened and Endangered Species, no species designated as state-endangered or state-threatened may be taken without a permit from DNR. Species with special concern designation are not protected under Minnesota Statute.

A formal Natural Heritage Report was received for the proposed Project on October 29, 2025 (Appendix D).

Table 18: State-Listed Species within One-Mile of the Scram Mine Historic District or within the Scram Mine Project Area

Common Name	Scientific Name	Preferred Habitat	Status
Little Brown Bat	<i>Myotis lucifugus</i>	During summer, this species is associated with forested habitats but will use human structures such as bridges, buildings, and attics. In the winter, they typically hibernate in underground caves, cellars, tunnels, and other underground structures (DNR 2018a).	Species of special concern
Peregrine Falcon	<i>Falco peregrinus</i>	Occurs in a variety of open habitats including lake edges and mudflats. Will nest on cliffs or tall man-made structures such as skyscrapers (White et al. 2002).	Species of special concern
Pale Moonwort	<i>Botrychium pallidum</i>	Occurs in open fields, dry sand and gravel ridges, roadsides to wet depressions, marshy lakeshores, tailings basins, second growth forests, and shaded moist mixed deciduous-hardwood forests.	Species of special concern
Least Moonwort	<i>Botrychium simplex</i>	Primarily occurs in open sites, including prairies, wetlands, and abandoned mine sites.	Species of special concern
Prairie Moonwort	<i>Botrychium campestre</i> var. <i>campestre</i>	Primarily a prairie species that occurs on coarse, well-drained glacial till or thin loess over bedrock in plant communities that include dry prairies, dry hill prairies, dry bedrock bluff prairies, and sand-gravel prairies. Also, known to occur in sediment basins of iron ore and taconite processing plants.	Species of special concern
St. Lawrence Grapefern	<i>Sceptridium rugulosum</i>	Occurs in low and moist habitats in brushy or grassy areas and in open forested areas.	Species of special concern
Case's Ladies' Tresses	<i>Spiranthes casei</i> var. <i>casei</i>	Known to occur in drained sediment basins that are	Threatened

Common Name	Scientific Name	Preferred Habitat	Status
		hundreds of acres in size in Itasca and St. Louis counties.	

Federally Listed Species

The USFWS Information for Planning and Consultation (IPaC) tool identifies federally threatened, endangered, proposed for listing, and candidate species that may occur within an area. According to IPaC, the following species may occur within the Scram Mine Historic District or Scram Mine Project Area or surrounding region:

- **Northern long-eared bat** (*Myotis septentrionalis*) – *Endangered*, threatened by white-nose syndrome, habitat loss, and human disturbance (DNR 2018b). Suitable summer habitat includes forested areas, especially deciduous forest where they roost in cavities or under loose bark of live or dead trees, including maple, aspen, and oak. Northern long-eared bats roost in live or dead trees greater than or equal to 3 inches in diameter at breast height that have exfoliating bark, cracks, crevices, or cavities. They are also known to occasionally roost in human-made structures such as buildings, barns, and bridges. In the winter they typically hibernate in underground caves and mines.
- **Canada lynx** (*Lynx canadensis*) – *Threatened*, vulnerable to accidental trapping, vehicle and train collisions, shooting, and habitat fragmentation (DNR 2018c). Suitable habitat includes large tracts of dense boreal forests with thick understory for hunting and denning. They occur in areas where snowshoe hare (*Lepus americanus*), their primary prey, are present. There are multiple records of Canada lynx in Itasca County, some of these records are in the vicinity of the Scram Mine Project Area. The nearest USFWS designated critical habitat is more than 39 miles from the Scram Mine Project Area (USFWS 2022).
- **Gray wolf** (*Canis lupus*) – *Threatened*, impacted by human conflict, habitat degradation, and prey reduction (DNR 2013). Suitable habitat includes large tracts of forested areas generally in areas with low human activities. A wolf pack territory was mapped in the vicinity of the Scram Mine Project Area (DNR 2023, DNR 2022). The territory of this pack appears to overlap the southern portion of the Scram Mine Project Area. The nearest USFWS designated critical habitat is more than 32 miles from the Scram Mine Project Area (USFWS 2022).
- **Monarch butterfly** (*Danaus plexippus*) – *Proposed Threatened*, affected by habitat loss, climate change, and pesticide exposure (USFWS 2025). Suitable habitats include fields, prairies, parks, and gardens with abundant milkweed (*Asclepias* spp.) and nectar-producing flowers.
- **Suckley's Cuckoo Bumble Bee** (*Bombus suckleyi*) – *Proposed Endangered*, a brood parasitic species, that lays eggs in the nests of other social bumble bee species in the genus *Bombus* (USFWS 2023). They occur in meadows, grasslands, and forest edges rich in flowering plants for foraging; grasslands, agricultural lands, and forests for nesting; and, sandy, well-drained, or loose soils in shaded areas near trees for overwintering. Is believed to be extirpated from Minnesota.

The Scram Mine Historic District and Scram Mine Project Area do not overlap with any USFWS (2022) designated critical habitats for federally listed species. However, there is potentially suitable monarch butterfly, northern long-eared bat, Canada lynx, and gray wolf habitat within the Scram Mine Historic District and Scram Mine Project Area.

The bald eagle (*Haliaeetus leucocephalus*) is also noted as species of interest due to their protection under the Bald and Golden Eagle Protection Act. Bald eagles may be sensitive to human disturbance, particularly during nesting periods, which can result in nest abandonment or fledgling mortality (USFWS 2007). CRC would conduct bald eagle nest surveys of construction areas and a 660-foot buffer of construction areas prior to initiating initial construction activities as needed. If a bald eagle nest occurs within the Scram Mine Historic District, Scram Mine Project Area, or within 660 feet of either boundary, a USFWS Eagle Disturbance Take or Nest Take permit may be required. An eagle nest take permit may also be required from the DNR.

- c. Discuss how the identified fish, wildlife, plant communities, rare features and ecosystems may be affected by the project including how current Minnesota climate trends and anticipated climate change in the general location of the project may influence the effects. Include a discussion on introduction and spread of invasive species from the project construction and operation. Separately discuss effects to known threatened and endangered species.

As outlined in the Climate Adaptation and Resilience section (EAW Item 7), changes to the regional climate may result in increased flooding or periods of prolonged drought. Based on the existing hydrology features and land use, these changes are not anticipated to substantially impact the existing habitats within the Scram Mine Historic District or Scram Mine Project Area.

Construction Impacts on Fisheries

Construction-related impacts to local fisheries are not expected. Public access to Upper and Lower Panasa Lakes is anticipated to remain open and available to anglers and recreational users during Project activities. Existing public water access facilities are not proposed to be closed or removed as part of the proposed project. Any temporary safety-related restrictions would be limited in duration and extent and would be communicated to the public in coordination with the DNR in advance.

Construction Impacts on Vegetation and Wildlife

Pre-mining site preparation would involve the clearing of trees, brush, and vegetation from stockpiles and tailings basins as needed. Vegetation removal would result in the loss of habitat for wildlife currently occupying the area. These habitats would eventually be restored once the site is reclaimed, some wildlife species may return after the habitats are restored.

Construction-related disturbances including noise, equipment activity, habitat loss, and human presence may lead to the displacement of wildlife. The extent of displacement would likely vary by species. Smaller, less mobile species such as small mammals, reptiles, and amphibians may be more vulnerable due to their limited ability to relocate. Large mammals, bats, and birds would be able to vacate the immediate area of construction. Aquatic species may be impacted if the surface water resources within the Scram Mine Historic District or Scram Mine Project Area are impacted during Project construction or operation. However, because the Scram Mine Historic District and Scram Mine

Project Area are surrounded by similar habitats and construction would be phased over five years, many wildlife species are expected to relocate without experiencing population-level impacts.

Of particular concern is the northern long-eared bat, which uses forested areas near water for summer roosting (DNR 2018b). Roosting sites may include trees with loose bark, broken limbs, cavities, or cracks, all of which could be affected by tree clearing activities. As such, the species may experience localized impacts during construction. To minimize potential impacts, CRC would only harvest trees outside the active roosting season, which typically occurs between April 16 and October 31 (USFWS 2024).

Also, the state threatened Case's ladies' tresses and its habitat may be directly impacted by Project construction and operation.

Invasive Species

Invasive species are non-native organisms that can cause ecological or economic harm and that pose a risk of establishment in disturbed environments. These species often spread rapidly along open corridors and can form dense monocultures, reducing native plant diversity and ecosystem resilience.

According to EDDMaps invasive species records, there were multiple records of seven invasive plant species occurrences within one mile of the Scram Mine Project Area. The seven invasive plant species include creeping bellflower (*Campanula rapunculoides*), common tansy (*Tanacetum vulgare*), common yarrow (*Achillea millefolium*), yellow hawkweed (*Pilosella caespitosa*), red clover (*Trifolium pratense*), birdsfoot trefoil (*Lotus corniculatus*), and spotted knapweed (*Centaurea stoebe*) (EDDMaps 2026). The proposed Project would cause land disturbance through vegetation clearing and equipment movement, increasing the potential for invasive plant species to spread. To minimize the potential for invasive plant species to spread, CRC would manage site restoration per the Project's Reclamation Plan during Project construction and operation, which would include methods such as implementing spot-spraying or broadcast spraying in areas where invasive plant species are observed, as appropriate for the plant species and scale. Herbicide treatments would be performed by qualified personnel.

Operational Impacts

Similar to construction-related impacts, operational activities may result in the displacement of wildlife due to ongoing noise, vibration, and human presence. While these disturbances may affect local wildlife behavior and habitat use, long-term population-level effects are not anticipated for most wildlife species due to the availability of similar habitat types in the surrounding region. Over time, local wildlife that remain within or near the Scram Mine Historic District and Scram Mine Project Area would likely be habituated to the change in noise levels and the presence of humans.

- d. Identify measures that will be taken to avoid, minimize, or mitigate the adverse effects to fish, wildlife, plant communities, ecosystems, and sensitive ecological resources.

To avoid, minimize, or mitigate potential adverse effects to fish, wildlife, plant communities, ecosystems, and sensitive ecological resources, CRC proposes to implement the following measures:

Reclamation and Vegetation Restoration

- Implementing a standard reclamation plan designed to achieve 90 percent vegetative cover within three years, promoting sustained coverage throughout and beyond the life of the proposed Project. Vegetation would be established in accordance with Minn. Rules 6130.3500 and 6130.3600, using suitable grass and forb seed mixes appropriate for northern Minnesota.
- Standard reclamation methods would be used in areas that are prone to erosion that require short-term stabilization.
- A modified forestry reclamation approach prioritizing pioneer tree species such as jack pine, paper birch, and aspen with an understory of suitable shade-tolerant species could also be used, with appropriate research permits to restore forest succession to disturbed areas.
- Absent implementation of the modified forestry reclamation approach, reclaimed surfaces are expected to develop woody cover over time through natural succession and seed dispersal from adjacent forest stands, including the mesic hardwood NPCs identified in the vicinity of the proposed Project (EAW Item 14c). Should CRC pursue the modified forestry reclamation research option, species and understory selection would be evaluated for consistency with these surrounding reference NPCs including consideration of mesic hardwood species such as sugar maple (*Acer saccharum*), American basswood (*Tilia americana*), red maple (*Acer rubrum*), and yellow birch (*Betula alleghaniensis*) in microsites where soil development supports them, rather than relying solely on the droughty-site pioneer species above.
- Areas no longer needed for active mining would be seeded and mulched on stockpiles, tailings basin areas, waste management areas to stabilize soils and reduce erosion. Other options for sale of timber have not been considered since the entirety of the material would be needed for mulch.

Wetland Protection

- Reclamation activities would either follow the standard or research-option approach and would not drain, fill, excavate, or otherwise hydrologically alter the 6.3 acres of delineated natural wetlands within the Scram Mine Project Area (see Table 15 in EAW Item 12a).
- A vegetated buffer would be maintained or re-established along natural wetland margins using native, wetland-edge-compatible species (e.g., red-osier dogwood [*Cornus sericea*], speckled alder [*Alnus incana*], native sedges, etc.).
- Erosion and sediment control BMPs established under the Project's SDS permit would remain in place through the reclamation and closure phases in areas adjacent to natural wetlands.

Invasive Species Management

- CRC would monitor plant biodiversity and vegetative cover at regular intervals to detect early signs of encroachment from invasive or undesirable plant species.
- Upon detection, invasive or undesirable plant species would be addressed through hand-pulling or targeted herbicide application.
- Site contractors would monitor and control vehicle access, as unauthorized vehicles can contribute to the spread of invasive species and hinder revegetation efforts.

MBS Sites of Biodiversity Significance Protection

- Soil and erosion control BMPs would be implemented along the eastern Scram Mine Project

Area to minimize or avoid impacts to the Swan Lake MBS site.

- Invasive species management practices would be used to minimize or avoid the potential spread of invasive plant species to the Swan Lake MBS site.

State-Listed Plant Species Protection

- Due to the potential for the proposed Project to impact Case's ladies-tresses, a presence/probable absence survey and habitat assessment would be completed by a qualified surveyor within the Scram Mine Project Area prior to Project construction. If suitable habitat exists within the activity impact area, a rare plant survey would be conducted prior to any project activities. Surveys would be conducted in accordance with the Natural Heritage Report (Appendix D). The results of the presence/probable absence survey and habitat assessment would be used to determine if additional permitting is warranted. CRC would coordinate with the DNR in the event of unavoidable impacts to state-listed species to determine next steps.

Federally Listed Species Protection

- Although the proposed Project may affect potential habitat for the federally threatened gray wolf and Canada lynx, proposed endangered Suckley's cuckoo bumble bee, and the proposed threatened monarch butterfly, it does not have a federal nexus (e.g., federal funding or permitting), and formal consultation with USFWS is not required.

Eagle Nest Protection

- CRC would follow standards and general recommendations listed in the USFWS guidelines (USFWS, no date). If a bald eagle nest occurs within the Scram Mine Historic District, Scram Mine Project Area, or within 660 feet of either boundary, CRC would coordinate with the USFWS and DNR to obtain necessary permits and confirm avoidance measures.

Northern Long-Eared Bat Protection

- Although the proposed Project may affect potential habitat for the federally endangered northern long-eared bat, it does not have a federal nexus (e.g., federal funding or permitting), and formal consultation with USFWS is not required.
- There are no known hibernaculum or maternity roost trees within or near the Scram Mine Historic District or Scram Mine Project Area. Although there are known maternity roost trees in Itasca County, the nearest is more than 11 miles northwest of the Scram Mine Historic District and Scram Mine Project Area (DNR and USFWS 2021).
- To minimize potential impacts to northern long-eared bats, the Project proposers would conduct tree removals and building demolitions outside the species active season (i.e., the active period is from April 15 to October 31) (USFWS 2024).

Little Brown Bat Protection

- The proposed Project may affect potential habitat for the little brown bat, a state species of special concern.
- There are no known hibernacula within or near the Scram Mine Historic District or Scram Mine

Project Area.

- To minimize potential impacts to little brown bats, the Project proposers would conduct building demolitions outside the active season for bat species (i.e., April 15 to October 31).

Aquatic and Riparian Species

Stormwater runoff from disturbed areas would be managed in compliance with the Project's SDS Permit, to protect nearby waterbodies that may support aquatic or riparian species. Additional details regarding stormwater management and proposed BMPs are discussed in EAW Item 12.

If a heron rookery is present within the Scram Mine Project Area, then a seasonal timing restriction of April 1 – Aug 15 should be applied within 100 m of the colony for activities that could disturb birds and leave as much intact habitat as possible in this buffer. If possible, a 200 m buffer is preferred.

15. Historic properties:

Describe any historic structures, archeological sites, and/or traditional cultural properties on or in close proximity to the site. Include: 1) historic designations, 2) known artifact areas, and 3) architectural features. Attach letter received from the State Historic Preservation Office (SHPO). Discuss any anticipated effects to historic properties during project construction and operation. Identify measures that will be taken to avoid, minimize, or mitigate adverse effects to historic properties.

A literature search identified one historic property, the Hill Annex Mine (IC-GRN-00002) within and adjacent to the Scram Mine Historic District and Scram Mine Project Area. The Hill Annex Mine (IC-GRN-00002) was listed in the NRHP in 1986. The mine was in operation between 1912 and 1979 and has statewide significance under NRHP Criteria A within the area of industry. The Hill Annex Mine's period of significance spans from 1912 to 1957. The historic district spans 640 acres which includes seven contributing buildings, four contributing structures, and one non-contributing building (Table 19) (Figure 8) (SHPO and Anderson 1986). The Hill Annex Mine NRHP nomination was prepared prior to current NRHP documentation related to identifying, evaluating, and registering historic mining properties, and therefore the nomination does not document historic mining landscape features or objects, such as the open pit mine, ore dumps, and mining equipment, as contributing or non-contributing resources, nor does it go into detail with physical descriptions of each of the contributing buildings or structures.

Table 19: Buildings and Structures within the Scram Mine Historic District or Scram Mine Project Area

Resource Name	Construction Date	Category of Property	NRHP Eligibility
Calumet Community Club	c. 1915	Building	Contributing
Frame Truck Repair Shop	c. 1919	Building	Contributing
Mine Manager's Office	c. 1930	Building	Contributing

Resource Name	Construction Date	Category of Property	NRHP Eligibility
Laboratory	c. 1930	Building	Contributing
Railroad Equipment Repair Shops	c. 1930	Building	Contributing
Quonset Repair Shop	c. 1930	Building	Contributing
Wooden Water Tower	c. 1930	Structure	Contributing
Conveyor Belt	1944	Structure	Contributing
Heavy Media Plant	c. 1953	Building	Contributing
Prep Section	c. 1953	Structure	Contributing
Tailings Basin	1957	Structure	Contributing
Truck Repair Shop	1961	Building	Non-Contributing, Non-Exant

No additional architectural history properties, located in or adjacent to the Scram Mine Historic District or Scram Mine Project Area, are listed in the NRHP, listed in the State Register of Historic Properties, or part of the State Historic Sites Network.

No reported archaeological sites have been previously identified within one mile of the Scram Mine Historic District or Scram Mine Project Area. No previous methodologically rigorous archaeological surveys have been completed within one mile of the Scram Mine Historic District or Scram Mine Project Area, except for one non-systematic walkover of the Heavy Media #2 Course Rejects Pile, which was completed in 2003. The Mitigation Plan for the Hill Annex Mine Historic District and Archaeological Review for the Hill Annex Mine Project prepared in May 2025 by 106 Group identified a moderate to high potential to encounter deeply buried pre-contact archaeological sites within portions of the Scram Mine Historic District and Scram Mine Project Area and a moderate to high potential to encounter post-contact archaeological sites related to the Scram Mine Historic District within portions of the Scram Mine Project Area (Appendix E).

The proposed Project would have permanent, direct physical effects to the Hill Annex Mine (IC-GRN-00002). The removal of all contributing buildings and structures, as well as removal of the remaining mining objects and alteration of the mining landscape would lead to a complete loss of integrity of the historic district, constituting an adverse effect. Additionally, proposed ground disturbance from the proposed Project may impact areas of archaeological potential where archaeological resources may be present. A Mitigation Plan for the Hill Annex Mine Historic District and Archaeological Review for the Hill Annex Mine Project has been prepared pursuant to an existing Programmatic Agreement between the Minnesota State Historical Society and the DNR (106 Group 2025) (Appendix E). The

Programmatic Agreement (PA) stipulates mitigation for the adverse effects to the NRHP-listed Hill Annex Mine historic district should include “assembling photographic, oral, and written evidence of the mine’s history.” This information could be made available for future research or presented to the public through “interpretative materials, signs, or programs.” Summarily, the PA stipulates inventorying existing contributing elements to the historic property and finding educational facilities and municipalities with interest in acquiring the elements for exhibitory purposes. The Mitigation Plan for the Hill Annex Mine Historic District and Archaeological Review for the Hill Annex Mine Project recommends mitigation strategies to resolve adverse effects including the preparation of a Minnesota Historic Property Record Level I documentation; preparation of a video of the history of the Hill Annex Mine or preparation of a digital mining history exhibit; and rehoming the mining equipment that remains within the historic district and the museum artifacts that were on display at the Hill Annex Mine State Park (Appendix E). Additionally, the plan recommends the preparation of an archaeological research design to outline the approach for conducting Phase I and Phase II archaeological field surveys concurrently and conducting these surveys prior to Project ground disturbance. The removal of all contributing buildings and structures would make the Hill Annex Mine no longer able to convey its historical significance, and, therefore, would no longer be eligible for listing in the NRHP.

Implementation of the mitigation actions outlined in the Mitigation Plan for the Hill Annex Mine Historic District and Archaeological Review for the Hill Annex Mine Project in accordance with the Programmatic Agreement between the Minnesota State Historical Society and the DNR would resolve adverse effects to the NRHP-listed Hill Annex Mine historic district and potential archaeological resources (Appendix E).

16. Visual:

Describe any scenic views or vistas on or near the project site. Describe any project related visuelleffects such as vapor plumes or glare from intense lights. Discuss the potential visual effects fromthe project. Identify any measures to avoid, minimize, or mitigate visual effects.

Visual and Aesthetic Impacts

There are no designated scenic views or vistas within or near the Scram Mine Historic District or Scram Mine Project Area. The proposed removal of NRHP buildings and scam mining operations would occur in a landscape that was actively mined during the early to mid-1900s and that has since undergone partial revegetation. While the removal of this vegetation during site preparation would result in noticeable visual changes, the viewshed is largely screened by surrounding forested areas and existing mined features. As a result, impacts to land cover are not expected to significantly alter the visual character of the region.

Construction Phase

Some existing structures associated with the Scram Mine Historic District would be demolished to accommodate proposed Project activities. CRC is coordinating with the Minnesota SHPO and DNR to properly inventory and document these buildings prior to removal. Replacement infrastructure would be designed to support mining operations and is expected to have a neutral effect on the visual character of the area.

During construction, visual impacts would primarily result from vegetation clearing, including the removal of trees, brush, and ground cover from stockpiles and tailings basins. To minimize the duration and extent of exposed areas, a progressive reclamation approach would be implemented. The progressive reclamation method integrates reclamation activities into the active mining schedule by planting vegetation in completed sections of stockpiles, tailings basins, and disturbed areas while mining continues elsewhere in the Scram Mine Project Area. Early establishment of grasses, shrubs, and trees would help reduce visual contrasts, stabilize soils, control dust, and promote habitat recovery, while also blending the proposed Project more effectively with the surrounding landscape during ongoing operations.

Operational Phase

The mine may be visible during proposed Project operations, but visibility would be largely impeded by existing trees. The Heavy Media Rejects #2 stockpile would be entirely mined and removed and not be visible. The final height of the South WMA would be approximately 160 feet. Tailings Basin 2 is partially visible from Highway 169 (partly blocked from view due to trees) currently and would be at the end of the proposed Project.

During operation, visual impacts may include the presence of mining equipment, material stockpiles, crushing activities, and material transport activities that could generate fugitive dust. These activities would be visible from certain vantage points within the vicinity of the Scram Mine Historic District and Scram Mine Project Area.

Currently vegetated areas would be retained to the maximum extent practicable and mine waste will be vegetated, where feasible, to conform to the existing terrain in compliance with Minnesota Rules 6130.1500 (Buffers and Barriers). These measures are intended to minimize noise, reduce fugitive dust and chemical air pollutants, minimize visual impacts associated with mining operations, and control erosion. All vegetative buffers would be installed in areas that need buffering prior to the start of operation.

CRC is currently in coordination with the MPCA to obtain an Air Permit per Minnesota Rules 7011.0150, 6130.4300, and 6130.3700. The proposed Project is not expected to produce vapor plumes or glare, and lighting would be limited to what is necessary for safety and operations. All lighting would be downward directed to reduce light spill and minimize nighttime visual impacts. For additional information regarding fugitive dust see EAW Item 17c.

17. Air:

- a. Stationary source emissions - Describe the type, sources, quantities and compositions of any emissions from stationary sources such as boilers or exhaust stacks. Include any hazardous air pollutants, criteria pollutants. Discuss effects to air quality including any sensitive receptors, human health or applicable regulatory criteria. Include a discussion of any methods used assess the project's effect on air quality and the results of that assessment. Identify pollution control equipment and other measures that will be taken to avoid, minimize, or mitigate adverse effects from stationary source emissions.

All stationary equipment including pumps, conveyors, screens, crushers, feeders, and stackers within

the Scram Mine Project Area and Scram Mine Historic District would be powered by on-site electrical utilities. As a result, emissions from stationary sources are not anticipated, and the operations are not expected to release hazardous air pollutants, criteria pollutants, or greenhouse gases. Additional discussion regarding particulate matter and dust from stationary sources is provided in EAW Item 17c.

- b. Vehicle emissions - Describe the effect of the project's traffic generation on air emissions. Discuss the project's vehicle-related emissions effect on air quality. Identify measures (e.g. traffic operational improvements, diesel idling minimization plan) that will be taken to minimize or mitigate vehicle-related emissions.

Vehicles would be required during construction and operation phases to support proposed Project activities, including personnel transport and equipment operation. The use of diesel-powered equipment and vehicles would result in the release of hazardous air pollutants and criteria pollutants. However, these emissions are expected to be minimal and are not anticipated to significantly impact air quality (see EAW Item 18). During operations, vehicle use for material transport would be minimized through the implementation of conveyor belts or rail systems.

- c. Dust and odors - Describe sources, characteristics, duration, quantities, and intensity of dust and odors generated during project construction and operation. (Fugitive dust may be discussed under item 17a). Discuss the effect of dust and odors in the vicinity of the project including nearby sensitive receptors and quality of life. Identify measures that will be taken to minimize or mitigate the effects of dust and odors.

Fugitive dust refers to airborne particles generated from the mechanical disturbance of granular materials, commonly occurring during construction and mining activities, and comprised of airborne minerals (i.e., oxides of silicon, aluminum, calcium, and iron) released from soils. Under the Clean Air Act (42 U.S.C. §7401 et seq. 1970) and applicable air quality standards, fugitive dust is classified as particulate matter (PM) and regulated at diameters of 10 microns (PM_{10}) and 2.5 microns ($PM_{2.5}$) or smaller. Fugitive dust emissions are of concern due to their ability to penetrate deep into the respiratory system and their potential to affect both human health and environmental receptors (USEPA 2022).

Sensitive receptors in the vicinity of the proposed Project include mine workers, members of the public using nearby lands or roadways, and environmental receptors such as surface waters, wetlands, and surrounding terrestrial vegetation. If not adequately controlled, fugitive dust could be transported off-site and deposited onto surface waters, potentially contributing to minor sediment inputs or localized increases in turbidity. Dust deposition on vegetation may also temporarily affect plant surfaces. These potential effects are expected to be localized and short-term and would be minimized through implementation of BMPs.

CRC's Potential to Emit Calculations indicate fugitive dust emissions are estimated at a total of 115 tons per year of PM, with 52 tons per year of PM_{10} , and 8 tons per year of $PM_{2.5}$ emissions. To further reduce potential impacts to nearby receptors, active mining areas would be limited in size and duration, thereby reducing the area and time over which dust could be generated. CRC would supply contracted crushing operations with adequate water for dust suppression during loading and crushing activities. Crushed material would be kept moist to minimize dust generation during transfer from the

crusher to trucks or conveyors and subsequently to the surge pile. Stationary equipment such as conveyors and screens would be routinely cleaned to prevent buildup of dust and reduce the potential release of airborne dust particles. Water would also be applied to stockpiles and tailings basins as needed to prevent drying and wind erosion.

Fugitive dust emissions from the waste management areas would be controlled through moisture management, minimization of exposed surfaces, and surface stabilization measures. Reject materials would be placed with sufficient residual moisture to limit dust generation, and water would be applied as needed during non-freezing conditions to maintain surface moisture. Active deposition areas would be limited to reduce exposed surface area, while inactive areas would be stabilized using mulch, tackifiers, or similar dust suppressants. Seasonal measures, such as maintaining snow cover or applying straw mulch, and grading surfaces to reduce erosion potential would further minimize dust emissions.

During winter months, when traditional wetting methods to control fugitive dust cannot be employed, CRC would minimize fugitive dust by covering exposed soil with mulch or employing wind barriers (i.e., vegetated wind breaks and sediment control logs) to reduce air movement around soil stockpiles. They would also leave snow cover undisturbed. Stationary equipment would be regularly swept to prevent the buildup of dust.

These controls are expected to significantly reduce airborne particulate matter and prevent measurable impacts to nearby surface waters or other environmental receptors. In addition, mine traffic on paved and public roads would be minimized to reduce re-entrained dust and material track-out. Where practicable, material transfer points would be located indoors, providing physical containment of dust-generating activities and further limiting the potential for fugitive dust to migrate beyond the operational area.

18. Greenhouse Gas (GHG) Emissions/Carbon Footprint

- a. GHG Quantification: For all proposed projects, provide quantification and discussion of project GHG emissions. Include additional rows in the tables as necessary to provide project-specific emission sources. Describe the methods used to quantify emissions. If calculation methods are not readily available to quantify GHG emissions for a source, describe the process used to come to that conclusion and any GHG emission sources not included in the total calculation.

The proposed project would introduce GHG emission sources during operations and construction.

Construction

During construction, temporary increases in emissions are expected due to equipment use for vegetation removal and other Project-related preparation activities, which would occur over approximately one year (12 months). The magnitude of these emissions would vary depending on weather conditions and the specific construction task. A limited number of passenger vehicles would be used for worker commuting, but associated emissions are considered negligible compared to those from construction equipment. Trees that are removed would be chipped and mulched and used for

erosion control and stockpile cover in erodible areas not currently being mined, including stockpiles, tailings basin areas, waste management areas, and the majority of the site during winter months when no activity is planned. Other options for sale of timber were not considered since the entirety of the material would be needed for mulch. Minor emissions (i.e., CO₂) would be released from the decomposition of wood chips and mulch and would occur over multiple years, which would allow revegetated areas to establish and subsequently capture released CO₂.

Operation

During operations, emissions could result from mining activities such as crushing, material transport, stockpiling, and grading. Mining operations are planned to run continuously—24 hours per day, seven days a week—with scheduled maintenance occurring one day every two weeks. Mining operations are expected to take place eight months per year over a 15-year period.

The installed capacity of the plants including the load-out is 9.5 megawatts. The proposed Project plants would operate for 8 months per year and typically at 80 percent of the installed capacity. The utilization is about 85 percent, resulting in an annual power consumption of 40 million kilowatt hours per year.

It is estimated that two unit trains would operate per day, each consisting of 125 rail cars and three locomotives. Rail cars are estimated to be 42 feet long, locomotives are estimated to be 75 feet long, resulting in an estimated overall length of 5,475 feet per train unit.

Estimated Project emissions are provided in Appendix F. These estimates were developed using typical counts of diesel-powered construction equipment, rail units, projected operating hours, estimated vehicle and train miles traveled, EPA Tier II emission factors, and plant energy usage. The assessment is preliminary and reflects the best available information available at the time of this EAW.

b. GHG Assessment

- i. Describe any mitigation considered to reduce the project's GHG emissions.

None.

- ii. Describe and quantify reductions from selected mitigation, if proposed to reduce the project's GHG emissions. Explain why the selected mitigation was preferred.

N/A

- iii. Quantify the proposed projects predicted net lifetime GHG emissions (total tons/#of years) and how those predicted emissions may affect achievement of the Minnesota Next Generation Energy Act goals and/or other more stringent state or local GHG reduction goals.

The proposed Project is expected to generate approximately 685.5 tons of CO₂e annually during construction and approximately 2,081.8 tons annually during operations (Appendix F).

In 2018, Minnesota generated an estimated 161 million tons of CO₂e. The state set a goal to reduce annual emissions to 34.9 million tons of CO₂e by 2050. Over the life of the proposed Project, total GHG emissions are anticipated to be minimal in comparison to state-wide totals and are not expected to significantly contribute to climate change impacts.

Construction and operational phases are not projected to independently cause or significantly contribute to violations of the National Ambient Air Quality Standards. Following the completion of land-disturbing activities, the Scram Mine Project Area would be restored and revegetated in accordance with Minn. Rules 6130.3500 and 6130.3600. Suitable grass, forb, and tree seed mixes appropriate for northern Minnesota would be used. The Scram Mine Project Area would be restored to similar cover types as existing conditions. The removal of vegetation and subsequent reclamation/revegetation of the Scram Mine Historic District and Scram Mine Project Area would be staged over multiple years as the proposed Project progresses. All trees that are removed would be chipped and used as mulch on-site. GHG emissions from vegetation and tree removal are expected to be minimal, as they would be staged over multiple years, each area would be allowed to revegetate to similar conditions as currently exists on-site, and the CO₂ within the removed trees would remain in the wood chips and slowly decompose. To further mitigate potential emissions, contractors would be required to properly maintain equipment and use manufacturer-specified emission control technologies throughout the construction and operational phases.

19. Noise

Describe sources, characteristics, duration, quantities, and intensity of noise generated during project construction and operation. Discuss the effect of noise in the vicinity of the project including: 1) existing noise levels/sources in the area, 2) nearby sensitive receptors, 3) conformance to state noise standards, and 4) quality of life. Identify measures that will be taken to minimize or mitigate the effects of noise.

Because ownership of the Scram Mine Historic District and Scram Mine Project Area are primarily comprised of state-owned, leased, or managed lands; Itasca County, the cities of Calumet and Marble, and Greenway Township do not have jurisdictional authority, including over noise requirements, for the proposed Project. This has been confirmed by CRC and the DNR with the appropriate jurisdictional authorities, and therefore, local noise requirements are not applicable for the proposed Project. However, MN Rules Chapter 6130.1500 (Buffers and Barriers) would apply (see **Section 15**).

Noise levels must conform to MPCA noise level requirements as listed in Minn. Rules, Chapter 7030. MPCA noise standards are represented using the A-weighted decibel scale, and expressed using the L₅₀ and L₁₀ statistical descriptors, which represent the range of permissible decibels within a 1-hour period. The L₅₀ noise level represents the level exceeded 50 percent of the time, or for 30 minutes an hour. The L₁₀ noise level represents the level exceeded 10 percent of the time, or for 6 minutes in an hour.

Noise Area Classifications (NAC) for Minn. Rules, Chapter 7030 are categorized by the type of land use activities at a location and the sensitivity of those activities to noise. Residential- and institutional-type land use activities, including homes, churches, camping and picnicking areas, and hotels, are in NAC-1. Commercial-type land use activities, such as transit terminals, retail and business services, are included in NAC-2. Industrial-type land use activities, such as mining activities, are included in NAC-3.

and would comprise the entirety of the proposed Project activities. MPCA noise standards are listed below in Table 20.

Table 20: State Noise Standards

Noise Area Classification	Daytime	Daytime	Nighttime	Nighttime
	L ₅₀	L ₁₀	L ₅₀	L ₁₀
1: Residential-type Land Use Activities	60	65	50	55
2: Retail-type Land Use Activities	65	70	65	70
3: Manufacturing-type Land Use Activities	75	80	75	80

The construction and operation of the proposed Project would produce noise. Construction and operation would occur on alternating schedules, as active work areas change throughout implementation of the proposed Project. Construction activities would include the removal of trees and historic buildings to support operation, which will produce noise, such as woodchippers, excavators, bulldozers, transport vehicles, and other equipment types will be used to clear mining areas. Construction noise would be temporary and primarily limited to daytime hours, and heavy equipment would be equipped with sound attenuation devices such as mufflers to minimize the daytime noise levels. During operation, mining and crushing operations would occur 24 hours a day, seven days a week. Noise would result from the use of equipment, including crushing, transport, and stockpiling of iron-bearing material. Rail-related noise would include engines, braking systems, and interaction of wheels with tracks, with horns and warning bells as additional contributors. In general, noise impacts would be minimal, as the proposed Project is in a rural area away from sensitive residential noise receptors.

The closest residents to the tailings basin operations are in Calumet, approximately one mile from the proposed plant site (see Figure 2 and map series). The nearest residence to stockpile operations is 0.4 miles southeast of the Hill Annex HD Rejects 2 stockpile and surrounded by trees and other vegetation, which would function as a sound dampener. The overburden stockpile also functions as a noise buffer for the community of Calumet.

CRC would review and follow all manufacturers' recommendations for noise attenuating methods for construction equipment once equipment types are selected. Additionally, CRC would conform to daytime and nighttime noise limits for NAC-3 land use activities throughout the lifetime of the proposed Project.

In compliance with Minnesota Rules 6130.1500 (Buffers and Barriers), existing vegetated terrain would be retained to the maximum extent practicable, and mine waste would be vegetated where it is feasible to provide vegetative buffers to minimize noise. All vegetative buffer additions would be installed prior to the start of operation.

Due to the distance of proposed operations from sensitive receptors, the presence of vegetative and

overburden stockpile buffers, and CRC's commitment to follow all recommendations for noise attenuating methods, nuisance noise resulting from the proposed Project would be minimal, below required NAC-3 noise standards for surrounding areas, and is not expected to impact sensitive receptors in the region.

20. Transportation

- a. Describe traffic-related aspects of project construction and operation. Include: 1) existing and proposed additional parking spaces, 2) estimated total average daily traffic generated, 3) estimated maximum peak hour traffic generated and time of occurrence, 4) indicate source of trip generation rates used in the estimates, and 5) availability of transit and/or other alternative transportation modes.

The area surrounding the surge stockpile and plant (i.e., plant service area) would be used for fleet, service and heavy equipment traffic, and a parking area. Two new access roads would be constructed in the northern portion of the Scram Mine Project Area, northeast of the City of Calumet, connected to Snowball Road and the proposed BNSF railway for maintenance purposes (Figure 9). Existing roads within the Scram Mine Project Area would be used for proposed Project activities, including the removal of historic buildings in other portions of the Scram Mine Project Area.

The proposed Project would establish a new connection to an existing BNSF railway (Figure 9), which would allow for the transport of products from the DMS and spiral plants as well as reduce the need for material transport along roadways.

As of 2023, annual average daily traffic (AADT) was 5,758 vehicles per day for the segment of Hwy 169 from County State Aid Highway (CSAH) 83 to Gary Street in the City of Calumet and 5,985 vehicles per day for the segment of Hwy 169 from CSAH 7 near the City of Taconite to Gary Street in the City of Calumet. In 2022, Morgan Street, which leads to a primary access road (i.e., Hill Annex Jones and Laughlin Road) to the Hill Annex Mine Project Area, had an AADT value of 149 vehicles per day for the segment north of Hwy 169 to 2nd Avenue. In 2020, Gary Street, which connects to Hill Annex Jones and Laughlin Road, had an AADT value of 335 vehicles per day for the segment north of Hwy 169 to 2nd Avenue (Minnesota Department of Transportation [MNDOT], 2025). Roadways surrounding the Scram Mine Project Area are depicted in Figure 9. A 5-mile buffer was used to illustrate regional transportation context, capture indirect impacts, and align with MNDOT and EQB guidance on cumulative analysis.

Availability of transit and/or alternative transportation modes is limited due to the small size of the surrounding community.

- b. Discuss the effect on traffic congestion on affected roads and describe any traffic improvements necessary. The analysis must discuss the project's impact on the regional transportation system. *If the peak hour traffic generated exceeds 250 vehicles or the total daily trips exceeds 2,500, a traffic impact study must be prepared as part of the EAW.* Use the format and procedures described in the Minnesota Department of Transportation's Access Management Manual, Chapter 5 (*available at: <http://www.dot.state.mn.us/accessmanagement/resources.html>*), or a similar local guidance.

Project-related traffic increases would primarily consist of employee commuting, estimated at approximately 20 commuter trips per day, along with intermittent construction equipment accessing the Scram Mine Project Area. The concentrate material generated by the mining operations would be transported via existing BNSF rail, which would minimize potential traffic impacts on local roads.

Highway 169 is identified as a rural principal arterial designed to provide high-speed and high-capacity travel across long distances, and any Project-related increases in traffic is not anticipated to impact the functionality of the highway. Morgan Street and Gary Street are identified as rural minor collector roadways designed to connect local roads to higher-order roads (i.e., Hwy 169) and typically accommodate lower traffic volumes and lower speeds. While these roadways may see an increase in local traffic from Project-related activities, the existing AADT volumes described above are relatively low for their respective road type classifications and potential impacts are expected to be minor and/or temporary.

A traffic impact study is not required because the increase in daily trips described above are below the State threshold.

- c. Identify measures that will be taken to minimize or mitigate project related transportation effects.

Ingress and egress locations would be identified prior to construction and operation, and only those access points would be used. All access points would be approved by the appropriate state, county and/or local government authority. Access points would be located to avoid routing vehicles from the mining operation over roads that primarily serve residential areas.

If needed during the hours of operation, "Trucks Hauling" signs would be placed along public roads leading to the extractive use site entrances at least 500 feet from the entrances. The applicable road authority would approve the size and type of sign. Signs would be removed or covered during non-operating hours.

Traffic on paved and public roads would be minimized, as much as possible, to prevent fugitive emissions and vehicle track-out. Precautions would be taken to minimize the deposit of dirt and extracted material from trucks onto public roads. Any fugitive dust in the Scram Mine Historic District and Scram Mine Project Area would be controlled by applying water via water trucks (See EAW Item 17 for detailed mitigation measures).

Following mining operation, roads within the Scram Mine Historic District and Scram Mine Project Area would be reclaimed and vegetated according to Minn. Rules 6130.3600. Culverts would be removed and replaced with natural channels in conjunction with road reclamation.

The railroad corridor right-of-way may be sold for use as a railroad or recreational trail. Bridges and culverts associated with the corresponding right-of-way would be retained. For sections of railroad not to be retained, the rail and ties would be removed and reclaimed per Minn. Rules 6130.3600.

21. Cumulative potential effects:

(Preparers can leave this item blank if cumulative potential effects are addressed under the applicable EAW Items)

- a. Describe the geographic scales and timeframes of the project related environmental effects that could combine with other environmental effects resulting in cumulative potential effects.

Since proposed Project activities would occur on a previously mined and disturbed landscape, and because active disturbance areas are limited in size at any given time (e.g., tailings basin work areas limited to 20 acres), the geographic scale of Project-related environmental effects are expected to be localized.

The timeframe for assessing cumulative potential effects can be considered in terms of construction, operations, and reclamation:

- Construction is expected to commence as soon as all necessary permits are granted (EAW Item 12). A specific start date is not yet available and is contingent on the permitting schedule. Construction and initial plant commissioning are expected to require approximately one year.
- Following construction, mining and processing operations are expected to continue for approximately 15 years. Operations would occur 24 hours per day, seven days per week, approximately eight months each year (April through November). The plant would not operate during winter months due to freezing conditions (EAW Items 6b and 17c).
- Reclamation of stockpile, tailings basin, and waste management areas is expected to require approximately three years following cessation of active mining, per the following schedule (EAW Item 6b):

- i. Years 1-2: Stockpile and tailings basin shaping, cover, and vegetation establishment

- ii. Year 3: Reclamation of access roads, WMAs, and remaining infrastructure

Full reclamation is not considered complete until vegetative cover is demonstrated to be self-sustaining, which would be evaluated within 10 growing seasons of final disturbance per Minn. Rules 6130.3600, Subp. 4.B. An additional 10-year post-closure monitoring period would follow. In total, Project-related activities including construction, operation, closure, and monitoring are expected to span approximately 29 years (EAW Item 6b).

An additional timeframe consideration is that several proposed Project activities are subject to timing constraints independent of the general construction/operation/reclamation schedule provided above:

- Tree and vegetation clearing would be scheduled outside the active roosting season for the northern long-eared bat and little brown bat (i.e., April 15-October 31) to minimize potential impacts to these species (EAW Item 14c-d).
- A presence/probable absence survey and habitat assessment for the state-threatened Case's ladies' tresses would be completed prior to construction to determine whether additional permitting is required (EAW Item 14b-d).
- Documentation and mitigation of effects to the NRHP-listed Hill Annex Mine Historic District

including Level I historic documentation, oral/photographic/written records, and Phase I/II archaeological surveys must occur in coordination with SHPO and per the Programmatic Agreement, prior to demolition and ground disturbance (EAW Item 15).

- A deactivation plan must be submitted to the DNR Commissioner at least two years prior to the start of deactivation, per Minn. Rule 6131.0170.
- CRC's Water Appropriation Permit application (No. 2024-3521) is currently under DNR review. Water appropriation from the Hill Annex Pit cannot begin until this permit is approved (EAW Item 12b.iii).
- If a bald eagle nest is identified within the Scram Mine Project Area, Scram Mine Historic District, or within 660 feet of either boundary, additional USFWS/DNR eagle-take permitting requirements would apply prior to related disturbance (EAW Item 14b-d).

Effects expected to be negligible over the long term include changes to regional topography and watershed boundaries, since land disturbance is confined to areas previously altered by historic mining and the proposed Project is not expected to modify existing watershed boundaries or surface drainage patterns (EAW Items 11b and 12b.ii); and effects related to water appropriation, since proposed Project water use represents a small fraction of the Hill Annex Pit's estimated inflow and is not expected to result in a measurable or permanent decline in pit water levels (EAW Item 12b.iii).

The Project's long-term, permanent effect is the loss of National Register of Historic Places (NRHP) eligibility of the Hill Annex Mine Historic District, resulting from removal of contributing buildings, structures, and associated mining features (EAW Item 15). Mitigation measures under the Programmatic Agreement including formal documentation, artifact rehoming, and development of interpretive materials are intended to preserve the historic and educational value of the resource but do not restore its NRHP eligibility.

- b. Describe any reasonably foreseeable future projects (for which a basis of expectation has been laid) that may interact with environmental effects of the proposed project within the geographic scales and timeframes identified above.

Currently, the only known proposed project in the vicinity is any future development of the Mesabi Metallica site located northeast of the Scram Mine Project Area. Any such a future action has not been identified.

- c. Discuss the nature of the cumulative potential effects and summarize any other available information relevant to determining whether there is potential for significant environmental effects due to these cumulative effects.

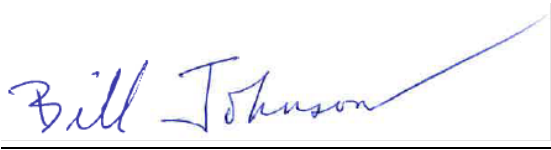
Mesabi Metallica reports it is preparing to shift from the construction phase to the operations phase of their Nashwauk mining, processing, and pellet production facility. While both the proposed project and the neighboring Mesabi Metallica project include mining components, the proposed project involves processing recoverable iron material from existing legacy stockpiles and tailings basins in contrast to the active mining (e.g., blasting; dewatering; ore transport), processing (e.g., water use; emissions), and pelletizing (e.g., emissions). For the proposed project, air impacts should be localized with effective dust control, while all water would be sourced exclusively from the Hill Annex pit lake,

where this would be a zero-surface discharge facility. Therefore, cumulative potential effects are expected to be minimal.

RGU CERTIFICATION. *(The Environmental Quality Board will only accept **SIGNED** Environmental Assessment Worksheets for public notice in the EQB Monitor.)*

I hereby certify that:

- The information contained in this document is accurate and complete to the best of my knowledge.
- The EAW describes the complete project; there are no other projects, stages or components other than those described in this document, which are related to the project as connected actions or phased actions, as defined at Minnesota Rules, parts 4410.0200, subparts 9c and 60, respectively.
- Copies of this EAW are being sent to the entire EQB distribution list.

Signature  Date 10/19/2026

Title Planning Director, DNR Environmental Review Unit