DEQ
Montana Department of Environmental Quality

Air, Energy & Mining Division

Date: 10/31/2022

Randy Weimer
Stillwater Mining Company
East Boulder Operations
PO Box 789
Big Timber, MT 59011

Sent via email: RWeimer@Sibanyestillwater.com

RE: Final Permit Issuance for MAQP #2653-07

Dear Mr. Weimer:

Montana Air Quality Permit (MAQP) #2653-07 is deemed final as of October 29, 2022, by DEQ. This permit is for Stillwater Mining Company – East Boulder Operations, an underground mine and surface ore processing mill. All conditions of the Decision remain the same. Enclosed is a copy of your permit with the final date indicated.

For DEQ,

Julie A. Merkel
Permitting Services Section Supervisor
Air Quality Bureau
(406) 444-3626

Troy Burrows
Air Quality Scientist
Air Quality Bureau
(406) 444-1452

JM:rv
Enclosure

Montana Department of Environmental Quality
Air, Energy & Mining Division
Air Quality Bureau

Montana Air Quality Permit #2653-07

Stillwater Mining Company
East Boulder Operations
PO Box 789
Big Timber, MT 59011

October 29, 2022

MONTANA AIR QUALITY PERMIT

Issued To: Stillwater Mining Company
East Boulder Operations
P.O. Box 789
Big Timber, MT 59011

MAQP: #2653-07
Application Complete: 8/23/2022
Preliminary Determination Issued: 9/21/2022
Department's Decision Issued: 10/13/2022
Permit Final: 10/29/2022

A Montana Air Quality Permit (MAQP), with conditions, is hereby granted to Stillwater Mining Company – East Boulder Operations (Stillwater), pursuant to Sections 75-2-204 and 211 of the Montana Code Annotated (MCA), as amended, and Administrative Rules of Montana (ARM) 17.8.740, *et seq*., as amended, for the following:

Section I: Permitted Facilities

A. Plant Location

Stillwater's East Boulder Operations site is located approximately 11 miles south of McLeod and 32 miles south of Big Timber in Sections 2, 3, 11, 19, 26, and 34, Township 4 South, Range 13 East, in Sweet Grass County, MT.

B. Current Permit Action

On August 23, 2022, the Department of Environmental Quality (DEQ) received a request from Stillwater to modify MAQP 2653-06 to increase the potential emissions from combustion of propane from 400,000 gallons to 5,500,000 gallons per rolling 12-month period to allow for operational flexibility and heating capability. A permit condition has been established reflecting the updated site-wide propane capacity.

Section II: Conditions and Limitations

A. Emission Limitations

1. Nitrogen oxide (NOx) emissions from electrical generation shall be limited to 65 tons per year. This limitation shall be verified through manufacturer information on the generator(s) or by performance testing of the actual generator(s) to be used (ARM 17.8.749).

2. Stillwater shall not cause or authorize to be discharged into the atmosphere, from the Nordberg surface crusher, any visible emissions that exhibit an opacity of 10% or greater averaged over 6 consecutive minutes (ARM 17.8.340 and 40 CFR 60 Subpart LL).

3. Stillwater shall not cause or authorize to be discharged into the atmosphere from the stacker tower baghouse (controlling the crusher exit conveyor and

the stacker tower transfer conveyor) any stack emissions that (ARM 17.8.340, ARM 17.8.752, and 40 CFR 60, Subpart LL):

a. Contain particulate matter in excess of 0.05 grams/dscm; and

b. Exhibit greater than 7% opacity.

4. All process fugitive emissions are subject to an opacity limitation of 10% (ARM 17.8.340 and 40 CFR Part 60, Subpart LL).

5. Stillwater must use reasonable precautions to minimize fugitive dust with respect to all construction and operation activities related to the project. This would include watering and/or chemical stabilization of roads and work areas on an as-necessary basis and adequate control of any process or material handling operations. With respect to the mine access road, Stillwater Mining Company must work in consultation and coordination with Sweet Grass County and the U.S. Forest Service to minimize particulate emissions from their respective portions of the road (ARM 17.8.749).

6. Stillwater shall be limited to a maximum of 1,095,000 tons of ore production during any rolling 12-month time period (ARM 17.8.749).

7. Stillwater shall be limited to a maximum of 1,095,000 tons of waste rock handled during any rolling 12-month time period (ARM 17.8.752).

8. Stillwater shall be limited to a maximum of 132,000 tons of borrow material to be crushed during any rolling 12-month time period (ARM 17.8.752).

9. Stillwater shall be limited to a maximum of 1,095,000 tons of ore processed in the surface crushing system during any rolling 12-month time period (ARM 17.8.749).

10. Stillwater shall be limited to a combined maximum of 5,500,000 gallons of propane combusted by all capable sources at the facility during any rolling 12-month time period (ARM 17.8.749).

11. Stillwater shall comply with all applicable standards and limitations, and the reporting, recordkeeping and notification requirements contained in 40 CFR Part 60, Subpart LL (ARM 17.8.340 and 40 CFR Part 60).

12. Stillwater shall not cause or authorize to be discharged into the atmosphere any visible emissions from any source installed after November 23, 1968, that exhibit an opacity of 20% or greater averaged over 6 consecutive minutes (ARM 17.8.304).

13. Stillwater shall not cause or authorize to be discharged into the atmosphere any visible non-process fugitive emissions that exhibit an opacity of 20% or greater averaged over 6 consecutive minutes (ARM 17.8.308).

14. Stillwater shall not cause or authorize the use of any street, road, or parking lot without taking reasonable precautions to control emissions of airborne particulate matter (ARM 17.8.308 and ARM 17.8.749).

15. Stillwater shall treat all unpaved portions of the haul roads, access roads, and the general plant area with water and/or chemical dust suppressant as necessary to maintain compliance with the reasonable precautions limitation in Section II.A.14 (ARM 17.8.749).

16. Water and/or chemical dust control shall be available on site at all times, and operated as necessary, to maintain compliance with the opacity limitation in Section II.A.12 and Section II.A.13 (ARM 17.8.752).

17. The following list contains the required emission control technologies and techniques to be operated and maintained.

    a. Surface Screening of Borrow Material – covered conveyors and transfer points (ARM 17.8.752).

    b. Ore Apron Feeders – covered conveyors and transfer points (ARM 17.8.749).

    c. Dumping Waste Rock by Stacker – covered conveyors and transfer points (ARM 17.8.752).

    d. Underground Crusher – baghouse (ARM 17.8.749).

    e. Stacker Tower Transfer Conveyor – stacker tower baghouse (ARM 17.8.749).

    f. Surface Crushing of Ore and Waste Rock – covered transfer points and water spray and/or chemical dust suppression as necessary (ARM 17.8.752).

    g. Surface Crushing Operations Material Transfer – covered conveyors and transfer points (ARM 17.8.752).

    h. Crusher Exit Conveyor – covered transfer point with baghouse pickup intake to stacker tower baghouse (ARM 17.8.752).

B. Testing Requirements

1. The Nordberg crusher, the crusher exit conveyor (via stacker tower baghouse), the stacker tower conveyor (via stacker tower baghouse), and any other affected equipment under 40 CFR 60, Subpart LL, shall be tested and compliance demonstrated with the emission limitation contained in Section II.A.2, Section II.A.3, and Section II.A.4 within 60 days after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial start-up of the system. The test shall be conducted in accordance with the Montana Source Test Protocol and

Procedures Manual (ARM 17.8.105, ARM 17.8.340, and 40 CFR 60, Subpart LL).

2. All compliance source tests shall conform to the requirements of the Montana Source Test Protocol and Procedures Manual (ARM 17.8.106).

3. DEQ may require further testing (ARM 17.8.105).

C. Operational Reporting Requirements

1. Stillwater shall supply DEQ with annual production information for all emission points, as required by DEQ in the annual emission inventory request. The request will include, but is not limited to, all sources of emissions identified in the emission inventory contained in the permit analysis.

   Production information shall be gathered on a calendar-year basis and submitted to DEQ by the date required in the emission inventory request. Information shall be in the units required by DEQ. This information may be used to calculate operating fees, based on actual emissions from the facility, and/or to verify compliance with permit limitations (ARM 17.8.505). Stillwater shall submit the following information annually to DEQ by March 1 of each year; the information may be submitted along with the annual emission inventory (ARM 17.8.505).

   a. The amount of ore and waste handled (annual basis and the maximum daily amount),

   b. A summary of dust control activities, including types and amounts of chemical stabilizers used, application areas, and general watering schedules where applicable (the summary should include dust suppression activities on the U.S. Forest Service and county portions of the access road), and

   c. The status of employee busing.

2. Stillwater shall notify DEQ of any construction or improvement project conducted, pursuant to ARM 17.8.745, that would ***include the addition of a new emissions unit***, change in control equipment, stack height, stack diameter, stack flow, stack gas temperature, source location, or fuel specifications, or would result in an increase in source capacity above its permitted operation. The notice must be submitted to DEQ, in writing, 10 days prior to startup or use of the proposed de minimis change, or as soon as reasonably practicable in the event of an unanticipated circumstance causing the de minimis change and must include the information requested in ARM 17.8.745(l)(d) (ARM 17.8.745).

3. All records compiled in accordance with this permit must be maintained by Stillwater as a permanent business record for at least 5 years following the date of the measurement, must be available at the plant site for inspection by

DEQ, and must be submitted to DEQ upon request. These records may be stored at a location other than the plant site upon approval by DEQ (ARM 17.8.749).

4. Stillwater shall document, by month, the total tons of ore processed in the surface crushing system, tons of waste rock handled, and the total tons of borrow material to be crushed. By the 25th of each month, Stillwater shall total each of these values during the previous 12 months to verify compliance with the limitation in Section II.A.6, II.A.7, and II.A.8. A written report of the compliance verification shall be submitted along with the annual emissions inventory (ARM 17.8.749).

5. Stillwater shall document, by month, the total gallons of propane combusted by all capable sources at the facility. By the 25th of each month, Stillwater shall total the propane consumption during the previous 12 months to verify compliance with the limitation in Section II.A.10. A written report of the compliance verification shall be submitted along with the annual emissions inventory (ARM 17.8.749).

6. Records of the generator(s) operating hours, loads, and fuel usage shall be maintained on site.

7. Stillwater shall provide DEQ with written notification of the following dates within the specified time periods as required for 40 CFR Part 60, Subpart LL affected facilities including, but not limited to, the surface Nordberg crusher and the crusher exit conveyor (ARM 17.8.340 and 40 CFR 60, Subpart LL).

    a. Commencement of construction within 30 days after commencement of construction,

    b. Anticipated start-up date between 30 and 60 days prior to anticipated start-up date, and

    c. Actual start-up date within 15 days after the actual start-up date.

SECTION III: General Conditions

A. Inspection – Stillwater shall allow DEQ's representatives access to the source at all reasonable times for the purpose of making inspections or surveys, collecting samples, obtaining data, auditing any monitoring equipment such as Continuous Emission Monitoring Systems (CEMS) or Continuous Emission Rate Monitoring Systems (CERMS), or observing any monitoring or testing, and otherwise conducting all necessary functions related to this permit.

B. Waiver – The permit and the terms, conditions, and matters stated herein shall be deemed accepted if Stillwater fails to appeal as indicated below.

C. Compliance with Statutes and Regulations – Nothing in this permit shall be construed as relieving Stillwater of the responsibility for complying with any applicable federal or Montana statute, rule, or standard, except as specifically provided in ARM 17.8.740, *et seq.* (ARM 17.8.756).

D. Enforcement – Violations of limitations, conditions and requirements contained herein may constitute grounds for permit revocation, penalties, or other enforcement action as specified in Section 75-2-401, *et seq*., MCA.

E. Appeals – Any person or persons jointly or severally adversely affected by DEQ's decision may request, within 15 days after DEQ renders its decision, upon affidavit setting forth the grounds therefor, a hearing before the Board of Environmental Review (Board). A hearing shall be held under the provisions of the Montana Administrative Procedures Act. The filing of a request for a hearing does not stay DEQ's decision, unless the Board issues a stay upon receipt of a petition and a finding that a stay is appropriate under Section 75-2-211(11)(b), MCA. The issuance of a stay on a permit by the Board postpones the effective date of DEQ's decision until conclusion of the hearing and issuance of a final decision by the Board. If a stay is not issued by the Board, DEQ's decision on the application is final 16 days after DEQ's decision is made.

F. Permit Inspection – As required by ARM 17.8.755, Inspection of Permit, a copy of the air quality permit shall be made available for inspection by DEQ at the location of the source.

G. Permit Fee – Pursuant to Section 75-2-220, MCA, failure to pay the annual operation fee by Stillwater may be grounds for revocation of this permit, as required by that section and rules adopted thereunder by the Board.

H. Duration of Permit – Construction or installation must begin, or contractual obligations entered into that would constitute substantial loss within 3 years of permit issuance and proceed with due diligence until the project is complete or the permit shall expire (ARM 17.8.762).

Montana Air Quality Permit (MAQP) Analysis
Stillwater Mining Company – East Boulder Operations
MAQP #2653-07

I. Introduction/Process Description

Stillwater Mining Company – East Boulder Operations (Stillwater) owns and operates an underground mine, an ore processing mill, a surface min/mill support complex, a tailings retention impoundment and other secondary facilities. The facility is located approximately 11 miles south of McLeod and 32 miles south of Big Timber in Sections 2, 3, 11, 19, 26, and 34, Township 4 South, Range 13 East, in Sweet Grass County, MT, and is known as the East Boulder Mine.

A. Permitted Equipment

Point #	**Emitting Unit/Activity**
1/01	Disturbed Areas 1a-1h
2	Mine Ventilation Exhaust
3	Coarse Ore Dumping @ Trestle
5	Waste Rock Dumping @ Trestle
7/01	Haul Roads >50T
7/02	Haul Trucks & Loaders <50T
7/03	Light Vehicles
10	Diesel Generators (3, Surface)
12	Propane (Surface)
13	Topsoil Removal
14	Topsoil Loading/Dumping/Screening
15	Bulk Loading (Borrow)
19	Waste Loading (from Trestle Drop into Bench Stockpile by Loader)
20/01	Ore Load, Haul, Dump Ore into Grizzly by Loader
20/02	Ore Loading (from Trestle Drop into Bench Stockpile by Loader)
21	Surface Crushing Ore (Nordberg Crusher)
22/01	Ore Conveyed from Apron Feed to Mill
22/02	Ore Conveyed from Crusher to Stacker
23/01	Native Borrow @ Tailings Embankment
23/02	Borrow material removal
23/03	Waste from Stockpile Below Stacker to Tailings Embankment
23/04	Waste @ Tailings Embankment (Spreading)
24/01	Crushing Bedding Material
24/02	Conveying Bedding Material
24/03	Material Handling - Bedding Material
24/04	Screening - Bedding Material
26	Pile Forming - Radial Stacker
27/01	Cement Batch Plant - Cement Unloading - Silo
27/02	Dumping Gravel into Stockpiles
27/03	Dumping Sand into Stockpiles
27/04	Gravel Mixer Loading to Truck
27/05	Sand Mixer Loading to Truck

Point #	Emitting Unit/Activity
27/06	Gravel Transfer to Bin
27/07	Sand Transfer to Bin
27/08	Weigh Hopper Unloading

B. Source Description

Stillwater's East Boulder Mine is an underground platinum/palladium mine and milling site. All ore and waste rock produced from the mine is transported to the surface via the twin adits located adjacent to the ore processing facilities. The ore is processed through a surface crusher, a wet semi-autogenous (SAG) grinding mill, a wet ball mill, followed by concentration in a bulk sulfide floatation process. The concentrate is shipped from the project site by truck for further processing in Stillwater's Columbus smelter and base metals refinery. The majority of the surface facilities are located adjacent to the mine access adits in the East Boulder River valley. Other surface construction is located on Stillwater's patented or mineral load claims.

C. Permit History

MAQP #2670 was issued on April 1, 1991, for an underground exploration project and related surface facilities at the East Boulder Project. Stillwater PGM Resources applied for an air quality permit for exploration activities on November 7, 1990; the application was deemed complete on December 3, 1990. On February 4, 1991, Stillwater PGM Resources submitted a revision to the application. The revision included proposing the use of a generic electrical generation system to allow some flexibility in the type and number of generators to be used. Approximately 3.5 megawatts of power would be required. The generator(s) could be propane-fired or diesel-fired with add-on emission controls or possibly a combination of generators. The limiting factor was NO_x emissions from the system and the ability to comply with the Class II Prevention of Significant Deterioration (PSD) NO_2 increment. Based on dispersion modeling results, a total of 65 tons per year of NO_x emissions from the generator(s), in conjunction with the other project-related NO_x emissions, was allowable.

PSD regulations did not directly apply to the project because potential emissions were less than 250 tons per year. Therefore, the source was not a major stationary source. However, the baseline date was triggered for sulfur dioxide (SO_2) and nitrogen dioxide (NO_2); these pollutants consume allowable PSD increment. Modeling was conducted to determine that the impacts of NO_2 and SO_2 emissions were small enough that modeling was not required to be performed.

MAQP#2653 for the underground platinum/palladium mining operation and ore-processing facilities was issued on August 19, 1992. PSD permit requirements were not applicable because estimated emissions of any pollutant were less than 250 tons per year. Although the PSD regulations did not directly apply, a demonstration was required to verify compliance with the PSD NO_2 increment. With respect to maximum allowable increases (PSD increments), only NO_2 and SO_2 emissions from this project would consume increment because the baseline is triggered for these two pollutants, but not for particulate matter. Under the Montana PSD regulations,

particulate baseline areas are defined as the impact areas of major sources, while the baseline is defined as the entire State for NO_2 and SO_2. There are no particulate baseline areas that would be impacted by this project. Therefore, there would be no increment consumption (particulate increases would become part of the baseline).

Stillwater applied for **MAQP #2653-01** on November 11, 1995. The application was deemed complete on January 23, 1996. The application proposed changing the on-site electrical generation system. Based on manufacturer supplied data, there would be an increase in allowable NO_x emissions of 176 tons per year and a decrease in sulfur dioxide of 43 tons per year. The two permits were proposed to be consolidated as part of the permitting action. On May 14, 1996, a draft preliminary determination was issued. The permit was not issued due to EPA's interpretation that all NO_x emissions, including those from minor sources, consume PSD increments. Stillwater withdrew the application on July 7, 1999.

On October 15, 1999, **MAQP #2653-02** was issued as a modification. The request proposed: 1) changing the control device specified on the concentrate dryer from a wet scrubber to a baghouse; 2) modifying the ambient air quality monitoring requirements; 3) clarifying that crushing and material handling of bedding material is permitted; and, 4) changing the permit name to Stillwater – East Boulder Operations.

The Department of Environmental Quality (DEQ) agreed to change the control device on the concentrate dryer from a wet scrubber to a baghouse. The emission limitation from the concentrate dryer did not change; therefore, the dryer's allowable emission rate would not increase as a result of changing the control device specification.

Stillwater proposed to change the ambient air quality monitoring by 1) reducing the sampling frequency from every 3rd day year-round to every 3rd day May through October and every 6th day November through April; 2) waiving the requirement to operate a collocated PM-10 sampler; and 3) eliminating the requirement for trace element analyses. DEQ agreed to reduce the sampling at the East Boulder Operations. Stillwater did not operate collocated sampling at any other site; therefore, collocated sampling is required at the East Boulder site. DEQ agreed to drop the trace element analyses because there were no enforceable standards to compare the values to and the ore and waste rock at the East Boulder Operations were similar to the Nye Operations, which did not demonstrate any problems.

Neither of Stillwater's air quality permits (MAQP #2653-00 or MAQP #2670) clearly specify that crushing and material handling, in conjunction with construction activities, is covered in the permits. However, DEQ's files include correspondence from Stillwater requesting this activity be included in MAQP #2653-00 before it was issued. Based on that correspondence, DEQ was aware that Stillwater intended to conduct crushing and material handling in conjunction with construction activities. This crushing and material handling was separate from the crushing and material handling for the ore; therefore, the activity was covered in MAQP #2653-00. Crushing and material handling, in conjunction with construction activities at the facility, is covered in MAQP #2653-02. **MAQP #2653-02** replaced MAQP #2653-00 and MAQP #2670-00.

Stillwater submitted an application for the modification of MAQP #2653-02. The proposed modification included an increase in the amount of waste rock to be handled at the operation; changes in equipment for ore and waste handling; an increase in the acreage for soil stock piles and disturbed areas; and a change in the language of the existing permit regarding ambient air monitoring. **MAQP #2653-03** replaced MAQP #2653-02.

Stillwater requested an increase in the maximum amount of waste rock to be handled, from 350,000 tons per year to 730,000 tons during any rolling 12-month time period. Also, the amount of waste rock does not include the borrow material to be crushed (132,000 tpy). The increase in the waste rock handled affected the particulate emissions from the stacking, hauling, and spreading of material. Stillwater submitted modeling to demonstrate compliance with the ambient standards and the limitations were changed. Any proposed increase above these levels would require a permit modification because these numbers were used in developing the emission inventory and dispersion modeling for the facility.

The second proposed action included three conveyor transfers on the ore/waste stacker and three conveyor transfer points from the apron feeder to the SAG mill. The action was approved, and a complete list of emission controls was placed in the permit. These controls were used in the emission inventory calculations.

The third request was to increase the soil stockpile from 5 acres to 19 acres and the disturbed area from 150 to 200 acres. Also, Stillwater constructed and implemented the twin adit proposal that was approved by the Agencies in the supplemental EIS.

Stillwater constructed an overhead power line to supply the main source of electric power. On-site electrical generators are used for emergencies only. MAQP #2653-02 contained notification requirements that stated, "Prior to the commencement of operation, the recipient must submit to DEQ a description of the electrical generation system to be used, including any emission data available." This condition was removed.

Stillwater also requested clarification of the language in the Ambient Air Monitoring Plan that requires Stillwater to begin monitoring at the time the facility enters a production status. **MAQP #2653-03** replaced MAQP #2653-02.

On February 15, 2001, Stillwater submitted a complete permit application for proposed changes to MAQP #2653-03. As part of the current permit action, Stillwater proposed to construct and operate a surface ore crushing system and associated ore handling facilities. The surface crushing system was to be used in place of the previously permitted underground crushing system until the underground crusher was built and ready for installation. After completion of the underground crushing system, Stillwater will maintain the surface crushing system for emergency use and back-up operations.

In addition, Stillwater proposed to remove the concentrate dryer and all associated requirements from the air quality permit. The concentrate dryer was to be constructed at the East Boulder site; rather, it was constructed and put into operation at the Stillwater Mining Company – Columbus facility. **MAQP #2653-04** replaced permit #2653-03.

On July 12, 2006, with an additional submittal on September 22, 2006, Stillwater notified DEQ of various changes to the facility in accordance with the provisions contained in ARM 17.8.745 (de minimis rule) and also requested an administrative permit amendment to the existing permit under the provisions contained in ARM 17.8.764(1)(b). Specifically, Stillwater proposed the following:

- Addition of two new mine portal heaters under the de minimis rule,
- Removal of the daily ore production limit of 3500 tons per day and maintenance of the annual ore production limit of 730,000 tons per year under an administrative amendment,
- Removal of the ambient PM_{10} air quality monitoring requirements under an administrative amendment, and
- A change to the emission inventory contained in the permit analysis to reflect updated emission factors applicable to facility operations.

Because potential emissions from two new mine portal heaters were less than 15 tons per year (cumulative), the project met the criteria for a de minimis change. Because removal of the ton per day ore production limit would not result in any annual increase in allowable emissions, the proposed change was accomplished under an administrative amendment. Further, through historic ambient air quality monitoring activities, Stillwater demonstrated to DEQ's satisfaction that cessation of the applicable ambient PM_{10} monitoring program was appropriate. Finally, through source testing, Stillwater demonstrated to DEQ's satisfaction that the emission factors previously used to estimate emissions from facility mine ventilation exhaust were no longer appropriate. The existing permit was amended to include the above-cited changes. **MAQP #2653-05** replaced MAQP #2653-04.

On March 29, 2018, DEQ received a request from Stillwater to modify MAQP 2653-05 to increase the annual ore production limitation, increase the annual waste rock limitation, and classify the mine ventilation source as a fugitive source. Stillwater is requesting an annual ore production increase from 730,000 tons of ore to 1,095,000 tons of ore. This increase is equal to an average daily production rate of 3,000 tons per day. Previous permits have determined that a rate of 3,500 or less should be maintained to ensure there are no impacts to ambient air quality standards.

The increase in ore production will be handled with the currently permitted equipment; there will be no new equipment added as part of this action. However, certain activities and units will have an increase in operation to accommodate the increased throughput. These include:

- #3 Coarse Ore Dumpling at Trestle
- #5 Waste Rock Dumping at Trestle
- #7/01 Haul Roads >50T
- #7/02 Haul Trucks & Loaders <50T
- #7/03 Light Vehicles
- #19 Waste Loading
- #20/01 Load, Haul, Dump Ore into Grizzly by Loader
- #21 Surface Crushing Ore
- #22/01 Ore Conveyed from Apron Feed to Mill

- #22/02 Ore Conveyed from Crusher to Stacker
- #23/02 Borrow material removal
- #23/03 Waste at Tailings Embankment
- #26 Pile Forming – Radial Stacker

MAQP #2653-06 replaced MAQP #2653-05.

D. Current Permit Action

On August 23, 2022, DEQ received a request from Stillwater to modify MAQP 2653-06 to increase the potential emissions from combustion of propane from 400,000 gallons to 5,500,000 gallons per rolling 12-month period to allow for operational flexibility and heating capability. A permit condition has been established reflecting the updated site-wide propane capacity. **MAQP 2653-07** replaces MAQP 2653-06.

E. Response to Public Comments

Person/Group Commenting	Permit Reference	Comment	Department Response
Stillwater Mining Company	Section IV, facility wide CO emissions	Shows as 69.38 tpy but should be 71.18 tpy.	We agree – this has been corrected.
Stillwater Mining Company	Section VII	Section VII of the current permit is not in the new permit.	This section has been moved to the Environmental Assessment. The numbering has been corrected.

F. Additional Information

Additional information, such as applicable rules and regulations, Best Available Control Technology (BACT)/Reasonably Available Control Technology (RACT) determinations, air quality impacts, and environmental assessments, is included in the analysis associated with each change to the permit.

II. Applicable Rules and Regulations

The following are partial explanations of some applicable rules and regulations that apply to the facility. The complete rules are stated in the Administrative Rules of Montana (ARM) and are available, upon request, from the Department of Environmental Quality (DEQ). Upon request, DEQ will provide references for location of complete copies of all applicable rules and regulations or copies where appropriate.

A. ARM 17.8, Subchapter 1 – General Provisions, including but not limited to:

1. ARM 17.8.101 Definitions. This rule includes a list of applicable definitions used in this chapter, unless indicated otherwise in a specific subchapter.

2. ARM 17.8.105 Testing Requirements. Any person or persons responsible for the emission of any air contaminant into the outdoor atmosphere shall, upon written request of DEQ, provide the facilities and necessary equipment (including instruments and sensing devices) and shall conduct tests, emission or ambient, for such periods of time as may be necessary using methods approved by DEQ.

3. ARM 17.8.106 Source Testing Protocol. The requirements of this rule apply to any emission source testing conducted by DEQ, any source or other entity as required by any rule in this chapter, or any permit or order issued pursuant to this chapter, or the provisions of the Clean Air Act of Montana, 75-2-101, *et seq*., Montana Code Annotated (MCA).

   Stillwater shall comply with the requirements contained in the Montana Source Test Protocol and Procedures Manual, including, but not limited to, using the proper test methods, and supplying the required reports. A copy of the Montana Source Test Protocol and Procedures Manual is available from DEQ upon request.

4. ARM 17.8.110 Malfunctions. (2) DEQ must be notified promptly by telephone whenever a malfunction occurs that can be expected to create emissions in excess of any applicable emission limitation or to continue for a period greater than 4 hours.

5. ARM 17.8.111 Circumvention. (1) No person shall cause or permit the installation or use of any device or any means that, without resulting in reduction of the total amount of air contaminant emitted, conceals or dilutes an emission of air contaminant that would otherwise violate an air pollution control regulation. (2) No equipment that may produce emissions shall be operated or maintained in such a manner as to create a public nuisance.

B. ARM 17.8, Subchapter 2 – Ambient Air Quality, including, but not limited to the following:

1. ARM 17.8.204 Ambient Air Monitoring
2. ARM 17.8.210 Ambient Air Quality Standards for Sulfur Dioxide
3. ARM 17.8.211 Ambient Air Quality Standards for Nitrogen Dioxide
4. ARM 17.8.212 Ambient Air Quality Standards for Carbon Monoxide
5. ARM 17.8.213 Ambient Air Quality Standard for Ozone
6. ARM 17.8.214 Ambient Air Quality Standard for Hydrogen Sulfide
7. ARM 17.8.220 Ambient Air Quality Standard for Settled Particulate Matter
8. ARM 17.8.221 Ambient Air Quality Standard for Visibility
9. ARM 17.8.222 Ambient Air Quality Standard for Lead
10. ARM 17.8.223 Ambient Air Quality Standard for PM_{10}
11. ARM 17.8.230 Fluoride in Forage

Stillwater must maintain compliance with the applicable ambient air quality standards.

C. ARM 17.8, Subchapter 3 – Emission Standards, including, but not limited to:

1. ARM 17.8.304 Visible Air Contaminants. This rule requires that no person may cause or authorize emissions to be discharged into the outdoor atmosphere from any source installed after November 23, 1968, that exhibit an opacity of 20% or greater averaged over 6 consecutive minutes.

2. ARM 17.8.308 Particulate Matter, Airborne. (1) This rule requires an opacity limitation of less than 20% for all fugitive emission sources and that reasonable precautions be taken to control emissions of airborne particulate matter. (2) Under this rule, Stillwater shall not cause or authorize the use of any street, road, or parking lot without taking reasonable precautions to control emissions of airborne particulate matter.

3. ARM 17.8.309 Particulate Matter, Fuel Burning Equipment. This rule requires that no person shall cause, allow, or permit to be discharged into the atmosphere particulate matter caused by the combustion of fuel in excess of the amount determined by this rule.

4. ARM 17.8.310 Particulate Matter, Industrial Process. This rule requires that no person shall cause, allow, or permit to be discharged into the atmosphere particulate matter in excess of the amount set forth in this rule.

5. ARM 17.8.322 Sulfur Oxide Emissions--Sulfur in Fuel. This rule requires that no person shall burn liquid, solid, or gaseous fuel in excess of the amount set forth in this rule.

6. ARM 17.8.340 Standard of Performance for New Stationary Sources and Emission Guidelines for Existing Sources. This rule incorporates, by reference, 40 CFR Part 60, Standards of Performance for New Stationary Sources (NSPS). This facility is an NSPS affected source because it meets the definition of any NSPS subpart defined in 40 CFR Part 60.

    a. 40 CFR 60, Subpart A – General Provisions apply to all equipment or facilities subject to an NSPS Subpart as listed below:

    b. 40 CFR 60, Subpart LL - Metallic Mineral Processing Plants requires opacity limitations of 10% on process fugitive emissions, 7% on baghouse stack emissions, and a stack particulate emission limitation of 0.05 grams per dry standard cubic meter. Because Stillwater is a platinum/palladium mining and ore processing facility, Stillwater is subject to Subpart LL. All process operations at this facility are affected facilities, unless otherwise excluded in 40 CFR 60, Subpart LL.

D. ARM 17.8, Subchapter 5 – Air Quality Permit Application, Operation, and Open Burning Fees, including, but not limited to:

1. ARM 17.8.504 Air Quality Permit Application Fees. This rule requires that an applicant submit an air quality permit application fee concurrent with the submittal of an air quality permit application. A permit application is incomplete until the proper application fee is paid to DEQ. Stillwater

submitted the appropriate permit application fee for the current permit action.

2. ARM 17.8.505 Air Quality Operation Fees. An annual air quality operation fee must, as a condition of continued operation, be submitted to DEQ by each source of air contaminants holding an air quality permit (excluding an open burning permit) issued by DEQ. The air quality operation fee is based on the actual or estimated actual amount of air pollutants emitted during the previous calendar year.

   An air quality operation fee is separate and distinct from an air quality permit application fee. The annual assessment and collection of the air quality operation fee, described above, shall take place on a calendar-year basis. DEQ may insert into any final permit issued after the effective date of these rules, such conditions as may be necessary to require the payment of an air quality operation fee on a calendar-year basis, including provisions that prorate the required fee amount.

E. ARM 17.8, Subchapter 7 – Permit, Construction, and Operation of Air Contaminant Sources, including, but not limited to:

1. ARM 17.8.740 Definitions. This rule is a list of applicable definitions used in this chapter, unless indicated otherwise in a specific subchapter.

2. ARM 17.8.743 Montana Air Quality Permits--When Required. This rule requires a person to obtain an air quality permit or permit modification to construct, modify, or use any air contaminant sources that have the potential to emit (PTE) greater than 25 tons per year of any pollutant. Stillwater has a PTE greater than 25 tons per year of particulate matter with an aerodynamic diameter of 10 microns or less (PM_{10}), oxides of nitrogen (NO_x), and carbon monoxide (CO); therefore, an air quality permit is required.

3. ARM 17.8.744 Montana Air Quality Permits--General Exclusions. This rule identifies the activities that are not subject to the Montana Air Quality Permit program.

4. ARM 17.8.745 Montana Air Quality Permits--Exclusion for De Minimis Changes. This rule identifies the de minimis changes at permitted facilities that do not require a permit under the Montana Air Quality Permit Program.

5. ARM 17.8.748 New or Modified Emitting Units--Permit Application Requirements. (1) This rule requires that a permit application be submitted prior to installation, modification, or use of a source. Stillwater submitted the required permit application for the current permit action. (7) This rule requires that the applicant notify the public by means of legal publication in a newspaper of general circulation in the area affected by the application for a permit. Stillwater submitted an affidavit of publication of public notice for the August 18, 2022 issue of the *Stillwater County News*, a newspaper of general circulation in the Town of Big Timber in Stillwater County, as proof of compliance with the public notice requirements.

6. ARM 17.8.749 Conditions for Issuance or Denial of Permit. This rule requires that the permits issued by DEQ must authorize the construction and operation of the facility or emitting unit subject to the conditions in the permit and the requirements of this subchapter. This rule also requires that the permit must contain any conditions necessary to assure compliance with the Federal Clean Air Act (FCAA), the Clean Air Act of Montana, and rules adopted under those acts.

7. ARM 17.8.752 Emission Control Requirements. This rule requires a source to install the maximum air pollution control capability that is technically practicable and economically feasible, except that BACT shall be utilized. The required BACT analysis is included in Section III of this permit analysis.

8. ARM 17.8.755 Inspection of Permit. This rule requires that air quality permits shall be made available for inspection by DEQ at the location of the source.

9. ARM 17.8.756 Compliance with Other Requirements. This rule states that nothing in the permit shall be construed as relieving Stillwater of the responsibility for complying with any applicable federal or Montana statute, rule, or standard, except as specifically provided in ARM 17.8.740, *et seq*.

10. ARM 17.8.759 Review of Permit Applications. This rule describes DEQ's responsibilities for processing permit applications and making permit decisions on those permit applications that do not require the preparation of an environmental impact statement.

11. ARM 17.8.762 Duration of Permit. An air quality permit shall be valid until revoked or modified, as provided in this subchapter, except that a permit issued prior to construction of a new or modified source may contain a condition providing that the permit will expire unless construction is commenced within the time specified in the permit, which in no event may be less than 1 year after the permit is issued.

12. ARM 17.8.763 Revocation of Permit. An air quality permit may be revoked upon written request of the permittee, or for violations of any requirement of the Clean Air Act of Montana, rules adopted under the Clean Air Act of Montana, the FCAA, rules adopted under the FCAA, or any applicable requirement contained in the Montana State Implementation Plan (SIP).

13. ARM 17.8.764 Administrative Amendment to Permit. An air quality permit may be amended for changes in any applicable rules and standards adopted by the Board of Environmental Review (Board) or changed conditions of operation at a source or stack that do not result in an increase of emissions as a result of those changed conditions. The owner or operator of a facility may not increase the facility's emissions beyond permit limits unless the increase meets the criteria in ARM 17.8.745 for a de minimis change not requiring a permit, or unless the owner or operator applies for and receives another permit in accordance with ARM 17.8.748, ARM 17.8.749, ARM 17.8.752, ARM 17.8.755, and ARM 17.8.756, and with all applicable requirements in ARM Title 17, Chapter 8, Subchapters 8, 9, and 10.

14. ARM 17.8.765 Transfer of Permit. This rule states that an air quality permit may be transferred from one person to another if written notice of intent to transfer, including the names of the transferor and the transferee, is sent to DEQ.

F. ARM 17.8, Subchapter 8 – Prevention of Significant Deterioration of Air Quality, including, but not limited to:

1. ARM 17.8.801 Definitions. This rule is a list of applicable definitions used in this subchapter.

2. ARM 17.8.818 Review of Major Stationary Sources and Major Modifications--Source Applicability and Exemptions. The requirements contained in ARM 17.8.819 through ARM 17.8.827 shall apply to any major stationary source and any major modification, with respect to each pollutant subject to regulation under the FCAA that it would emit, except as this subchapter would otherwise allow.

   This facility is not a major stationary source because this facility is not a listed source and the facility's PTE is below 250 tons per year of any pollutant (excluding fugitive emissions).

G. ARM 17.8, Subchapter 12 – Operating Permit Program Applicability, including, but not limited to:

1. ARM 17.8.1201 Definitions. (23) Major Source under Section 7412 of the FCAA is defined as any source having:
   a. PTE > 100 tons/year of any pollutant;

   b. PTE > 10 tons/year of any one hazardous air pollutant (HAP), PTE > 25 tons/year of a combination of all HAPs, or lesser quantity as DEQ may establish by rule; or

   c. PTE > 70 tons/year of particulate matter with an aerodynamic diameter of 10 microns or less (PM_{10}) in a serious PM_{10} nonattainment area.

2. ARM 17.8.1204 Air Quality Operating Permit Program. (1) Title V of the FCAA amendments of 1990 requires that all sources, as defined in ARM 17.8.1204(1), obtain a Title V Operating Permit. In reviewing and issuing MAQP #2653-07 for Stillwater, the following conclusions were made:

   a. The facility's PTE is less than 100 tons/year for any pollutant.

   b. The facility's PTE is less than 10 tons/year for any one HAP and less than 25 tons/year for all HAPs.

   c. This source is not located in a serious PM_{10} nonattainment area.

   d. This facility is subject to a current NSPS (40 CFR 60, Subpart LL).

e. This facility is not subject to any current NESHAP.

f. This source is not a Title IV affected source, or a solid waste combustion unit.

g. This source is not an EPA designated Title V source.

Based on these facts, DEQ determined that Stillwater will be a minor source of emissions as defined under Title V. However, if minor sources subject to NSPS are required to obtain a Title V Operating Permit, Stillwater will be required to obtain a Title V Operating Permit.

III. BACT Determination

ARM 17.8.752 requires the owner or operator of a new or modified source to install the maximum air pollution control capability that is technically practicable and economically feasible for each emitting unit. The rule requires that best available control technology (BACT) be utilized.

Stillwater is proposing to increase the propane combustion from 400,000 to 5,500,000 gallons per rolling 12-month period. Stillwater proposes following good combustion practices as BACT for the heaters associated with the propane combustion and use of clean fuel. The proposed BACT conforms to previous BACT determinations made by DEQ for similar propane-fired units.

IV. Emission Inventory

Stillwater Mining Company
Underground platinum/palladium mine, ore processing plant, and tailings disposal facility
East Boulder Operations

Potential Emissions Summary - Particulate Matter									
		Uncontrolled Emissions			Control	Percent	Controlled Emissions		
Point #	Emitting Unit	PM	PM_{10}	$PM_{2.5}$			PM	PM_{10}	$PM_{2.5}$
		(tpy)	(tpy)	(tpy)			(tpy)	(tpy)	(tpy)
1/01	Disturbed Areas 1a-1h	3.82	2.25	0.25	State Derived	30%-100%	3.82	2.25	0.25
2	Mine Ventilation Exhaust	33.47	12.55	4.18	None		33.47	12.55	4.18
3	Coarse Ore Dumping @ Trestle	5.48	2.19	1.75	Water spray as needed	50%	2.74	1.10	0.88
5	Waste Rock Dumping @ Trestle	5.48	2.19	1.75	Water spray as needed	50%	2.74	1.10	0.88
7/01	Haul Roads >50T	96.62	24.62	2.46	Water spray and/or chemical dust suppressant as necessary	85%	14.49	3.69	0.37

Potential Emissions Summary - Particulate Matter									
		Uncontrolled Emissions			Control	Percent	Controlled Emissions		
Point #	**Emitting Unit**	**PM**	**PM_{10}**	**$PM_{2.5}$**			**PM**	**PM_{10}**	**$PM_{2.5}$**
		(tpy)	**(tpy)**	**(tpy)**			**(tpy)**	**(tpy)**	**(tpy)**
7/02	Haul Trucks & Loaders <50T	86.09	21.94	2.19	Water spray and/or chemical dust suppressant as necessary	85%	12.91	3.29	0.33
7/03	Light Vehicles	38.89	9.91	0.99	Water spray and/or chemical dust suppressant as necessary	85%	5.83	1.49	0.15
10	Diesel Generators (3, Surface)	0.25	0.20	0.20	None		0.25	0.20	0.20
12	Propane (Surface)	1.93	1.93	1.93	Good combustion practices		1.93	1.93	1.93
13	Topsoil Removal	1.18	0.59	0.18	None		1.18	0.59	0.18
14	Topsoil Loading/Dumping/ Screening	1.18	0.59	0.18	None		1.18	0.59	0.18
15	Bulk Loading (Borrow)	0.03	0.01	Unknown	None		0.03	0.01	Unknown
19	Waste Loading (from Trestle Drop into Bench Stockpile by Loader)	10.95	5.48	1.64	Water spray as necessary	50%	5.48	2.74	0.82
20/01	Ore Load, Haul, Dump Ore into Grizzly by Loader	10.95	5.48	1.64	Water spray as necessary, minimize fall distance	50%	5.48	2.74	0.82
20/02	Ore Loading (from Trestle Drop into Bench Stockpile by Loader)	10.95	5.48	1.64	Water spray as necessary, minimize fall distance	50%	5.48	2.74	0.82
21	Surface Crushing Ore (Nordberg Crusher)	27.38	10.95	8.21	Fabric filter	99%	0.27	0.11	0.08
22/01	Ore Conveyed from Apron Feed to Mill	10.95	4.38	1.64	Enclosed	67%	3.61	1.45	0.54
22/02	Ore Conveyed from Crusher to Stacker	10.95	4.38	1.64	Enclosed, fabric filter	99%	0.11	0.04	0.02
23/01	Native Borrow @ Tailings Embankment	6.00	2.00	0.40	None		6.00	2.00	0.40
23/02	Borrow material removal	5.00	2.50	0.75	None		5.00	2.50	0.75
23/03	Waste from Stockpile Below Stacker to Tailings Embankment	10.95	4.38	1.64	Water spray as necessary, minimize fall distance	50%	5.48	2.19	0.82

Potential Emissions Summary - Particulate Matter									
		Uncontrolled Emissions			Control	Percent	Controlled Emissions		
Point #	**Emitting Unit**	**PM**	**PM_{10}**	**$PM_{2.5}$**			**PM**	**PM_{10}**	**$PM_{2.5}$**
		(tpy)	**(tpy)**	**(tpy)**			**(tpy)**	**(tpy)**	**(tpy)**
23/04	Waste @ Tailings Embankment (Spreading)	5.48	2.19	0.44	Water spray as necessary, minimize fall distance	50%	2.74	1.10	0.22
24/01	Crushing Bedding Material	0.0027	0.0012	0.0001	None		0.0027	0.0012	0.0001
24/02	Conveying Bedding Material	0.01	0.002	0.000	Enclosed, water spray as necessary	50%	0.00	0.001	0.000
24/03	Material Handling - Bedding Material	0.01	0.002	0.000	None		0.01	0.002	0.000
24/04	Screening - Bedding Material	0.00006	0.00002	0.00002	Wet Material		0.00006	0.00002	0.00002
26	Pile Forming - Radial Stacker	5.48	2.19	0.11	Water spray as necessary, minimize fall distance	50%	2.74	1.10	0.05
27/01	Cement Batch Plant - Cement Unloading - Silo	0.05	0.04	0.04	Fabric filter	100%	0.0001	0.0000	0.0000
27/02	Dumping Gravel into Stockpiles	0.0020	0.0009	0.0009	None		0.0020	0.0009	0.0009
27/03	Dumping Sand into Stockpiles	0.0005	0.0002	0.0002	None		0.0005	0.0002	0.0002
27/04	Gravel Mixer Loading to Truck	0.0020	0.0009	0.0009	None		0.0020	0.0009	0.0009
27/05	Sand Mixer Loading to Truck	0.0005	0.0002	0.0002	None		0.0005	0.0002	0.0002
27/06	Gravel Transfer to Bin	0.0020	0.0009	0.0009	None		0.0005	0.0002	0.0009
27/07	Sand Transfer to Bin	0.0005	0.0002	0.0002	None		0.0020	0.0009	0.0002
27/08	Weigh Hopper Unloading	0.0548	0.0353	0.0353	None		0.0548	0.0353	0.0353
	TOTAL	**389.56**	**128.59**	**36.04**			**123.15**	**47.66**	**15.04**

Potential Emissions Summary - Gaseous Emissions							
		Uncontrolled Emissions					
Point #	**Emitting Unit**	**SO_2**	**NO_x**	**CO**	**VOC**	**PB**	**Total HAPS**
		(tpy)	**(tpy)**	**(tpy)**	**(tpy)**	**(tpy)**	**(tpy)**
2	Mine Ventilation Exhaust	27.87	64.04	47.52	Unknown	Unknown	Unknown
10	Diesel Generators (3, Surface)	1.44	11.40	3.03	0.29	Unknown	0.0055
12	Propane (Surface)	4.13	35.75	20.63	2.75	Unknown	Unknown
	TOTAL	**33.44**	**111.19**	**71.18**	**3.04**	**0.00**	**0.01**

** CO = carbon monoxide
(fil) = filterable
HAPs = hazardous air pollutants
hp = horsepower
lb = pound
N/A = not applicable
ND = no data available
NO_X = oxides of nitrogen
PM = particulate matter
PM_{10} = particulate matter with an aerodynamic diameter of 10 microns or less
$PM_{2.5}$ = particulate matter with an aerodynamic diameter of 2.5 microns or less
SO_2 = sulfur dioxide
TPH = tons per hour
TPY = tons per year
VOC = volatile organic compounds
yr = year

Emission Calculation Details										
Point Name/ Segment Description	**Point #**	**Annual Process Rate**	**Process Rate Units**	**Emission Factor**	**Emission Factor Units**	**Calc Method**	**Emission Factor Source**	**% Cont-rol**	**Pollutant Tons/Year**	**Pollutant**
Complete Backfilled, and Finish Graded (<2 Yr)	1.a	0	Acres	380	lbs/Acre	U	FIRE	90%	0.9	PM_{10}-Fil
				41.8					0.1	$PM_{2.5}$-Fil
				760					1.7	PT
Complete Backfilled, and Finish Graded (>2 Yr)	1.b	0	Acres	380	lbs/Acre	U	FIRE	100%	0.0	PM_{10}-Fil
				41.8					0.0	$PM_{2.5}$-Fil
				760					0.0	PT
Facilities	1.c	0	Acres	380	lbs/Acre	U	FIRE	100%	0.0	PM_{10}-Fil
				41.8					0.0	$PM_{2.5}$-Fil
				760					0.0	PT
Partially Backfilled, and Finish Graded(<1 Yr)	1.d	0	Acres	380	lbs/Acre	C	FIRE	30%	0.4	PM_{10}-Fil
				41.8					0.0	$PM_{2.5}$-Fil
				760					0.8	PT
Partially Backfilled, and Finish Graded(<1 Yr)	1.e	0	Acres	380	lbs/Acre	C	FIRE	90%	0.1	PM_{10}-Fil
				41.8					0.0	$PM_{2.5}$-Fil
				760					0.2	PT
Pits, Peaks, Soil Stripping	1.f	0	Acres	380	lbs/Acre	C	FIRE	30%	0.1	PM_{10}-Fil
				41.8					0.0	$PM_{2.5}$-Fil
				760					0.3	PT
Tailings- Dry Area	1.g	0	Acres	380	lbs/Acre	C	FIRE	50%	1.0	PM_{10}-Fil
				41.8					0.1	$PM_{2.5}$-Fil
				760					2.1	PT
Tailings- Wet	1.h	0	Acres	380	lbs/Acre	C	FIRE	100%	0.0	PM_{10}-Fil
				41.8					0.0	$PM_{2.5}$-Fil
				760					0.0	PT
Mine Ventilation Exhaust	2	8760	hr/yr	0.0015	gr/dscf	U	Source Testing July 2017 - EEMC at Brownlee	--	33.47	PM
		8760	hr/yr	0.001125	gr/dscf	U	Source Testing July 2017 - EEMC at Brownlee	--	12.55	PM_{10}
		8760	hr/yr	0.00075	gr/dscf	U	Source Testing July 2017 - EEMC at Brownlee	--	4.18	$PM_{2.5}$

Emission Calculation Details										
Point Name/ Segment Description	**Point #**	**Annual Process Rate**	**Process Rate Units**	**Emission Factor**	**Emission Factor Units**	**Calc Method**	**Emission Factor Source**	**% Cont-rol**	**Pollutant Tons/Year**	**Pollutant**
		8760	hr/yr	1.0	ppm v/v3	U	Source Testing July 2017 - EEMC at Brownlee	--	27.87	SO_2
		8760	hr/yr	3.2	ppm v/v3	U	Source Testing July 2017 - EEMC at Brownlee	--	64.04	NO_x
		8760	hr/yr	3.9	ppm v/v3	U	Source Testing July 2017 - EEMC at Brownlee	--	47.52	CO
Coarse Ore Dumping @ Trestle	3	1,095,000	tons/yr	0.01	lb/ton	C	AP-42 Section 11.24 (8/82) Table 11.24-2	50%	2.74	PM
				0.004					1.10	PM_{10}
				0.0032					0.88	$PM_{2.5}$
Waste Rock Dumping @ Trestle	5	1,095,000	tons/yr	0.01	lb/ton	C	AP-42 Section 11.24 (8/82) Table 11.24-2	50%	2.74	PM
				0.004					1.10	PM_{10}
				0.0032					0.88	$PM_{2.5}$
Haul Roads >50T	7/01	30,000	miles/yr	6.44	lb/VMT	C	AP-42 Section 13.2.2, (11/06) Unpaved Roads	85%	14.49	PM
				1.64					3.69	PM_{10}
				0.16					0.37	$PM_{2.5}$
Haul Roads <50T	7/02	30,000	miles/yr	5.74	lb/VMT	C	AP-42 Section 13.2.2, (11/06) Unpaved Roads	85%	12.91	PM
				1.46					3.29	PM_{10}
				0.15					0.33	$PM_{2.5}$
Light Vehicles	7/03	53,900	miles/yr	1.44	lb/VMT	C	AP-42 Section 13.2.2, (11/06) Unpaved Roads	85%	5.83	PM
				0.37					1.49	PM_{10}
				0.04					0.15	$PM_{2.5}$
Diesel Generators (3, Surface)	10	52,000 0.137	gal/yr MMBtu /gal	0.0697	lb/MMBtu	U	AP-42 Section 3.4, Table 3.4-2 (10/96)	0%	0.25	PM
				0.0573					0.20	PM_{10}
				0.0556					0.20	$PM_{2.5}$
				0.40			AP-42 Section 3.4, Table 3.4-1 (10/96)		1.44	SO_2
				0.85					3.03	CO
				0.0819					0.29	VOC
				3.2			AP-42 Section 3.3, Table 3.3-1 (10/96)		11.40	NO_x
	12	5,500,000	gal/yr	0.7	lb/10^3 gal	U		0%	1.93	PM

Emission Calculation Details										
Point Name/ Segment Description	**Point #**	**Annual Process Rate**	**Process Rate Units**	**Emission Factor**	**Emission Factor Units**	**Calc Method**	**Emission Factor Source**	**% Cont-rol**	**Pollutant Tons/Year**	**Pollutant**
Propane (Surface)							AP-42 Section 1.5, Table 1.5-1 (07/08) Liquified Petroleum Gas Combustion			PM_{10}
										$PM_{2.5}$
				negligible					4.13	SO_2
				13					35.75	NO_x
				7.5					20.63	CO
				0.8					2.75	VOC
Topsoil Removal	13	236,321	tons/yr	0.010	--	U	FIRE	0%	1.18	PM
				0.0050					0.59	PM_{10}
				0.0015					0.18	$PM_{2.5}$
Topsoil Loading /Dumping/ Screening	14	236,321	tons/yr	0.010	--	U	FIRE	0%	1.18	PM
				0.0050					0.59	PM_{10}
				0.0015					0.18	$PM_{2.5}$
Bulk Loading (Borrow)	15	1,500	tons/yr	0.036	lb/ton	U	AP-42 Section 11.19.2 (8/04) Crushed Stone Processing and Pulverized Mineral Processing Table 11.19.2-2	0%	0.03	PM
				0.009					0.01	PM_{10}
				No data					Unknown	$PM_{2.5}$
Waste Loading (from Trestle Drop into Bench Stockpile by Loader)	19	1,095,000	tons/yr	0.010	--	C	FIRE	50%	5.48	PM
				0.0050					2.74	PM_{10}
				0.0015					0.82	$PM_{2.5}$
Ore Load, Haul, Dump Ore into Grizzly by Loader	20/ 01	1,095,000	tons/yr	0.010	--	C	FIRE	50%	5.48	PM
									2.74	PM_{10}
									0.82	$PM_{2.5}$
Surface Crushing Ore (Nordberg Crusher)	21	1,095,000	tons/yr	0.05	lb/ton	C	AP-42 Section 11.24, (8/82) Table 11.24-2 (High Moisture Ore - Secondary Crushing) Metallic Mineral Processing	99.0%	0.27	PM
				0.02					0.11	PM_{10}
				0.015					0.08	$PM_{2.5}$
Ore Conveyed from Apron Feed to Mill	22/01	1,095,000	tons/yr	0.010	--	C	FIRE	67.0%	3.61	PM
				0.0040					1.45	PM_{10}
				0.0015					0.54	$PM_{2.5}$
	22/02	1,095,000	tons/yr	0.010	--	C	AP-42 Section 11.24, (8/82)	99.0%	0.11	PM
				0.0040					0.04	PM_{10}

Emission Calculation Details										
Point Name/ Segment Description	**Point #**	**Annual Process Rate**	**Process Rate Units**	**Emission Factor**	**Emission Factor Units**	**Calc Method**	**Emission Factor Source**	**% Cont-rol**	**Pollutant Tons/Year**	**Pollutant**
Ore Conveyed from Crusher to Stacker				0.0015			Table 11.24-2 (High Moisture Ore - Material Handling & Transfer – All Materials Except Bauxite) Metallic Mineral Processing		0.02	$PM_{2.5}$
Native Borrow @ Tailings Embankment	23/01	1,000,000	tons/yr	0.012	lb/ton	U	AP-42 Section 11.9, (7/98) Western Surface Coal Mining Table 11.9-4 as referenced by AP-42 Section 13.2.3 (7/95) Heavy Construction Operations	0%	6.00	PM
				0.004				0%	2.00	PM_{10}
				0.001				0%	0.40	$PM_{2.5}$
Borrow Material Removal	23/02	1,000,000	tons/yr	0.010	--	U	FIRE	0%	5.00	PM
				0.0050					2.50	PM_{10}
				0.0015					0.75	$PM_{2.5}$
Waste from Stockpile Below Stacker to Tailings Embankment	23/03	1,095,000	tons/yr	0.01	lb/ton	C	AP-42 Section 11.24, (8/82) Table 11.24-2 (High Moisture Ore - Material Handling & Transfer - All Materials Except Bauxite) Metallic Mineral Processing	50%	5.48	PM
				0.004					2.19	PM_{10}
				0.0015					0.82	$PM_{2.5}$
Waste @ Tailings Embankment (Spreading)	23/04	1,095,000	tons/yr	0.01	lb/ton	C	AP-42 Section 11.24, (8/82) Table 11.24-2 (High Moisture Ore - Material Handling & Transfer - All Materials	50%	2.74	PM
				0.004					1.40	PM_{10}

Emission Calculation Details										
Point Name/ Segment Description	**Point #**	**Annual Process Rate**	**Process Rate Units**	**Emission Factor**	**Emission Factor Units**	**Calc Method**	**Emission Factor Source**	**% Cont-rol**	**Pollutant Tons/Year**	**Pollutant**
				0.001			Except Bauxite) Metallic Mineral Processing		0.22	$PM_{2.5}$
Crushing Bedding Material	24/01	1,000	tons/yr	0.0054	lb/ton	U	AP-42 Section 11.19.2, (8/04) Table 11.19.2-2 (Crushed Stone Processing Operations) Crushed Stone Processing and Pulverized Mineral Processing	0%	0.0027	PM
				0.0024					0.0012	PM_{10}
				0.0002					0.0001	$PM_{2.5}$
Conveying Bedding Material	24/02	1,000	tons/yr	0.0054	lb/ton	C	AP-42 Section 11.19.2, (8/04) Table 11.19.2-2 (Crushed Stone Processing Operations) Crushed Stone Processing and Pulverized Mineral Processing	50%	0.0027	PM
				0.0024					0.0012	PM_{10}
				0.0002					0.0001	$PM_{2.5}$
Material Handling – Bedding Material	24/03	1,000	tons/yr	0.0054	lb/ton	U	AP-42 Section 11.19.2, (8/04) Table 11.19.2-2 (Crushed Stone Processing Operations) Crushed Stone Processing and Pulverized Mineral Processing	0%	0.0054	PM
				0.0024					0.0024	PM_{10}
				0.0002					0.0002	$PM_{2.5}$
Material Handling –	24/04	25	tons/yr	0.0022	lb/ton	U	AP-42 Section 11.19.2,	0%	0.0001	PM

Emission Calculation Details										
Point Name/ Segment Description	**Point #**	**Annual Process Rate**	**Process Rate Units**	**Emission Factor**	**Emission Factor Units**	**Calc Method**	**Emission Factor Source**	**% Cont-rol**	**Pollutant Tons/Year**	**Pollutant**
Bedding Material Screening				0.00074			(8/04) Table 11.19.2-2 (Crushed Stone Processing Operations) Screening Controlled		0.0000	PM_{10}
				0.00074					0.0000	$PM_{2.5}$
Pile Forming – Radial Stacker	26	1,095,000	tons/yr	0.01	lb/ton	C	AP-42 Section 11.24, (8/82) Table 11.24-2 (High Moisture Ore - Material Handling & Transfer - All Materials Except Bauxite) Metallic Mineral Processing	50%	2.74	PM
				0.004					1.10	PM_{10}
				0.0002					0.05	$PM_{2.5}$
Cement Batch Plant – Cement Unloading – Silo	27/01	150	tons/yr	0.73	lb/ton	C	AP-42 Section 11.12 (6/06) Table 11.12-2 (Cement unloading to elevated storage silo - pneumatic) Concrete Batching	99.9%	0.00001	PM
				0.47					0.00003	PM_{10}
				0.47					0.00003	$PM_{2.5}$
Dumping Gravel into Stockpiles	27/02	570	tons/yr	0.0069	lb/ton	U	AP-42 Section 11.12 (6/06) Table 11.12-2 (Aggregate transfer) Concrete Batching	0%	0.0020	PM
				0.0033					0.0009	PM_{10}
				0.0033					0.0009	$PM_{2.5}$
Dumping Sand into Stockpiles	27/03	35	tons/yr	0.0020	lb/ton	U	AP-42 Section 11.12 (6/06) Table 11.12-2 (Aggregate transfer) Concrete Batching	0%	0.0005	PM
				0.001					0.0002	PM_{10}
				0					0	$PM_{2.5}$
Gravel Mixer Loading to Truck	27/04	46	tons/d	0.0069	lb/ton	U	AP-42 Section 11.12 (6/06) Table 11.12-2	0%	0.0020	PM
				0.0033					0.0009	PM_{10}

Emission Calculation Details										
Point Name/ Segment Description	**Point #**	**Annual Process Rate**	**Process Rate Units**	**Emission Factor**	**Emission Factor Units**	**Calc Method**	**Emission Factor Source**	**% Cont-rol**	**Pollutant Tons/Year**	**Pollutant**
				0.0033			(Aggregate transfer) Concrete Batching		0.0009	$PM_{2.5}$
Sand Mixer Loading to Truck	27/05	35	tons/d	0.002	lb/ton	U	AP-42 Section 11.12 (6/06) Table 11.12-2 (Aggregate transfer) Concrete Batching	0%	0.0005	PM
				0.01					0.0002	PM_{10}
				0					0	$PM_{2.5}$
Gravel Transfer to Bin	27/06	46	tons/d	0.0069	lb/ton	U	AP-42 Section 11.12 (6/06) Table 11.12-2 (Aggregate transfer) Concrete Batching	0%	0.0020	PM
				0.0033					0.0009	PM_{10}
				0.0033					0.0009	$PM_{2.5}$
Sand Transfer to Bin	27/07	35	tons/d	0.002	lb/ton	U	AP-42 Section 11.12 (6/06) Table 11.12-2 (Aggregate transfer) Concrete Batching	0%	0.0005	PM
				0.001					0.0002	PM_{10}
				0					0	$PM_{2.5}$
Weigh Hopper Unloading	27/08	12	tons/d	0.73	lb/ton	U	AP-42 Section 11.12 (06/06) Table 11.12-2 (Cement unloading to elevated storage silo - pneumatic) Concrete Batching	0%	0.0548	PM
				0.47					0.0353	PM_{10}
				0.47					0.0353	$PM_{2.5}$

Proposed Project PTE

Emission Unit	Equipment/Process	PM	PM_{10}	$PM_{2.5}$	NO_x	CO	SO_2	VOC
		Tons/year						
EU012	Existing propane total - 400 10^3 gal/yr	0.14	0.14	0.14	2.60	1.50	0.30	0.20
	Proposed propane total - 5500 10^3 gal/yr	1.93	1.93	1.93	35.75	20.63	4.13	2.75
TOTAL - Proposed Emissions Increase		1.79	1.79	1.79	33.15	19.13	3.83	2.55

Note: Emissions are expressed to the nearest one hundredth unit for presentation and calculation purposes. Multiple digit accuracy should not be assumed.

The propane combustion emissions are based on EPA's AP-42, Chapter 1.5 – Liquified Petroleum Gas Combustion.

V. Existing Air Quality

The air quality of the area is classified as "Better than National Standards" or unclassifiable/attainment of the National Ambient Air Quality Standards (NAAQS) for criteria pollutants (40 CFR 81.327). There are no nonattainment areas within a reasonable distance of the site. Stillwater conducted baseline ambient air quality monitoring from 1981-1982 and from 1988- 1989 and ongoing PM_{10} ambient monitoring following that to document the existing air quality status per Attachment 1 of MAQP #2653. The monitoring was discontinued in 2006 based on the MDEQ Monitoring Requirements Guidance Statement dated October 9, 1998, based on the impacts (or lack thereof) demonstrated by the monitoring.

VI. Ambient Air Impact Analysis

The following table reiterates the projects potential emissions, specifically the proposed increase. The potential for ambient impacts from these emissions is described below.

Table: Criteria Pollutant Emissions Summary – Proposed Project PTE

Equipment/Process	PM	PM_{10}	$PM_{2.5}$	NO_x	CO	SO_2	VOC
	Tons/year						
Previous propane total - 400 10^3 gal/yr	0.14	0.14	0.14	2.60	1.50	0.30	0.20
New propane total - 5500 10^3 gal/yr	1.93	1.93	1.93	35.75	20.63	4.13	2.75
Proposed Emissions Increase	1.79	1.79	1.79	33.15	19.13	3.83	2.55

Note: Emissions are expressed to the nearest one hundredth unit for presentation and calculation purposes. Multiple digit accuracy should not be assumed.

Given the nature of the source, the emissions below major source and significant thresholds and relevant EPA guidance documents, no additional modeling analyses are needed to demonstrate compliance with the ambient standards. DEQ believes it will not cause or contribute to a violation of any ambient air quality standard.

VII. Environmental Assessment

An environmental assessment, required by the Montana Environmental Policy Act, was completed for this project. A copy is attached.

Stillwater Mining Company – East Boulder Operations

Environmental Assessment (EA)

Montana Air Quality Permit number (MAQP): 2653-07

Air Quality Bureau

APPLICANT: Stillwater Mining Company (Stillwater)		
SITE NAME: East Boulder Operations		
PROPOSED PERMIT NUMBER: Montana Air Quality Permit (MAQP) #2653-07		
APPLICATION RECEIVED: 07/26/2022		
APPLICATION DEEMED COMPLETE: 08/23/2022		
LOCATION: Sections 2, 3, 11, 19, 26, and 34, Township 4 South, Range 13 East, in Sweet Grass County, Montana.		**COUNTY: Sweetgrass**
PROPERTY OWNERSHIP:	**FEDERAL ____ STATE ____ PRIVATE _X___**	
EA PREPARER:	**T. Burrows**	
EA Draft Date	**EA Final Date**	**Permit Final Date**
09/21/2022	**10/13/2022**	**10/29/22**

COMPLIANCE WITH THE MONTANA ENVIRONMENTAL POLICY ACT

The Montana Department of Environmental Quality (DEQ) prepared this Environmental Assessment (EA) in accordance with requirements of the Montana Environmental Policy Act (MEPA). An EA functions to determine the need to prepare an Environmental Impact Statement (EIS) through an initial evaluation and determination of the significance of impacts associated with the proposed action. However, an agency is required to prepare an EA whenever, as here, statutory requirements do not allow sufficient time for the agency to prepare an EIS (ARM 17.4.607(3)(c)). This document may disclose impacts over which DEQ has no regulatory authority.

COMPLIANCE WITH THE CLEAN AIR ACT OF MONTANA

The state law that regulates air quality permitting in Montana is the Clean Air Act of Montana (CAA), §§ 75-2-101, *et seq*., Montana Code Annotated (MCA). DEQ may not approve a proposed action contained in an application for an air quality permit unless the project complies with the requirements set forth in the CAA and the administrative rules adopted thereunder, ARMs 17.8.101 *et. seq.* The project is subject to approval by the DEQ Air Quality Bureau (AQB) as the potential project emissions exceed the 5 tons per year threshold of regulated pollutants for modifications of permitted facilities (ARM 17.8.743). DEQ's approval of an air quality permit application does not relieve Stillwater from complying with any other applicable federal, state, or county laws, regulations, or

ordinances. Stillwater is responsible for obtaining any other permits, licenses, or approvals (from DEQ or otherwise) that are required for any part of the proposed action. Any action DEQ takes at this time is limited to the pending air quality permit application currently before DEQ's AQB and the authority granted to DEQ under the Clean Air Act of Montana. This action is not indicative of any other action DEQ may take on any future (unsubmitted) applications made pursuant to any other authority (*e.g.,* Montana's Water Protection Act). DEQ will decide whether to issue the pending air quality permit pursuant to the requirements of the CAA alone. DEQ may not withhold, deny, or impose conditions on the permit based on the information contained in this Environmental Assessment. § 75-1-201(4), MCA.

SUMMARY OF THE PROPOSED ACTION

Stillwater Mining Company – East Boulder Operations (Stillwater) is modifying the permit to reflect the following changes:

- 400,000 gallons of propane combusted per rolling 12-month period be increased to 5,500,000 gallons per rolling 12-month period to allow for operational flexibility and heating capability. Establish an enforceable limit for this updated throughput.
- Possible addition of more propane-fired heaters which would be covered by the new throughput limit.

Table 1: Proposed Action Details

Proposed Action	
General Overview	Stillwater Mining Company – East Boulder Operations (Stillwater) is updating the permit to reflect the following changes: Current 400,000 gallons of propane combusted per rolling 12-month period be increased to 5,500,000 gallons per rolling 12-month period to allow for operational flexibility and heating capability and the possible addition of more propane-fired heaters. Establish an enforceable limit for this updated throughput.
Proposed Action Estimated Disturbance	
Disturbance	There would be no additional disturbance as this project would be contained on the current mine property.
Proposed Action	
Duration	**Construction:** Construction or commencement for the new or modified sources must start within three years of issuance of the final air quality permit, otherwise the authority to construct expires. **Operational Life:** Although equipment may have functional lives of 20 to 30 years depending on equipment maintenance efforts, the mine has been operational since the 1980s and would be expected to remain operational as long as economic conditions are favorable.
Construction Equipment	There is no need for additional construction equipment for this project.
Personnel Onsite	No change in staff is necessary to accommodate the project.

Location and Analysis Area	**Location**: The proposed action is located at Sections 2, 3, 11, 19, 26, and 34, Township 4 South, Range 13 East, in Sweet Grass County, Montana. The Project would occur inside the current Sweetwater, East Boulder Operations property boundary. **Analysis Area**: The area being analyzed as part of this environmental review includes the immediate project area, as well as neighboring lands surrounding the analysis area, as reasonably appropriate for the impacts being considered.
Air Quality	The Draft EA will be attached to the Preliminary Determination Air Quality Permit which would include all enforceable conditions for operation of the emitting units. Any revisions to the EA would be addressed and included in the Final EA attached to DEQ's Decision.
Conditions Incorporated into the Proposed Action	The conditions developed in the Preliminary Determination of the MAQP dated September 1, 2022, set forth in Sections II.A-D.

PURPOSE AND BENEFIT FOR PROPOSED ACTION

DEQ's purpose in conducting this environmental review is to act upon Stillwater's air quality permit application #2653-07 to: Change the current 400,000 gallons of propane combusted per rolling 12-month period to 5,500,000 gallons per rolling 12-month period to allow for operational flexibility and heating capability and the possible addition of more propane-fired heaters.

The benefits of the proposed action, if approved, include authorizing Stillwater to continue current operations with more operational flexibility for heating and emergency operations.

Authority to Stillwater for operation of the East Boulder Operations would continue until the permit is revoked, either at the request of Stillwater or by DEQ because of non-compliance with the conditions within the air quality permit.

REGULATORY RESPONSIBILITIES

In accordance with ARM 17.4.609(3)(c), DEQ must list any federal, state, or local, authorities that have concurrent or additional jurisdiction or environmental review responsibility for the proposed action and the permits, licenses, and other authorizations required. Stillwater must conduct its operations according to the terms of its permit, the CAA, §§ 75-2-101, *et seq*., MCA, and ARMs 17.8.101, *et seq*.

Stillwater must cooperate fully with, and follow the directives of, any federal, state, or local entity that may have authority over Stillwater's East Boulder mine. These permits, licenses, and other authorizations may include: Sweet Grass County, Occupational Safety and Health Administration (OSHA), Mine Safety and Health Administration (MSHA), DEQ AQB (air quality) and Water Protection Bureau (groundwater and surface water discharge; stormwater), and Montana Department of Transportation and Sweet Grass County (road access).

EVALUATION AND SUMMARY OF POTENTIAL IMPACTS TO THE PHYSICAL AND HUMAN ENVIRONMENT IN THE AREA AFFECTED BY THE PROPOSED ACTION:

The impact analysis will identify and evaluate direct and secondary impacts. Direct impacts are those that occur at the same time and place as the action that triggers the effect. Secondary impacts

mean "a further impact to the human environment that may be stimulated or induced by or otherwise result from a direct impact of the action." ARM 17.4.603(18). Where impacts are expected to occur, the impacts analysis estimates the duration and intensity of the impact.
The duration of an impact is quantified as follows:

- **Short-term**: Short-term impacts are defined as those impacts that would not last longer than the proposed operation of the site.
- **Long-term**: Long-term impacts are defined as impacts that would remain or occur following shutdown of the proposed facility.

The severity of an impact is measured using the following:

- **No Impact**: There would be no change from current conditions.
- **Negligible Impact**: An adverse or beneficial effect would occur but would be at the lowest levels of detection.
- **Minor Impact**: The effect would be noticeable but would be relatively small and would not affect the function or integrity of the resource.
- **Moderate Impact**: The effect would be easily identifiable and would change the function or integrity of the resource.
- **Major Impact**: The effect would alter the resource.

TOPOGRAPHY, GEOLOGY AND SOIL QUALITY, STABILITY AND MOISTURE:

This permit action results in a minor increase to some maximum potential emission levels in the emission inventory. The annual mine production limit remains unchanged and there no increases in authorized processes and equipment capacities. The mine would continue to operate in the same manner. There are no anticipated changes to the impacts on geology and soil quality, stability, and moisture which already occur due to mining activities.

Direct Impacts: No direct impacts are predicted to topography, geology, stability, and moisture with the proposed project.

Secondary Impacts: No secondary impacts to topography, geology, stability, and moisture would be expected because the project is located within the existing Stillwater mine property.

WATER QUALITY, QUANTITY, AND DISTRIBUTION:

There are no planned discharges into surface water because of this project. The increase in vehicle miles traveled per year on haul roads for propane deliveries could have a corresponding increase in dust control measures, which is typically the application of water. Therefore, there may be a minor impact to water quality, quantity, and distribution because of the potential increase in water application for dust control.

Direct Impacts: Minimal direct impacts are predicted with the proposed project.

Secondary Impacts: No secondary impacts to water quality, quantity, and distribution would be expected because the project is located within the existing Stillwater mine property.

AIR QUALITY:

Table 2: Increasing Propane Limits – Project-only Potential to Emit Emission Increase Summary

Emission Unit	Equipment/Process	PM	PM_{10}	$PM_{2.5}$	NO_x	CO	SO_2	VOC
		Tons/year						
EU012	Existing propane total - 400 10^3 gal/yr	0.14	0.14	0.14	2.60	1.50	0.30	0.20
	Proposed propane total - 5500 10^3 gal/yr	1.93	1.93	1.93	35.75	20.63	4.13	2.75
TOTAL - Proposed Emissions Increase		1.79	1.79	1.79	33.15	19.13	3.83	2.55

Note: Emissions are expressed to the nearest one hundredth unit for presentation and calculation purposes. Multiple digit accuracy should not be assumed.

While this permit action results in increases to maximum potential emission levels in the emission inventory, the annual mine production limit remains unchanged. The mine would continue to operate in the same manner as it currently does but with more operational flexibility.

Direct Impacts: Only minor impacts, if any, are anticipated due to the minor increase in some potential emission levels.

Secondary Impacts: No secondary impacts to air quality would be expected.

VEGETATION COVER, QUANTITY AND QUALITY:

There are no known rare or sensitive plants or cover types present in the site area. No fragile or unique resources or values, or resources of statewide or societal importance, are present. Mining has been conducted at this site since the 1980's. An air quality permit for the site was first issued in 1988.

Direct Impacts: The information provided above is based on the information that DEQ had available to it at the time of completing this EA and provided by the applicant. Available information includes the permit application, analysis of aerial photography, topographic maps, geologic maps, soil maps, and other research tools. As the proposed action would be located within the Stillwater property site, the vegetation is limited at the underground mine site. No impacts to vegetation cover, quantity and quality are expected.

Secondary Impacts: No secondary impacts are expected since land disturbance at the mine site would be minimal.

TERRESTRIAL, AVIAN AND AQUATIC LIFE AND HABITATS:

While this permit action results in a minor increase to some maximum potential emission levels in the emission inventory, the primary source of these emissions are from propane-fired portal heaters. The annual mine production limit remains unchanged, and the mine would continue to operate in the same manner.

Direct Impacts: There are no anticipated impacts to terrestrial, avian, and aquatic life and habitat.

Secondary Impacts: No secondary impacts to terrestrial, avian, and aquatic life and habitats stimulated or induced by the direct impacts analyzed above or from the project would be expected.

UNIQUE, ENDANGERED, FRAGILE OR LIMITED ENVIRONMENTAL RESOURCES:

This permit action results in a minor increase to some maximum potential emission levels in the emission inventory. The annual mine production limit remains unchanged, and the mine would continue to operate in the same manner as it currently does, but with additional operational flexibility.

Direct Impacts: There are no anticipated impacts to unique endangered, fragile, or limited environmental resources because of this action.

Secondary Impacts: No secondary impacts to unique endangered, fragile, or limited environmental resources would be expected because of this action.

HISTORICAL AND ARCHAEOLOGICAL SITES:

This permit action results in a minor increase to some maximum potential emission levels in the emission inventory. The annual mine production limit remains unchanged, and the mine would continue to operate in the same manner within the planned mined area. No additional land would be disturbed beyond the planned mine area. However, should structures need to be altered, or if cultural materials are inadvertently discovered during this proposed action, SHPO requests their office be contacted for further investigation.

Direct Impacts: No impacts are anticipated to any historical and archaeological sites.

Secondary Impacts: No secondary impacts to historical and archaeological sites are anticipated since the proposed action is located on land currently used by the mine.

SAGE GROUSE EXECUTIVE ORDER:

The project would not be in core, general or connectivity sage grouse habitat, as designated by the Sage Grouse Habitat Conservation Program (Program) at: http://sagegrouse.mt.gov.

Direct Impacts: The proposed action is not located within Sage Grouse habitat, so no direct impacts would occur.

Secondary Impacts: No secondary impacts to sage grouse or sage grouse habitat would be expected since the proposed action is not located within Sage Grouse habitat.

AESTHETICS:

This permit action results in a minor increase to some maximum potential emission levels in the emission inventory. The annual mine production limit remains unchanged, and the mine would continue to operate in the same manner within the planned mine area.

Direct Impacts: There are no anticipated impacts to aesthetics.

Secondary Impacts: There are no anticipated secondary impacts to aesthetics.

DEMANDS ON ENVIRONMENTAL RESOURCES OF LAND, WATER, AIR OR ENERGY:

The potential increase in vehicle miles traveled per year on haul roads due to the additional propane use could have a corresponding increase in dust control measures, which is typically the application of water. Therefore, there may be a minor increase in annual water demand for dust control. There may also be more fuel needed to supply the additional vehicle miles traveled.

Direct Impacts: These impacts are expected to be minor and would be consistent with existing mining activities.

Secondary Impacts: There are no anticipated secondary impacts to demands on land, water, air, or energy.

IMPACTS ON OTHER ENVIRONMENTAL RESOURCES:

No other environmental resources are known have been identified in the area beyond those discussed above.

Direct Impacts: There is no impact to other environmental resources.

Secondary Impacts: No secondary impacts to other environmental resources are anticipated because of the proposed action.

HUMAN HEALTH AND SAFETY:

This permit action results in a minor increase to some maximum potential emission levels in the emission inventory. Regulated air pollutants have the potential to negatively impact human health. The small increase in maximum potential emission levels could have a minor impact on human health.

Direct Impacts: Negligible change in impacts to human health and safety are anticipated because of this project action. There would be an increase in propane use at the site. This would result in minor increases on PM, PM_{10}, and $PM_{2.5}$ at the site. The additional propane capacity would also be a source of gaseous air pollutants such as NOx, CO, and VOC. These activities are regulated by this permit and other state and federal laws to ensure air quality is maintained.

Secondary Impacts: No secondary impacts to human health and safety are anticipated because of the proposed action.

INDUSTRIAL, COMMERCIAL AND AGRICULTURAL ACTIVITIES AND PRODUCTION:

This permit action results in a minor increase to some maximum potential emission levels in the emission inventory. Mining activity would continue to occur in the same manner as before within the planned mine area. The ore production limit remains unchanged. The current action does not

present any potential effects on the agricultural or industrial production. There is no agricultural activity at the site**.**

Direct Impacts: Impacts on the industrial, commercial, and agricultural activities and production in the area would be negligible.

Secondary Impacts: No secondary impacts to industrial, commercial, and agricultural activities and production are anticipated because of the proposed action.

QUANTITY AND DISTRIBUTION OF EMPLOYMENT:

There will be no change in the number of employees at the East Boulder mine due to the proposed project.

Direct Impacts: The proposed action would be expected to have no impact on the distribution of employment.

Secondary Impacts: No secondary impact is expected on employment from the proposed action because the same employee base would be used at the mine.

LOCAL AND STATE TAX BASE AND TAX REVENUES:

Mining activity would continue to occur in the same manner is before. There would be a potential increase in propane demand. There may be minor effects on the local tax and state tax base or tax revenue due to increased propane demand and the associated taxes on that resource.

Direct Impacts: Local, state, and federal governments would be responsible for appraising the property, setting tax rates, collecting taxes, from the companies, employees, or landowners benefitting from this operation. A negligible impact is expected on the tax base and revenue with the proposed action.

Secondary Impacts: No secondary impacts to local and state tax base and tax revenues are anticipated because of the proposed action.

DEMAND FOR GOVERNMENT SERVICES:

The proposed action is on a currently operational mine site.

Direct Impacts: Compliance review and assistance oversight by DEQ AQB would be conducted in concert with other area activity when in the vicinity. The proposed action would have only minor impacts on demand for government services, mainly through oversight by DEQ AQB.

Secondary Impacts: No secondary impacts are anticipated on government services with the proposed action and a minimal increase in impact would occur from the permitting and compliance needs associated with the proposed project.

LOCALLY ADOPTED ENVIRONMENTAL PLANS AND GOALS:

DEQ did not find any locally adopted environmental plans and goals.

Direct Impacts: No impacts from the proposed action would be expected relative to any locally adopted community planning goals.

Secondary Impacts: No secondary impacts to the locally adopted environmental plans and goals are anticipated because of the proposed action.

ACCESS TO AND QUALITY OF RECREATIONAL AND WILDERNESS ACTIVITIES:

The current site of the proposed action is an operating underground mine site. No wilderness areas or other recreational sites will be affected in the vicinity.

Direct Impacts: There would be no impacts to the access to wilderness activities because of the proposed action.

Secondary Impacts: No secondary impacts to access and quality of recreational and wilderness activities are anticipated because of the proposed action, which is contained within the current Stillwater mine site.

DENSITY AND DISTRIBUTION OF POPULATION AND HOUSING:

The proposed project would not change the number of workers at the site, so there would be no impact to the density and distribution of population.

Direct Impacts: The project would not add to the population or require additional housing, therefore, no impacts to density and distribution of population and housing are anticipated.

Secondary Impacts: No secondary impacts to density and distribution of population and housing are anticipated because of the proposed action.

SOCIAL STRUCTURES AND MORES:

Mining activity would continue to occur in the same manner as before. The current action does not present any potential effects on social structures or mores.

Direct Impacts: The proposed action is located on an existing underground mine site, no disruption of native or traditional lifestyles would be expected, therefore, no impacts to social structure and mores are anticipated.

Secondary Impacts: No secondary impacts to social structures and mores are anticipated because of the proposed action.

CULTURAL UNIQUENESS AND DIVERSITY:

Mining activity would continue to occur in the same manner is before. The current action does not present any potential effects on cultural uniqueness or diversity.

Direct Impacts: No impacts to cultural uniqueness and diversity are anticipated from this project.

Secondary Impacts: No secondary impacts to cultural uniqueness and diversity are anticipated because of the proposed action.

PRIVATE PROPERTY IMPACTS:

The proposed action would take place on privately-owned land. The analysis below in response to the Private Property Assessment Act indicates no impact. DEQ does not plan to deny the application or impose conditions that would restrict the regulated person's use of private property so as to constitute a taking. Further, if the application is complete, DEQ must take action on the permit pursuant to § 75-2-218(2), MCA. Therefore, DEQ does not have discretion to take the action in another way that would have less impact on private property—its action is bound by a statute.

YES	NO	
X		1. Does the action pertain to land or water management or environmental regulation affecting private real property or water rights?
	X	2. Does the action result in either a permanent or indefinite physical occupation of private property?
	X	3. Does the action deny a fundamental attribute of ownership? (ex.: right to exclude others, disposal of property)
	X	4. Does the action deprive the owner of all economically viable uses of the property?
	X	5. Does the action require a property owner to dedicate a portion of property or to grant an easement? [If no, go to (6)].
		5a. Is there a reasonable, specific connection between the government requirement and legitimate state interests?
		5b. Is the government requirement roughly proportional to the impact of the proposed use of the property?
	X	6. Does the action have a severe impact on the value of the property? (consider economic impact, investment-backed expectations, character of government action)
	X	7. Does the action damage the property by causing some physical disturbance with respect to the property in excess of that sustained by the public generally?
	X	7a. Is the impact of government action direct, peculiar, and significant?
	X	7b. Has government action resulted in the property becoming practically inaccessible, waterlogged, or flooded?
	X	7c. Has government action lowered property values by more than 30% and necessitated the physical taking of adjacent property or property across a public way from the property in question?
	X	Takings or damaging implications? (Taking or damaging implications exist if YES is checked in response to question 1 and to any one or more of the following questions: 2, 3, 4, 6, 7a, 7b, 7c; or if NO is checked in response to questions 5a or 5b; the shaded areas)

Based on this analysis, DEQ determined there are no taking or damaging implications associated with this permit action.

OTHER APPROPRIATE SOCIAL AND ECONOMIC CIRCUMSTANCES:

Due to the nature of the proposed action, no further direct or secondary impacts are anticipated from this project.

ADDITIONAL ALTERNATIVES CONSIDERED:

No Action Alternative: In addition to the proposed action, DEQ also considered the "no-action" alternative. The "no-action" alternative would result in the active permit not reflecting the updated maximum potential emission levels and not allowing the changes to give Stillwater more production flexibility. Stillwater has complied with the requirements for updating the air quality permit. Therefore, the "no-action" alternative was eliminated from further consideration.

CUMULATIVE IMPACTS:

Cumulative impacts are the collective impacts on the human environment within the borders of the proposed action when considered in conjunction with other past and present actions related to the proposed action by location and generic type. Related future actions must also be considered when these actions are under concurrent consideration by any state agency through preimpact statement studies, separate impact statement evaluation, or permit processing procedures.

Currently, there are no other air permit applications for this facility pending before DEQ. Although additional permits may be necessary for this facility in the future, without a pending permit application containing the requisite information, DEQ cannot speculate about which permits may be necessary or which permits may be granted or denied. This environmental review analyzes only the proposed action submitted by Stillwater, which is the air quality permit regulating the emissions from the equipment as listed in the "proposed action" section, above.

DEQ considered potential impacts related to this project and potential secondary impacts. Due to the limited activities in the analysis area, cumulative impacts related to this proposed action would be minor. The cumulative table for any direct and secondary impacts is located at the very end of this EA.

PUBLIC INVOLVEMENT:

Scoping for this proposed action consisted of internal efforts to identify substantive issues and/or concerns related to the proposed action. Internal scoping consisted of internal review of the EA document by DEQ Air Permitting staff. Additionally, the EA for the Stillwater – East Boulder Operations was reviewed extensively.

Internal efforts also included queries to the following websites/ databases/ personnel:
- Montana State Historic Preservation Office
- Montana DEQ
- Montana Natural Heritage Program

A fifteen-day public comment period occurs along with the Preliminary Determination on MAQP #2653-07 and is posted to the DEQ website.

OTHER GOVERNMENTAL AGENCIES WITH JURSIDICTION:

The proposed action would be fully located on privately-owned land. All applicable local, state, and federal rules must be adhered to, which, at some level, may also include other local, state, federal, or tribal agency jurisdiction. Other Governmental Agencies which may have overlapping, or sole jurisdiction include but may not be limited to: Stillwater County Commission or County Planning Department (zoning), Occupational Safety and Health Administration (worker safety), Mine Safety and Health Administration (MSHA), DEQ AQB (air quality) and Water Protection Bureau (groundwater and surface water discharge; stormwater), DNRC (water rights), and MDT and Stillwater County (road access).

NEED FOR FURTHER ANALYSIS AND SIGNIFICANCE OF POTENTIAL IMPACTS:

Under ARM 17.4.608, DEQ is required to determine the significance of impacts associated with the proposed action. This determination is the basis for the agency's decision concerning the need to prepare an environmental impact statement and refers to DEQ's evaluation of individual and cumulative impacts. DEQ is required to consider the following criteria in determining the significance of each impact on the quality of the human environment:

1. The severity, duration, geographic extent, and frequency of the occurrence of the impact.

   "Severity" is analyzed as the density of the potential impact while "extent" is described as the area where the impact is likely to occur. An example could be that a project may propagate ten noxious weeds on a surface area of 1 square foot. In this case, the impact may be a high severity over a low extent. If those ten noxious weeds were located over ten acres there may be a low severity over a larger extent.

   "Duration" is analyzed as the time period in which the impact may occur while "frequency" is analyzed as how often the impact may occur. For example, an operation that occurs throughout the night may have impacts associated with lighting that occur every night (frequency) over the course of the one season project (duration).

2. The probability that the impact will occur if the proposed action occurs; or conversely, reasonable assurance in keeping with the potential severity of an impact that the impact will not occur.

3. Growth-inducing or growth-inhibiting aspects of the impact, including the relationship or contribution of the impact to cumulative impacts.

4. The quantity and quality of each environmental resource or value that would be affected, including the uniqueness and fragility of those resources and values.

5. The importance to the state and to society of each environmental resource or value that would be affected.

6. Any precedent that would be set because of an impact of the proposed action that would commit the DEQ to future actions with significant impacts or a decision in principle about such future actions.

7. Potential conflict with local, state, or federal laws, requirements, or formal plans.

The significance determination is made by giving weight to these criteria in their totality. For example, impacts with moderate or major severity may be determined to be not significant if the duration of the impacts is short-term. As another example, however, moderate, or major impacts of short-term duration may be considered significant if the quantity and quality of the resource is limited and/or the resource is unique or fragile. As a final example, moderate or major impacts to a resource may be determined to be not significant if the quantity of that resource is high or the quality of the resource is not unique or fragile.

Preparation of an EA is the appropriate level of environmental review under MEPA if statutory requirements do not allow sufficient time for an agency to prepare an environmental impact statement, pursuant to ARM 17.4.607. An agency determines whether sufficient time is available to prepare an environmental impact statement by comparing statutory requirements that establish when the agency must make its decision on the proposed action with the time required to obtain public review of an environmental impact statement plus a reasonable period to prepare a draft environmental review and, if required, a final environmental impact statement.

SIGNIFICANCE DETERMINATION:

The severity, duration, geographic extent, and frequency of the occurrence of the primary, secondary, and cumulative impacts associated with the proposed action would be limited. Stillwater proposes to modify operations at the East Boulder mine site as described in MAQP #2459-20. The modification would occur completely on the Stillwater mine property and is located on private land.

DEQ has not identified any significant impacts associated with the proposed action for any environmental resource. Approving Stillwater's air quality permit application would not set precedent that commits DEQ to future actions with significant impacts or a decision in principle about such future actions. If Stillwater submits another permit application, DEQ is not committed to approve that application. DEQ would conduct a new environmental assessment for any subsequent air quality permit applications sought by Stillwater. DEQ would decide on Stillwater's subsequent application based on the criteria set forth in the CAA.

DEQ's issuance of a modified MAQP to Stillwater for this proposed operation also does not set a precedent for DEQ's review of other applications, including the level of environmental review. A decision of on the appropriate level of environmental review is made based on case-specific considerations of the criteria set forth in ARM 17.4.608.

DEQ does not believe that the proposed action has any growth-inducing or growth-inhibiting aspects or that it conflicts with any local, state, or federal laws, requirements, or formal plans. Based on a consideration of the criteria set forth in ARM 17.4.608, the proposed state action is not predicted to significantly impact the quality of the human environment. Therefore, at this time, preparation of an EA is determined to be the appropriate level of environmental review under MEPA.

Environmental Assessment and Significance Determination Prepared By:

	T. Burrows	**Air Quality Permitter**
	Name	**Title**
EA Reviewed By:		
	E. Warner	**Lead Engineer – Permitting Services Section**
	Name	**Title**

References

Air Quality Permit Application Received August 23, 2022
Air Quality Bureau Permitted Source List-GIS Layer

ABBREVIATIONS and ACRONYMS

AQB – Air Quality Bureau
ARM - Administrative Rules of Montana
BACT – Best Available Control Technology
BMP - Best Management Practices
CAA – Clean Air Act of Montana
CFR - Code of Federal Regulations
CO - carbon monoxide
DEQ – Department of Environmental Quality
DNRC – Department of Natural Recourses and Conservation
EA – Environmental Assessment
EIS – Environmental Impact Statement
EPA - U.S. Environmental Protection Agency
FCAA Federal Clean Air Act
MAQP – Montana Air Quality Permit
MCA – Montana Code Annotated
MEPA – Montana Environmental Policy Act
MPDES - Montana Pollutant Discharge Elimination System
MRI – Montana Renewables, Inc.
MTNHP - Montana Natural Heritage Program
NO_X - oxides of nitrogen
PM - particulate matter
PM_{10} - particulate matter with an aerodynamic diameter of 10 microns and less
$PM_{2.5}$ - particulate matter with an aerodynamic diameter of 2.5 microns and less
PPAA - Private Property Assessment Act
Program - Sage Grouse Habitat Conservation Program
PSD - Prevention of Significant Deterioration
SHPO - Montana State Historic Preservation Office
SOC - Species of Concern
SO_2 - sulfur dioxide
tpy – tons per year
U.S.C. - United States Code
VOC - volatile organic compound