

WATER QUALITY SPREADSHEET FOR SEDIMENT PONDS

Version 5

DATE OF CALCULATION: 7-Apr-2025

OPERATOR:	Rockwood Stone, LLC
MINE PERMIT #	56250301
NPDES #:	PA0279935
SITE NAME:	Rockwood Quarry
SITE STATUS:	Application In Process

RECEIVING STREAM NAME:	Rhoads Creek
CHAPTER 93 CLASSIFICATION:	Warm Water Fishes
DOES THE RECEIVING STREAM HAVE SPECIAL PROTECTION STATUS?	No
IS AN AMD TMDL IN EFFECT FOR THE RECEIVING STREAM?	Yes

MONITORING POINT IDENTIFIER:	9
NPDES OUTALL ID NUMBERS DISCHARGING TO THIS STREAM:	001 and 002

AREA AND MULTIPLIER INPUT DATA	
MAXIMUM MINING AREA AFFECTED (not Stage 2)	137
WATERSHED AREA TO MONITORING POINT	3059 Acres

FLOW MULTIPLIERS	
AFFECTED AREA MULTIPLIER, Default is '2' signifying that areas that do not meet reclamation standards will contribute twice as much to the flow as the surrounding undisturbed area	2

CALCULATED ADJUSTED AREA AND AVAILABLE DILUTION	
FLOW-ADJUSTED MINING AREA ACREAGE	274.4 Acres
WATERSHED ACRES OUTSIDE MINING AREA:	2921.8 Acres

AVAILABLE DILUTION 1: 10.65 (Mine Area : Watershed Area - with flow multipliers applied)

RECEIVING STREAM DATA FROM MONITORING POINT 9						
DATE	IRON mg/L	MANGANESE mg/L	ALUMINUM mg/L			
7/10/2024	0.18	0.05	0.10			
8/19/2024	0.22	0.05	0.10			
9/24/2024	0.11	0.04	0.10			
10/30/2024	0.05	0.02	0.10			
11/25/2004	0.16	0.03	0.10			
12/26/2024	0.10	0.01	0.10			
MEDIAN:	0.14	0.04	0.10			

EFFLUENT LIMIT CALCULATIONS								
	BAT (or MAX) EFFLUENT LIMITS	CHPT. 93 IN-STREAM CRITERIA	REQUIRED DILUTION RATIO (Total effluent flow:stream flow)	ALLOWABLE CONCENTRATIONS*	AVERAGE MONTHLY LIMITS	MAXIMUM DAILY LIMITS (AML X 2)	INSTANTANEOUS MAXIMUM LIMITS (AML X 2.5)	
Iron	3.0	1.50	1: 1.10	16.03	3.00	6.0	7.0	mg/L
Manganese	2.0	1.00	1: 1.04	11.28	2.00	4.0	5.0	mg/L
Aluminum	4.0	0.75	1: 5.00	7.67			MONITOR ONLY	mg/L

Notes:
* If the BAT (or Max) limits are less than the Allowable Concentrations then the BAT limits (or Monitor Only requirement) are applied instead

The Effluent Limit values are rounded down to the nearest tenth when the value is greater than 1.0. For example, an average monthly limit value of 1.28 mg/L is rounded down to 1.2 mg/L. The BAT IMAX limit for iron is rounded to 7.0 mg/L instead of 7.5 mg/L.

If the receiving stream is degraded by abandoned mine drainage causing the background stream concentrations to exceed criteria and there is no TMDL in effect for the stream then the effluent limits are set at instream criteria.

If the receiving stream is degraded by abandoned mine drainage causing the background instream concentrations exceed criteria but there is a TMDL in effect for the stream then the effluent limits are set such that the discharge will not contribute to a further exceedance of the criteria. This does not apply to aluminum, which has an acute criterion.

4.0 mg/l is the 'maximum' Average Monthly Limit (AML) for aluminum; AML limits above 4.0 mg/l would result in an Instantaneous Max above 10 mg/L which results in only a 'Monitor Only' requirement for aluminum. This is in accordance with the "Developing National Pollutant Discharge Elimination System (NPDES) Permits for Mining Activities" Technical Guidance Document (No. 563-2112-115).