



Instructions: This form is for Minnesota Pollution Control Agency (MPCA) internal use by Air Dispersion Modelers to review Class I Increment Air Pollutant Dispersion Modeling.

Facility Information

Project title: Class I Air Quality Analysis (NAAQS SIL & Increment) Submittal date (mm/dd/yyyy): 12/23/16 - Errata
 AQ ID Number: AI 213111
 Facility name: PolyMet Mining Company. Inc.(Plant & Mine Site)
 Facility street address: P.O. Box 475, 6500 County Road 666
 City: Hoyt Lakes County: St. Louis State: MN Zip Code: 55750-0475
 Facility contact: Kevin Pylka, PolyMet Mining Report prepared by: Andrew Skogland, Barr Engineering, Inc.
 Facility contact phone: 218.471.2162 Preparer phone: 952.832.2685
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 MPCA air modeler: Jim Sullivan MPCA air permit engineer: Hassan Bouchareb

List of Files with Names/Descriptions submitted with Modeling Report

1. CALPUFF Model Control File – Meteorological Input Files & Names
 CALMET.DAT: ISCMET.DAT: PLMMET.DAT: PROFILE.DAT/SURFACE.DAT/RESTARTB.DAT: Other
 Comments: Met data configured to a 4km grid. MM5 data from 2002, 2003, and 2004.
2. CALPUFF Model Control File – Emission Input Files & Names
 PTEMARB.DAT: VOLEMARB.DAT: BAEMARB.DAT: LNEMARB.DAT
 Comments: Content of files reviewed below in emissions section.
3. CALPUFF Model Control File – Other Input Files & Names
 OZONE.DAT: VD.DAT: CHEM.DAT: H2O2.DAT:
 HILL.DAT: COASTLN.DAT: FLUXBDY.DAT: BCON.DAT
 Comments: No further comment.
4. CALPUFF Model Control File – Output Files & Names
 CALPUFF.LST: CONC.DAT: DFLX.DAT: WFLX.DAT: VISB.DAT:
 RESTARTE.DAT: DEBUG.DAT: MASSFLX.DAT: MASSBAL.DAT: FOG.DAT
 Comments: No further comment.
5. Receptor Grid Location and Spacing
 Comments: *Company used the MPCA-approved Class I modeling receptor Grid (BWCA, Voyageurs, Isle Royale, Rainbow Lakes), along with a 4km by 4km terrain and meteorology grid spacing.*

6. CALSUMM Model Control File

Comments: No further comments

7. CALPOST Model Control File

Comments: Pollutant-specific concentration/deposition input file (PM10T.DAT;TFLX.DAT). CALPOST output file (CALPOST.LST = BOWA_M8_20BestP.LST;nox_c.lst;s_t.lst; so2_c.lst; n_t.lst)

Section 1. Modeling Review

Section and section name	Substantially complete/incomplete	Deficiencies and/or comments
Files to accompany modeling	Substantially Complete	Company provided run-ready file configuration to assist in the verification of PSD increment and SIL analysis.
Final modeling report	Substantially Complete	Final Class I modeling submitted on August 24, 2016, with errata provided on December 23, 2016.
Have Federal Land Manager's (FLM's) been provided with a copy of the Class I report?	Substantially Complete	The Federal Land Managers (FLMs) were provided with a copy of the Class I modeling protocol and report that included an analysis of visibility, Air Quality Resource Values (AQRV's), Class I Increment, and Significant Impact Levels (SIL's).
Modeling results	Substantially Complete	Project Class I modeling results are below the applicable SIL values (Table #1). Cumulative modeling results are below the Class I increment value (Table #2).
Discussion of Protocol Changes and Results	Substantially Complete	No comments on this section
Modeling results figures/maps	Substantially Complete	No comments on this section
Comments	<p><i>The Company found a few errors in emission source elevation and inputs for one space heating source. Along with these errors, some minor adjustments to account for tailings basin construction and fleet emission overlaps were also addressed. The CALPUFF model was re-run and the results were provided to the MPCA in an errata memorandum, on December 23, 2016. The MPCA review of the Class I report and errata is included in this document. MPCA Model verification of the Company submittal demonstrated consistent outcomes. Class I Increment and SIL model results are provided below.</i></p>	
Modeling Report Substantially Complete	Substantially Complete	Date (mm/dd/yyyy): 01/30/2017

Increment modeling results (Provide the increment modeling results along with the percent of standard.)

Table #1 – Project Class I SIL Evaluation		PSD Increment	SIL	Modeled Level (µg/m³)			
Pollutant	Averaging Period			BWCA	Voyageurs	Isle Royale	Rainbow Lakes
SO ₂	3-Hour	25	1	0.106	0.020	0.001	0.004
	24-Hour	5	0.2	0.027	0.005	0.001	0.001
	Annual	2	0.1	0.001	0.000	0.000	0.000
NO ₂	Annual	2.5	0.1	0.008	0.001	0.000	0.000
PM ₁₀	24-Hour	8	0.3	0.281	0.128	0.029	0.027
	Annual	4	0.2	0.020	0.005	0.001	0.002

Table #2 - Cumulative 24-Hour PM ₁₀ Increment Modeling Summary				
Pollutant	Averaging Period	PSD Class I Increment (µg/m³)	Modeled Results	
			BWCAW (µg/m³)	Voyageurs National Park (µg/m³)
PM ₁₀	24-hour	8	1.95	1.20

Table #3 - Deposition Modeling		NPS	Modeled Level (kg/ha/yr)			
Annual Deposition			DAT	BWCA	Voyageurs	Isle Royale
	N	0.01	0.002	0.000	0.000	0.000
	S	0.01	0.001	0.000	0.000	0.000

Section 2. Modeling Emission Inventory Review

Technical review of final modeling emission inventory

Review items	Acceptable/ Unacceptable	Deficiencies and/or comments	
Protocol changes adequately described in the final Modeling Report	Acceptable	No comments on this section	
Final Class I emission inventory consistent with the MPCA Class I Protocol	Acceptable	No comments on this section	
Modeling demonstrates compliance with applicable Class I PSD increments	Acceptable	No comments on this section	
Modeling Report Emission Inventory Approval	Acceptable	Date (mm/dd/yyyy):	02/01/2017
Comments :	No comments.		