

**Appendix 13 Annual Report**



## NORTHMET PROJECT PERMIT TO MINE ANNUAL REPORT TEMPLATE

### **1 Introduction**

Nonferrous Metallic Mineral Mining Rules (Minnesota Rules, part 6132.1300) require permittees to submit an Annual Mining and Operating Report to the Minnesota Department of Natural Resources (MDNR). The report should document actual mining and reclamation completed in the past calendar year (20XX), describe the mining and reclamation activities planned for the upcoming year (20YY), and provide a contingency reclamation plan to be implemented if operations cease in the upcoming year. If any corrective actions were required by the Project, in accordance with Minnesota Rules, part 6132.3100, subpart 2, a corrective action plan will be included as part of this annual report. This report will be submitted to the MDNR by March 31 of each calendar year of operation starting with the first March after the Permit to Mine (PTM) issuance.

(20XX is the annual report year; 20YY is the upcoming year.)

## **2 Mining and Reclamation Completed in Year 20XX**

(Minnesota Rules, part 6132.1300, subpart 2)

For the year 20XX, this section describes the mining activities conducted, the reclamation and corrective actions conducted (if any), changes to the approved mining and reclamation plan (if any), new rock types or formations encountered (if any), changes in ownership or organizational structure (if any), and wetland replacement activities that occurred. It also describes monitoring activities and results.

### **Mining Activities**

(Minnesota Rules, part 6132.1300, subpart 2, item A)

#### **Types, Amounts, Sequence, and Schedule of Mining**

(Minnesota Rules, part 6132.1300, subpart 2, item A(1))

Describe types, amounts, sequence, and schedule of mining the ore body and stockpiling materials, including the quantities of ore, lean ore, and waste rock. Also document the generation of Flotation Tailings, Hydrometallurgical Residue, and Concentrates.

Table 2-1 summarizes production of ore, lean ore, waste rock, Flotation Tailings, Hydrometallurgical Residue, and Concentrates for year 20XX.

Table 2-2 documents waste rock production in more detail.

### **Beneficiation Process**

(Minnesota Rules, part 6132.1300, subpart 2, item A(2))

Describe changes in the beneficiation process, including changes in the types and amounts of chemicals added, and their effect, if any, on the types, amount, and means of waste disposal.

### **Reclamation Activities**

(Minnesota Rules, part 6132.1300, subpart 2, item B)

Describe the reclamation activities and corrective actions (if any) performed in year 20XX.

Complete Table 2-3.

### **Reclamation Research**

Describe any reclamation research conducted during the year 20XX as well as any grants provided for such research or reclamation.

### **Reclamation Methods and Sequence**

Describe reclamation methods applied during year 20XX and sequencing of such activities.

### **Corrective Actions**

Describe corrective actions conducted in year 20XX (if any).

### **Status of Ongoing Postclosure Maintenance Activities**

(Minnesota Rules, part 6132.1300, subpart 2, item C)

Describe ongoing postclosure maintenance activities (if any) conducted in year 20XX.

### **Scope and Schedule Changes from the Approved Mining and Reclamation Plan**

(Minnesota Rules, part 6132.1300, subpart 2, item D)

#### **Changes to the Approved Mining Plan**

Discuss changes to the approved mining plan (if any) that occurred during year 20XX including:

- ◆ Changes to the mining rate and/or schedule (if applicable)
- ◆ Changes to the beneficiation processes (if applicable)
- ◆ Potential effects of such changes to the approved mining and reclamation plan

#### **Changes to Approved Reclamation Plan**

Discuss changes to the approved reclamation plan (if any) that occurred during year 20XX including:

- ◆ Changes in types of reclamation
- ◆ Changes to scheduling and sequencing of reclamation
- ◆ Potential effects of such changes to the approved mining and reclamation plan

### **Characterization of New Rock Types or Formations**

(Minnesota Rules, part 6132.1300, subpart 2, item E)

Describe new rock types or formations encountered during year 20XX including:

- ◆ Description of new rock types or formation encountered
- ◆ General mineralogical description with potential for acid generation
- ◆ Waste rock characterization, in accordance with Minnesota Rules, part 6132.1000
- ◆ Potential effects to the approved mining and reclamation plans

### **Administration and Ownership Changes**

(Minnesota Rules, part 6132.1300, subpart 2, item F)

Describe changes in ownership or organizational structure of the administration of the facility, focusing on the general management and the mining and environmental departments.

### **Wetland Replacement Activities**

(Minnesota Rules, part 6132.1300, subpart 2, item G)

Describe wetland replacement activities that occurred during year 20XX.

### **Annual Monitoring Summary**

Describe monitoring activities that were conducted in year 20XX for the following management and monitoring plans:

- ◆ Waste Rock and Ore Management and Monitoring Plan
- ◆ Overburden Management and Monitoring Plan
- ◆ Transportation and Utility Corridors Management and Monitoring Plan

### **3 Operating Plan – Mining and Reclamation Planned for the Upcoming Year 20YY**

(Minnesota Rules, part 6132.1300, subpart 3)

For the year 20YY, this section describes the planned mining and reclamation activities, intention to close a mining area or portion of an area, changes to the approved mining and reclamation plan (if any), evidence of liability insurance, anticipated changes in ownership or organizational structure (if any), and planned wetland replacement activities.

#### **Anticipated Mining Activities**

(Minnesota Rules, part 6132.1300, subpart 3, items A and B)

##### **Types, Amount, Sequence, and Schedule of Mining**

Describe anticipated mining for year 20YY including: types, amounts, sequence, and schedule of mining the ore body and stockpile materials, including anticipated quantities of ore, lean ore, and waste rock and generation of Flotation Tailings, Hydrometallurgical Residue, and Concentrate.

Complete Table 2-1 listing anticipated quantities of ore, lean ore, waste rock, Flotation Tailings, Hydrometallurgical Residue, and Concentrate production for year 20XX.

Complete Table 2-2 listing waste rock production

Include a map of the anticipated mining activities for year 20YY.

##### **Beneficiation Process**

Describe any anticipated changes to the beneficiation process, including a discussion on types and amounts of chemicals to be applied for the upcoming year, and their anticipated effect, if any, on the types, amount, and means of waste disposal.

#### **Anticipated Reclamation Activities**

(Minnesota Rules, part 6132.1300, subpart 3, items C)

Discuss anticipated reclamation activities for year 20YY.

##### **Reclamation Research**

Describe any reclamation research planned for year 20YY as well as any grants provided for such research and reclamation.

### **Reclamation Methods and Sequence**

Describe anticipated reclamation methods and sequencing to be completed in year 20YY.

### **Intent to Close a Mining Area or Portion of a Mining Area**

(Minnesota Rules, part 6132.1300, subpart 3, item D)

If planned, provide notification and a description of closure plans for the mining area or a portion of the mining area.

### **Anticipated Scope and Schedule Changes from the Approved Mining and Reclamation Plan for Year 20YY**

(Minnesota Rules, part 6132.1300, subpart 3, item E)

#### **Anticipated Changes to the Approved Mining Plan**

Discuss any planned changes to the approved mining plan that will occur in year 20YY including:

- ◆ Anticipated changes to the mining rate and/or schedule (if applicable)
- ◆ Anticipated changes to the beneficiation processes (if applicable)
- ◆ Potential effects of such changes to the approved mining and reclamation plans.

#### **Anticipated Changes to the Approved Reclamation Plan**

- ◆ Anticipated changes in types of reclamation
- ◆ Anticipated changes to scheduling and sequencing of reclamation
- ◆ Consequences or effects of such changes to the approved mining and reclamation plans

### **Evidence of Liability Insurance**

(Minnesota Rules, part 6132.1300, subpart 3, item F)

Provide evidence that the liability insurance submitted as part of the permit application remains in force or provide a description of any changes in liability insurance.

### **Anticipated Changes in Administration and Ownership**

(Minnesota Rules, part 6132.1300, subpart 3, item G)

Describe anticipated changes in ownership or organizational structure of the administration of the facility, focusing on the general management and the mining and environmental departments.

### **Wetland Replacement Plan**

(Minnesota Rules, part 6132.1300, subpart 3, item H)

Provide a description of any changes anticipated to the wetland replacement plan or activities for year 20YY.



## **4 Contingency Reclamation Plan**

(Minnesota Rules, part 6132.1300, subpart 4)

Describe the contingency reclamation plan, including closure and postclosure maintenance activities that would be implemented in year 20YY if operations cease during that calendar year.

### **Anticipated Closure Activities**

(Minnesota Rules, part 6132.1300, subpart 4, item A)

Describe the methods, sequence, and schedule of reclamation needed to address the goals and meet the requirements of Minnesota Rules, parts 6132.2000 to 6132.3200.

### **Maps and Cross Sections**

(Minnesota Rules, part 6132.1300, subpart 4, item B)

Provide maps and cross sections that depict the construction, including shape, extent, and content, and reclamation, including contouring, covering, vegetation, closure, and postclosure maintenance, of each area affected by mining.

### **Cost Estimates and Financial Mechanisms**

(Minnesota Rules, part 6132.1300, subpart 4, item C)

#### **Cost Estimates**

Provide a cost estimate, as required under Minnesota Rules, part 6132.1200, to implement the contingency reclamation plan if operations cease in year 20YY.

#### **Financial Instruments**

Describe the financial mechanisms, as required under Minnesota Rules, part 6132.1200, necessary to implement the contingency reclamation plan if operations cease in year 20YY.

## **5 Corrective Action Plan (if necessary)**

(Minnesota Rules, part 6132.1300, subpart 5)

When a corrective plan is required under Minnesota Rules, part 6132.3100, subpart 2, describe the corrective actions completed for year 20XX, anticipated corrective actions to be completed in year 20YY, and the corrective action cost estimate for the year 20YY.

### **Corrective Actions in Year 20XX**

(Minnesota Rules, part 6132.1300, subpart 5, item A)

Describe the corrective actions completed in year 20XX.

### **Anticipated Corrective Actions for Year 20YY**

(Minnesota Rules, part 6132.1300, subpart 5, item B)

Describe the anticipated corrective actions to be completed in year 20YY.

### **Corrective Actions Cost Estimate for Year 20YY**

(Minnesota Rules, part 6132.1300, subpart 5, item C)

Provide a cost estimate for the anticipated corrective actions to be completed in year 20YY.

## **6 Maps**

(Minnesota Rules, part 6132.1300, subpart 6)

### **Mining and Reclamation Maps for Year 20XX**

Provide updated mining and reclamation maps showing the status of mining, construction, reclamation, including closure and postclosure maintenance, and watershed modifications for year 20XX.

### **Mining and Reclamation Maps for Year 20YY**

Provide updated mining and reclamation maps showing the anticipated status of mining, construction, reclamation, including closure and postclosure maintenance, and watershed modifications for year 20YY.

**Table 1-1**  
**Contact Information Update**

Position	Name	Email Address
Environmental Manager		

**Table 1-2**  
**Permits Held and Other Compliance Parameters**

Type of Permit	Permit Number	Date Issued	Date of Expiration	Permit Status (in compliance, under SOC, etc.)	Additional Information

**Table 1-3  
Tailings Basin Dam Height Update**

Dam Name	Permitted Dam Height	20XX	20XX
		Dam height (MSL)	Dam height (MSL)

Notes:

Please provide information about changes in elevations of tailings basin dams/dikes that occurred in 20XX, relative to Mean Sea Level (MSL). Add additional rows as necessary.

MSL = mean sea level

**Table 2-1  
Mining Rates and Production Summary**

Facility	20XX			20XX		
	Ore/feed	Concentrate		Ore/feed	Concentrate	
	(short tons)	Cu (short tons)	Ni (short tons)	(short tons)	Cu (short tons)	Ni (short tons)
<b>Total</b>						

	20XX	20XX
<b>Waste Rock</b>	<b>Waste Rock (short tons)</b>	<b>Waste Rock (short tons)</b>
<b>Total</b>		

**Total waste rock including all categories**

	20XX	20XX
<b>Tailings</b>	<b>Tailings (short tons)</b>	<b>(cubic (short tons)</b>
<b>Total</b>		

	20XX	20XX
<b>Surface Overburden</b>	<b>n (cubic yards)</b>	<b>n (cubic yards)</b>
<b>Total</b>		

	20XX	20XX
<b>Hydromet Residue</b>	<b>Residue (short tons)</b>	<b>Residue (short tons)</b>
<b>Total</b>		

**Table 2-2  
Waste Stockpile Activity**

Permanent Stockpiles		20XX			20XX		
Stockpile Name and Location	In-pit (Y/N)	Amount Waste Rock (short tons)	Amount Surface Storage Used (CY)	Amount Surface Storage Remaining (CY)	Amount Waste Rock (short tons)	Amount Surface Storage Used (CY)	Amount Surface Storage Remaining (CY)
Category							
Category							
Category							
Category							
<b>Total:</b>							
Temporary Stockpiles		20XX			20XX		
Stockpile Name and Location	In-pit (Y/N)	Amount Waste Rock (short tons)	Amount Surface Storage Used (CY)	Amount Surface Storage Remaining (CY)	Amount Waste Rock (short tons)	Amount Surface Storage Used (CY)	Amount Surface Storage Remaining (CY)
<b>Total:</b>							

Notes:  
CY = cubic yards  
Y/N = yes/no



**Table 2-3  
Areas Reclaimed in 20XX**

Name	GPS Coordinates Entry Point	Area (acres)	Physical Alterations (Sloping, discing, crimping, application of overburden, application of overburden, or other physical alterations done)	Amendments (Biosolids/fertilizer/mulch) (include type of fertilizer, pounds per acre, NPK ratio, timing, method of application, etc.)	Number and Species of Trees planted (describe planting methods here)	Seed Mix Composition	Date Planted	Lift/Bench (if applicable)	Landform Type (stockpile, pit, tailings basin, dike, reclaimed road, etc.)	Contractor Used (optional)	Additional Comments
<b>Temporary Reclamation</b>											
<b>Permanent Reclamation</b>											

Note:  
Include any acceptable research or innovative reclamation grant information in comments.

**Table 2-4  
Wetlands Impacted in 20XX**

<b>Wetlands Impacted</b>		
<b>Name/Location</b>	<b>Area (acres)</b>	<b>Comments</b>

<b>Mitigation Sites</b>		
<b>Name</b>	<b>Replacement Location</b>	<b>Comments</b>

Note:  
In additional comments, note any mitigation or replacement that has or will be done.



# NORTHMET PROJECT PERMIT TO MINE ANNUAL REPORT FIRST YEAR OF OPERATION

## **1 Introduction**

This report describes the NorthMet Project's proposed first year of operations as required under MDNR Nonferrous Metallic Mineral Mining Rules, part 6132.1100, subpart 8 and part 6132.1300, subparts 3 to 6.

The first year of operation will commence with the site development work (construction) for mine operations, which will begin following the issuance of the Permit to Mine and other required operating permits. Activities planned for the first year will include construction within three project development areas: the Mine Site, the Plant Site, the Transportation and Utility Corridors, and Colby Lake Pipeline Corridor. In the Permit to Mine, this period of site development is referred to as the Construction Phase.

An Annual Report template proposed to be used by PolyMet for subsequent years is provided in Appendix 13. This report follows the format of that template for anticipated activities associated with work for the first year of operations.

## **2 Operating Plan – First Year of Construction**

(Minnesota Rules, part 6132.1300, subpart 3)

The first year of construction will begin upon issuance of permits and commencement of site development activities to support the Project Mining and Reclamation Plan. For purposes of this application, the first year of construction is defined as Construction Year 1.

### **Anticipated Mining Activities**

(Minnesota Rules, part 6132.1300, subpart 3, items A and B)

During Construction Year 1, there will be no mining activities. The focus of the work associated with the first year of operations will be development of the mining area. There will be no Duluth Complex or Virginia Formation rock blasted within the mine pits. Beneficiation processing will not begin at the Plant Site, and therefore no nonferrous tailings will be deposited in the Flotation Tailings Basin (FTB).

The following provides an overview of site development activities within the Mine Site, Plant Site, Transportation and Utility Corridors, and Colby Lake Pipeline Corridor.

### **Mine Site Development**

Mine Site development is anticipated to take 18 to 24 months of construction. During Construction Year 1, Mine Site development activities will begin. Mine Site development activities will include:

- ◆ Construction of approximately 22,000 feet of the haul roads.
- ◆ Construction of stockpile footprints: approximately 13 acres of Category 1 Stockpile footprint; approximately 63 acres for the Category 2/3 Stockpile, 29 acres for the Category 4 Stockpile, and 32 acres for the OSP.
- ◆ Construction of stormwater ponds A, B, C, and D and related ditches and dikes.
- ◆ Construction of the WWTF (partially), including east and west equalization basins and CPS.
- ◆ Construction of mine water management system infrastructure, including sumps, ponds, pipelines, and pumping systems.
- ◆ Installation of approximately 40,000 linear feet of TWP and associated mechanical and electrical controls.
- ◆ Stripping of approximately 95 acres of overburden from the East Pit. Rock blasting within the pit will not occur during this period.
- ◆ Construct the Mine Site power distribution system.

- ◆ Construction of the MSFMF.

These features are shown on Figure 16-1.

### **Plant Site Development**

Plant Site development is anticipated to take 18 to 24 months of construction. During Construction Year 1, Plant Site development activities will begin. Plant Site development activities include:

- ◆ Construction of Phase 1 of the WWTP.
- ◆ Refurbishment of the LTVSMC plant to accommodate Project ore beneficiation processes and production schedule.
- ◆ Construction of the Flotation Building.
- ◆ Construction of the Concentrate Dewatering and Storage and Concentrate Loadout Building.
- ◆ Construction of the first lift of tailings basin dams and installation of CDSM shear walls.
- ◆ Construction of approximately 24,000 linear feet of FTB Seepage Containment System, including access road, cutoff wall, piping, valves, pumps, and other mechanical and electrical systems.
- ◆ Construction of stormwater ponds and related ditches and dikes.
- ◆ Construction of Sewage Treatment Systems.
- ◆ Refurbish raw water, potable and fire water systems for plant operations.
- ◆ Refurbish power distribution systems across the Plant Site.

These features are shown on Figure 16-2.

### **Transportation and Utility Corridors Development**

Transportation and Utility Corridors infrastructure construction will begin during Construction Year 1, including construction of approximately 11,000 linear feet of new rail and adjacent service road between the Mine and Plant Sites and refurbishment of the railroad track along the Railroad Corridor, as needed. Construction of the TWP and upgrades to Dunka Road will also commence.

### **Colby Lake Pipeline Corridor Development**

The Colby Lake Pipeline infrastructure refurbishment will begin during Construction Year 1, and will include the refurbishment of the pipeline and Colby Lake Pumphouse.

### **Anticipated Reclamation Activities**

(Minnesota Rules, part 6132.1300, subpart 3, items C)

Reclamation during Construction Year 1 will be limited to restoring small areas disturbed during construction including laydown areas associated with site development and partial dam slope restoration at the FTB.

### **Intent to Close a Mining Area or Portion of a Mining Area**

(Minnesota Rules, part 6132.1300, subpart 3, item D)

No portions of the mining area are planned to be closed during Construction Year 1.

### **Anticipated Scope and Schedule Changes from the Approved Mining and Reclamation Plan for Year 20YY**

(Minnesota Rules, part 6132.1300, subpart 3, item E)

There are no anticipated scope or schedule changes to the Mining and Reclamation Plan, as described in Sections 4 through 8, during Construction Year 1.

### **Evidence of Liability Insurance**

(Minnesota Rules, part 6132.1300, subpart 3, item F)

Evidence of liability insurance required for first year of operation will be provided to the commissioner prior to the commencement of Construction Year 1.

### **Anticipated Changes in Administration and Ownership**

(Minnesota Rules, part 6132.1300, subpart 3, item G)

There are no anticipated changes in ownership or organizational structure of the administration of the facility, as compared to the information provided in Section 1 of this Application.

### **Wetland Replacement Plan**

(Minnesota Rules, part 6132.1300, subpart 3, item H)

See Appendix 18.3 of this Application.

### **3 Contingency Reclamation Plan**

(Minnesota Rules, part 6132.1300, subpart 4)

#### **Methods, Goals, Sequencing**

The goal of the Construction Year 1 Contingency Reclamation Plan is to identify reclamation actions that would need to be performed by the state in the event PolyMet fails to meet its PTM obligations.

#### **Anticipated Closure Activities**

(Minnesota Rules, part 6132.1300, subpart 4, item A)

The Construction Year 1 Contingency Reclamation Plan is provided in Appendix 15.1, and includes:

- ◆ Demolition and removal of nonferrous buildings and structures;
- ◆ Reclamation of stockpile footprints;
- ◆ Reclamation of the FTB; and
- ◆ Reclamation of water management controls.

#### **Maps and Cross Sections**

(Minnesota Rules, part 6132.1300, subpart 4, item B)

Figures of the activities associated with the Construction Year 1 Contingency Reclamation Plan are included in Appendix 15.1.

#### **Cost Estimates and Financial Mechanisms**

(Minnesota Rules, part 6132.1300, subpart 4, item C)

##### **Cost Estimates**

The Construction Year 1 CRE is presented in Appendix 15.2.

##### **Financial Instruments**

The financial instruments planned for use for Construction Year 1 are presented in Appendix 15.1.

#### **4 Corrective Action Plan (if necessary)**

(Minnesota Rules, part 6132.1300, subpart 5)

PolyMet does not foresee violations to the PTM during Construction Year 1. As such, corrective actions have not been included here.



## **5 Maps**

(Minnesota Rules, part 6132.1300, subpart 6)

Maps showing the development of the mining area planned for Construction Year 1 are attached as follows:

- Figure 16-1 Mine Site Development
- Figure 16-2 Plant Site Development