March 15, 2021

Matthew Fenton
Magris Talc USA, Inc.
1209 Orange Street
Wilmington, DE 19801

Dear Mr. Fenton:

Montana Air Quality Permit #1648-13 is deemed final as of March 5, 2021, by the Department of Environmental Quality (Department). This permit is for a talc mining and processing facility.

All conditions of the Department's Decision remain the same.

Enclosed is a copy of your permit with the final date indicated.

For the Department,

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

John P. Proulx
Air Quality Specialist
Air Quality Bureau
(406) 444-5391

JM:JPP
Enclosure

Montana Department of Environmental Quality
Air, Energy & Mining Division

Montana Air Quality Permit #1648-13

Magris Talc USA, Inc.
1209 Orange Street
Wilmington DE, 19801

March 5, 2021

MONTANA AIR QUALITY PERMIT

Issued to: Magris Talc USA, Inc.
1209 Orange Street
Wilmington, DE 19801

MAQP #1648-13
Administrative Amendment (AA)
Request Received: 1/15/2021
Department Decision on AA: 2/17/2021
Permit Final: 3/5/2021

A Montana Air Quality Permit (MAQP), with conditions, is hereby granted to Magris Talc USA, Inc. (Magris Talc) 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

Magris Talc operates a talc mining and processing facility referred to as the Yellowstone Mine. The facility is located 25 miles south of Ennis in Sections 4 and 9, Township 9 South, Range 1 West, Madison County. A list of permitted equipment is included in the permit analysis.

B. Current Permit Action

On January 15, 2021, the Department of Environmental Quality, Air Quality Bureau (Department) received a request to transfer ownership of Imerys Talc America, Inc. – Yellowstone Mine to Magris Talc USA, Inc. The current permit action is an administrative amendment pursuant to the ARM 17.8.764 that transfers ownership of Imerys Talc America, Inc., as requested.

SECTION II: Conditions and Limitations

A. Emission Limitations

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

2. Magris Talc shall not cause or authorize to be discharged into the atmosphere from any stationary source any visible emissions that exhibit an opacity of 20% or greater averaged over 6 consecutive minutes (ARM 17.8.308).

3. Magris Talc 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).

4. Magris Talc shall treat all unpaved portions of the haul roads, access roads, parking lots, or general plant area with water and/or chemical dust suppressant, as necessary, to maintain compliance with the reasonable precautions limitation in Section II.A.3 (ARM 17.8.749)).

5. Maximum ore and waste production (total mining rate) shall not exceed 7,819,000 tons per year (ARM 17.8.749).

6. Magris Talc shall not process, in any rolling 12-month period, greater than 100,000 tons of material in the material handling equipment associated with stockpiled oversized material. This equipment includes a feeder hopper, a vibratory feeder, a grizzly screen, a conveyor, a screen, and a conveyor belt (ARM 17.8.752).

7. The 250 horsepower(hp) diesel generator, the 20-Hp direct drive engine, and the 40-Hp gas engine associated with power generation for the material handling equipment for crushing of stockpiled material shall be limited to 500 hours of operation during any rolling 12-month period (ARM 17.8.752).

8. The 140-Hp and 80-Hp diesel engines associated with power generation in the processing area of the sorting facilities shall be limited to 1000 hours of operation during any rolling 12-month period (ARM 17.8.752).

9. Water and/or chemical dust suppressant shall be used, as necessary, to maintain compliance with the opacity limitations in Section II.A.1, when using the screen and associated equipment (ARM 17.8.752).

10. All material processed in the optical sorter shall be screened and limited to 100,000 tons during any rolling 12-month time period as indicated in Section II.A.6 (ARM 17.8.749).

11. Magris Talc shall comply with all applicable standards and limitations, and the reporting, recordkeeping and notification requirements contained in 40 CFR 60, Subpart IIII and 40 CFR 63, Subpart ZZZZ (ARM 17.8.340, 40 CFR 60, Subpart IIII, and 40 CFR 63, Subpart ZZZZ)

B. Testing Requirements

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

2. The Department may require further testing (ARM 17.8.105).

C. Operational Reporting Requirements

1. Magris Talc shall supply the Department with annual production information for all emission points as required by the Department 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 the Department by the date required in the emission inventory request. Information shall be in the units required by the Department. 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). This information shall include, but is not limited to, the following:

a. Amount of ore produced; and

b. Amount of waste produced.

2. Magris Talc shall notify the Department 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 the Department, 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 shall be maintained by Magris Talc as a permanent business record for at least 5 years following the date of the measurement, shall be submitted to the Department upon request, and shall be available at the plant site for inspection by the Department (ARM 17.8.749).

4. Magris Talc shall document, by month, the amount of material handled by the screen and associated equipment permitted to handle stockpiled material at the facility. By the 25th day of each month, Magris Talc shall total the amount of material handled by the screen during the previous 12-months to verify compliance with the limitations in Section II.A.6 and Section II.A.10. A written report of compliance verification shall be submitted along with the annual emission inventory (ARM 17.8.749).

5. Magris Talc shall document, by month, the hours of operation of the 250-Hp diesel generator, 20-Hp direct drive engine, and the 40-Hp gas engine for power generation associated with crushing of oversized stockpiled material. By the 25th day of each month, Magris Talc shall total the hours of operation during the previous 12-months to verify compliance with the limitation in Section II.A.7. A written report of compliance verification shall be submitted along with the annual emission inventory (ARM 17.8.749)

6. Magris Talc shall document, by month, the hours of operation of the 140-Hp and 80-Hp diesel engines related to the power generation associated with the

processing area of the sorting facilities. By the 25th day of each month, Magris Talc shall total the hours of operation during the previous 12-months to verify compliance with the limitation in Section II.A.8. A written report of compliance verification shall be submitted along with the annual emission inventory (ARM 17.8.749).

SECTION III: General Conditions

A. Inspection - Magris Talc shall allow the Department'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 (continuous emissions monitoring system (CEMS) or continuous emissions rate monitoring system 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 Magris Talc fails to appeal as indicated below

C. Compliance with Statutes and Regulations - Nothing in this permit shall be construed as relieving Magris Talc of the responsibility for complying with any applicable federal or Montana statute, rule or standard, except as specifically provided for 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 the Department's decision may request, within 15 days after the Department 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 the Department'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 the Department'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, the Department's decision on the application is final 16 days after the Department'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 the Department at the location of the permitted source.

G. Permit Fee - Pursuant to Section 75-2-220, MCA, failure to pay the annual operation fee by Magris Talc 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
Magris Talc America, Inc. - Yellowstone Mine
MAQP #1648-13

I. Introduction/Process Description

A. Permitted Equipment

Magris Talc USA, Inc. (Magris Talc) owns and operates a talc mine that incorporates various types of permitted equipment and is known as the Yellowstone Mine. A complete listing of permitted equipment and activities is contained in Section IV of this permit analysis.

B. Source Description

The Magris Talc Yellowstone Mine is a talc mining and processing facility. The crude talc is mined from the site and prepared for shipment and further refinement at other permitted Magris Talc facilities.

C. Permit History

The original **MAQP #1648** for the Yellowstone Mine was issued to Cyprus Industrial Minerals Company (Cyprus) on January 22, 1982, for crude talc sorting equipment.

The next permit action was an modification **(MAQP #1648-A),** issued September 21, 1989. The permit consolidated all talc mining operations at the mine and included a new small particle sorting facility, flotation mill, and product storage facility.

The next permit action was an modification **(MAQP #1648-02),** issued April 12, 1993. The mining rate (ore and waste) was increased from 4,060,000 to 7,819,000. The permit was also transferred from Cyprus to Luzenac America.

The next permit action was an modification **(MAQP #1648-03)** for the construction and operation of a direct ship facility, including a series of conveyors, a screen, a stacker, a feeder breaker, and a sample crusher. The facility provides for direct placement of ore from the mine to stockpiles, without sorting, before shipment to the talc mills.

The original **MAQP #1997,** for the Johnny Gulch Mine, was issued to Montana Talc Company on March 29, 1985. The most recent modification was issued April 24, 1989, **(MAQP #1997-02)**. Mining was discontinued in 1994, upon purchase by Luzenac America.

MAQP #1648-04 was issued September 18, 1995, for the addition of two screens and a conveyor, to allow increased fine ore recovery, and for the addition of a portable sorter (including a feed bin, grizzly, screen, and conveyor).

Also, as part of that permit action, MAQP #1997-02 for the Johnny Gulch Mine was incorporated into this permit. Luzenac America did not intend to mine the existing Johnny Gulch pit but did plan to partially backfill the pit and start some reclamation activities on the site.

Permit Modification #1648-05 was issued on February 24, 1996, and included the following:

1. Sorting facility modification, including additional sorting stations and product handling and stacking equipment for talc separation based on brightness;

2. Installation of an automated sample cutter, conveyors, large impact crusher, and fabric filter dust collector; and

3. Installation of an additional jaw crusher and conveyor to process oversize material from the vibrating grizzly.

Production rates did not change as a result of these additions. The specific pieces of new equipment were included as the last ten items in the emission inventory. The estimated increase in particulate emissions was 1.5 tons per year.

On April 17, 1998, Luzenac America submitted a permit application for the addition of a crusher, material handling equipment, and power generation equipment to crush oversized stockpiled ore. In addition, all references to the direct ship facility were removed from the permit. The crusher and associated equipment permitted in this action replaced the grizzly, oversized jaw crusher, jaw crusher conveyor #1, and jaw crusher conveyor #2 permitted in MAQP #1648-05; therefore, they were removed from the activity list under Section IV of the permit analysis.

Further, on May 22, 1998, the Department of Environmental Quality (Department) received written comments from Luzenac America. Luzenac America requested that the crusher be removed from the permit because of the facility's concern about becoming subject to 40 Code of Federal Regulations (CFR) 60, Subpart OOO. The Department removed all references to the proposed crusher. The equipment associated with the crusher was not removed.

Luzenac America also stated that the 20-Hp diesel generator listed in Section II.D.4 of the permit was actually a direct drive engine to power a conveyor. The Department changed the name of the 20-Hp diesel generator to the 20-Hp direct drive engine.

The permit was also updated to reflect equipment that was no longer at the facility and rule references that were outdated. **MAQP #1648-06** was issued on June 19, 1998, and replaced MAQP #1648-05.

On July 17, 2000, the Department received a letter from Luzenac America requesting a de minimis rule determination for the addition of an FPS pilot scale process system to the existing equipment at the facility.

The Department determined that the proposed changes would not result in an increase in potential emissions greater than 15 tons per year. Therefore, the proposed permit changes fell below the de minimis threshold (Administrative Rules of Montana (ARM) 17.8.745 (previously 17.8.705(1)(r))), and the permit action was accomplished through a permit modification.

In addition, Luzenac America indicated that the source would not be subject to New Source Performance Standards (NSPS) source testing requirements. The Department agreed with this determination because the Yellowstone Mine was not an affected facility as defined in 40 CFR Part 60, Subpart OOO. **MAQP #1648-07** was issued on October 19, 2000, and replaced MAQP #1648-06.

In a letter to the Department, dated March 20, 1998, Luzenac America requested that the Department make a de minimis determination on the operation of an optical sorter, as a test unit, operating at a capacity of 8,000 tons per year. The Department determined that potential emissions from the test project would not exceed the de minimis threshold of 15 tons per year and the project could be accomplished in accordance with this rule.

On March 26, 2001, the Department received a letter from Luzenac America requesting permit changes regarding operation of the optical sorter. The changes included removing the test status of the optical sorter and adding the optical sorter to the permitted equipment at the facility. Because Section II.B.3 of MAQP #1648-07 contained a federally enforceable screening limit of 100,000 ton/yr throughput, and because, as stated in the request letter, all material entering the optical sorter must first be screened, potential emissions from the optical sorting process were calculated based on the screening throughput limit of 100,000 tons per year.

The Department determined that the proposed changes would not result in an increase in potential emissions greater than the de minimis threshold and the permit action was accomplished in accordance with de minimis rule (previously ARM 17.8.705(1)(r)).

In addition, Luzenac America indicated that the source would not be subject to NSPS source testing requirements. The Department agreed with this determination because the Yellowstone Mine was not an affected facility as defined in 40 CFR Part 60, Subpart OOO. **MAQP #1648-08** was issued on April 25, 2001, and replaced MAQP #1648-07.

On July 23, 2001, the Department received a de minimis determination request, from Luzenac America, for the installation and operation of a 7500 cubic feet per minute (cfm) capacity dust collector to control and process emissions from the surge bins, SPS bucket elevator, surge bin vibratory feeders, and the hoods on belt transfer locations. Because the dust collector will feed directly to a pneumatic conveyor, and collected material may be utilized as product, the Department considered the new dust collector to be process equipment.

The Department determined that operation of the proposed dust collector would not result in an increase in potential particulate matter emissions greater than the de minimis threshold of 15 tons per year and the permit action was accomplished in accordance with the de minimis rule (previously ARM 17.8.705(1)(r)).

In addition, Luzenac America indicated that the source would not be subject to NSPS source testing requirements. The Department agreed with this determination because the Yellowstone Mine was not an affected facility as defined in 40 CFR Part 60, Subpart OOO. **MAQP #1648-09** was issued on September 11, 2001, and replaced MAQP #1648-08.

On March 14, 2002, the Department received a de minimis determination request from Luzenac America for the installation and operation of a dust control/product collection project that would include 4 separate dust collectors. The collectors include the previously permitted (MAQP #1648-09) 7500 actual cubic feet per minute (acfm) capacity dust collector to control and process emissions from the surge bins, SPS bucket elevator, surge bin vibratory feeders, and the hoods on belt transfer locations; a 13,000 acfm dust collector to collect and process dust from the crude loadout hopper conveying and stacking system; a 500 acfm vacuum collector to convert the positive pressure pneumatic conveyance system to a negative pressure conveyance system; and movement of the previously permitted 1250 acfm SPS Screen House collector from its current location to the end of the fines stacker. Because the previously cited dust collectors would collect material that is utilized as product, the Department considered this equipment to be process equipment.

As previously stated, the 7500 acfm dust collector controlling and collecting emissions from the Surge Bin Area was previously permitted. This collector was permitted in accordance with the de minimis rule (previously ARM 17.8.745(1)) as a separate and distinct de minimis project. However, after discussions with Luzenac America personnel, the Department determined that this collector was actually being added to the facility as part of the current dust control/product collection project. Further, the 1250 acfm SPS screen house collector is a previously permitted source, which was being moved to a new location as part of the project. The Department considers movement of the collector to be a changed condition of operation of the source and therefore; for the purpose of determining de minimis applicability, included emissions from this source into the sum total of potential emissions resulting from the operation of the overall dust control/product collection project.

The Department determined that operation of the proposed dust control/product collection project, including all 4 previously cited dust collectors, would not result in an increase in potential particulate matter emissions greater than the de minimis threshold of 15 tons per year and the current permit action can be accomplished in accordance with the de minimis rule.

Further, the March 14, 2002, submittal from Luzenac America also indicated that Section II.A.1 and Section II.A.2 of MAQP #1648-09 improperly referenced 40 CFR Part 60 (40 CFR 60), Subpart OOO.

After review of all permitted equipment at the facility, the Department determined that Luzenac America does not meet the definition of a source subject to the requirements of 40 CFR 60, Subpart OOO; therefore, as part of the permit action the Department removed the requirements in Section II.A.1 and Section II.A.2 of MAQP #1648-09 and added the generally applicable opacity requirement contained in ARM 17.8.308. In addition, the Department determined that installation and operation of the dust control/product collection project would not affect 40 CFR 60, Subpart OOO, applicability. **MAQP #1648-10** replaced MAQP #1648-09.

The Department received a letter from Luzenac America on July 9, 2003, requesting the termination of their ambient air monitoring program at the Yellowstone Mine. The Department reviewed the request and supporting information relative to the Department's October 1998 Monitoring Requirements Guidance Statement. In a letter dated August 8, 2003, the Department approved the request to discontinue monitoring, effective September 30, 2003. The permit action removed the monitoring requirements and updated the rule citations. **MAQP #1648-11** replaced MAQP #1648-10.

On December 22, 2011, the Department received a request to transfer ownership of the Yellowstone Mine from Rio Tinto Minerals/Luzenac America, Inc. to Imerys Talc America, Inc. The permit action was an administrative amendment pursuant to the ARM 17.8.764 that transferred ownership of the Yellowstone Mine. In addition to accounting for this transfer of ownership, the permit updated rule references along with the permit format. **MAQP #1648-12** replaced MAQP #1648-11.

D. Current Permit Action

On January 15, 2021, the Department received a request to transfer ownership of Imerys Talc America, Inc. to Magris Talc USA, Inc. The current permit action is an administrative amendment pursuant to the ARM 17.8.764 that transfers ownership of Imerys Talc America, Inc. – Yellowstone Mine, as requested. The Department also updated the emission inventory to include two De Minimis notifications;

1 – Waste Oil Burner, dated 10/3/2016
2 – Grizzly Feeder/Ore Handling, dated 11/20/2018

MAQP #1648-13 replaces MAQP #1648-12.

E. 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 ARM and are available, upon request, from

the Department. Upon request, the Department will provide references for locations 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 the Department, 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 the Department.

3. ARM 17.8.106 Source Testing Protocol. The requirements of this rule apply to any emission source testing conducted by the Department, 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).

   Magris Talc 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 the Department upon request.

4. ARM 17.8.110 Malfunctions. (2) The Department 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. The following ambient air quality standards or requirements apply, including, but not limited to:

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 17.8.220 Ambient Air Quality Standard for Settled Particulate Matter
6. ARM 17.8.221 Ambient Air Quality Standard for Visibility
7. ARM 17.8.222 Ambient Air Quality Standard for Lead

8. ARM 17.8.223 Ambient Air Quality Standard for PM_{10}

Magris Talc 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, Magris Talc 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 Processes. 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 not an NSPS affected source because it does not meet the definition of any NSPS subpart defined in 40 CFR 60.

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

   b. 40 CFR 60, Subpart IIII – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines. Owners and operators of stationary compression ignition internal combustion engines (CI ICE) that commence construction after July 11, 2005, where the stationary CI ICE are manufactured after April 1, 2006, and are not fire pump engines, are subject to this subpart. Based on the information submitted to the Department, the Yellowstone Mine does not include a compression ignition internal combustion engine which commenced

construction after July 11, 2005. Therefore, the facility is not an affected facility as defined in 40 CFR 60, Subpart IIII. However, engines that are added in the future may be subject to this subpart.

c. 40 CFR 60, Subpart OOO – Standards of Performance for Non-Metallic Mineral Processing Plants. In order for a facility to be subject to this subpart, the facility must meet the definition of an affected facility and, the affected equipment must have been constructed, reconstructed, or modified after August 31, 1983. Based on the information submitted by Magris Talc, the Yellowstone Mine does not include a crusher. Therefore, the facility is not an affected facility as defined in 40 CFR 60, Subpart OOO.

7. ARM 17.8.341 Emissions Standards for Hazardous Air Pollutants. The source shall comply with the standards and provisions of 40 CFR Part 61, as appropriate.

8. ARM 17.8.342 Emission Standards for Hazardous Air Pollutants for Source Categories. The source, as defined and applied in 40 CFR Part 63, shall comply with the requirements of 40 CFR Part 63, as listed below:

a. 40 CFR 63, Subpart A – General Provisions apply to all equipment or facilities subject to an NESHAP Subpart as listed below:

b. 40 CFR 63, Subpart ZZZZ – NESHAPs for Stationary Reciprocating Internal Combustion Engines (RICE). Pursuant to 40 CFR 63.6590(a), an affected source is any existing, new, or reconstructed stationary RICE located at a major or area source of HAP emissions, excluding stationary RICE being tested at a stationary RICE test cell/stand. Pursuant to 40 CFR 63.6590(a)(1)(iii), a stationary RICE located at an area source of HAP emissions is existing if you commenced construction or reconstruction of the stationary RICE before June 12, 2006. Based on the information submitted to the Department, the diesel engines to be used under this MAQP were constructed before June 12, 2006 and are subject to this subpart.

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 the Department. The current permit action is an administrative amendment and does not require a permit application fee.
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 the Department by each source of air contaminants holding an air quality permit, excluding an open burning permit, issued by the Department. 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. The Department 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. Magris Talc has a PTE greater than 25 tons per year of particulate matter with an aerodynamic diameter of 10 microns or less (PM_{10}); 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. Magris Talc was not required to submit an application for the current permit action because it is an administrative 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. An affidavit of publication of public notice was not required for the current permit action because the permit change is considered an administrative permit change.

6. ARM 17.8.749 Conditions for Issuance or Denial of Permit. This rule requires that the permits issued by the Department 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 the Department 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 Magris Talc 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 the Department'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. The current permit action is an administrative amendment

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 the Department.

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 it 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 stationary source having:

   a. PTE > 100 tons/year of any pollutant;

   b. PTE > 10 tons/year of any one Hazardous Air Pollutant (HAP), or PTE > 25 tons/year of a combination of all HAPs, or a lesser quantity as the Department may establish by rule;

   c. PTE > 70 tons/year of PM_{10} in a serious PM_{10} nonattainment area.

2. ARM 17.8.1204 Air Quality Operating Permit Program Applicability. (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 #1648-13 for Magris Talc, 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 not subject to any current NSPS.

e. This facility is subject to current NESHAP (40 CFR 63, Subpart ZZZZ).

f. This source is not a Title IV affected source.

g. This source is not solid waste combustion unit.

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

Based on these facts, the Department determined that Magris Talc is a minor source of emissions as defined under Title V. The majority of particulate emissions are fugitive and are not included in the threshold for major source applicability.

III. BACT Determination

A BACT determination is required for each new or modified source. Magris Talc shall install on any new or modified source the maximum air pollution control capability which is technically practicable and economically feasible, except that BACT shall be utilized. The current permit action is an administrative amendment and does not require BACT review.

IV. Emission Inventory

The following table lists the estimated total particulate emissions for the operation. The emission control techniques shown have previously been determined to represent BACT. Those BACT determinations are included in the previous permits.

Detailed emission calculations for the equipment permitted in previous actions follow the table. These emissions totals are included in the table.

Activity	Uncontrolled Emission Factors	Control Measures	Percent	Controlled Emissions TON/YR
Topsoil Stockpiles	0.52 g/m^2	Revegetation	75	0.01
Disturbed Areas	0.52 g/m^2	None	0	1.34
Waste and Ore Drilling	1.3 lb/hole	Cyclone	90	0.81
Ore and Waste Blasting	58.5 lb/blast	Min. Area & Overshoot	0	5.85
Ore/Waste Removal	0.01 lb/ton	Minimize Fall Distance	0	39.09

Activity	Uncontrolled Emission Factors	Control Measures	Percent	Controlled Emissions TON/YR
Ore/Waste Dumping	0.01 lb/ton	Minimize Fall Distance	0	
Johnny Gulch Mine Reclamation	0.01 lb/ton	Minimize Fall Distance	0	3.59
Ore & Waste Stockpiles	0.52 g/m^2	None	0	0.02
Haul Roads - S40 Pit to S. Waste Dump	5.06 lb/vmt	Chemical Stabilizer/Watering as Necessary	85	26.89
Haul Roads - S40 Pit to Johnny Gulch Mine	5.06 lb/vmt	Chemical Stabilizer/Watering as Necessary	85	5.94
Haul Roads - S40 Pit to Sorter	5.06 lb/vmt	Chemical Stabilizer/Watering as Necessary	85	5.94
Haul Roads - S40 Pit to Bone Stockpile	5.06 lb/vmt	Chemical Stabilizer/Watering as Necessary	85	4.66
Haul Roads - S40 Pit to N40 Pit	5.06 lb/vmt	Chemical Stabilizer/Watering as Necessary	85	14.94
Haul Roads - N. Main Pit to Sorter	5.06 lb/vmt	Chemical Stabilizer/Watering as Necessary	85	2.30
Haul Roads - N. Main Pit to S. Waste Dump	5.06 lb/vmt	Chemical Stabilizer/Watering as Necessary	85	16.26
Haul Roads - S40 & N. Main Pit to Direct Ship	5.06 lb/vmt	Chemical Stabilizer/Watering as Necessary	85	2.04
Haul Roads - N. Main Pit to Bone Stock	5.06 lb/vmt	Chemical Stabilizer/Watering as Necessary	85	1.48
Haul Roads - Product/ Direct Ship	10.17 lb/vmt	Chemical Stabilizer/Watering as Necessary	85	20.85
Pit Sorter Waste Pushed Into Johnny Gulch Pit	0.01 lb/ton	None	0	0.48
Portable Sorter Loading	0.01 lb/ton	None	0	1.82
Portable Sorter Reclaim	0.01 lb/ton	None	0	1.82

Activity	Uncontrolled Emission Factors	Control Measures	Percent	Controlled Emissions TON/YR
Access Road	0.49 lb/vmt	Chemical Stabilizer	85	0.74
Vibrating Feeder	0.01 lb/ton	None	0	2.98
Grizzly Screen	0.01 lb/ton	None	0	2.98
SPS Feed Conveyor #1	0.01 lb/ton	Covered Conveyor Transfer Pt. Enclosed In Bldg	95	0.08
SPS Screen	0.01 lb/ton	Baghouse Dust Collector Covered Conveyor	95	0.08
Undersize Conveyor #1 & #2 & Radial Stacker	0.01 lb/ton	Covered Conveyor	90	0.33
SPS Feed Conveyor #2	0.01 lb/ton	Covered Conveyor	90	0.05
SPS Bucket Elevator #1	0.01 lb/ton	Transfer Point Within Building	90	0.05
SPS Surge Bin Conveyor	0.01 lb/ton	Covered Conveyor Within Building	90	0.05
SPS Feeder #1	0.01 lb/ton	None	0	0.50
SPS Feed Conveyors #3-#4	0.01 lb/ton	Covered Conveyors Transfer for #4 in Bldg	90	0.10
Small Particle Sorter	0.01 lb/ton	Enclosed in Bldg. Baghouse Dust Collector Wet Process/Water Sprays	99.5	
SPS Waste Conveyor	0.01 lb/ton	Covered Conveyor	90	0.02
SPS Recycle Conveyor	0.01 lb/ton	Covered Conveyor Enclosed in Bldg	90	0.01
SPS Product Conveyor #1 & #2	0.01 lb/ton	Covered Conveyor	90	0.03
SPS Product Conveyor #3	0.01	Covered Conveyor	90	0.03

Activity	Uncontrolled Emission Factors	Control Measures	Percent	Controlled Emissions TON/YR
	lb/ton			
SPS Product Radial Stacker	0.01 lb/ton	Covered Conveyor	90	0.03
SPS Product Reclaim	0.01 lb/ton	Minimize Fall Distance	0	0.03
SPS Waste Reclaim	0.01 lb/ton	Minimize Fall Distance	0	0.03
MS Feed Conveyor #1	0.01 lb/ton	Covered Conveyor Transfer Pt. in Building	95	0.14
MS Surge Bin Feeders #3 & #4	0.01 lb/ton	None	0	1.38
MS Feed Conveyor #2	0.01 lb/ton	Covered Conveyor Transfer Within Building	95	0.07
MS Vibrating Screen	0.01 lb/ton	Screen House Dust Collector	95	0.07
MS Feed Conveyor	0.01 lb/ton	Enclosed in Building Water Spray	95	0.07
MS Undersize Conveyor #3	0.01 lb/ton	Covered Conveyor	90	0.01
Mechanical Sorter		Wet Process/Water Sprays Enclosed in Building	99	
MS Product Conveyor #1	0.01 lb/ton	Covered Conveyor	90	0.10
MS Product Radial Stacker	0.01 lb/ton	Covered Conveyor	90	0.10
MS Product Reclaim	0.01 lb/ton	Minimize Fall Distance	0	1.04
MS Waste Conveyor #2	0.01 lb/ton	Covered Conveyor	90	0.03
MS Waste Reclaim	0.01 lb/ton	Minimize Fall Distance	0	0.28

Activity	Uncontrolled Emission Factors	Control Measures	Percent	Controlled Emissions TON/YR
Flotation Plant	0.01 lb/ton	Wet Process Enclosed in Building	99	0.03
Laboratory & Sample Prep		Fabric Dust Collector	99.5	
Truck Vacuum System		Fabric Dust Collector	99.5	
MS Screen House Dust Collector		Fabric Dust Collector	99.5	
SPS Bldg Dust Collector		Fabric Dust Collector	99.5	
Pit Sorter Undersize Conveyor/ Screen	0.01 lb/ton	None	0	2.20
Portable Sorter - Grizzly/Screen/Convey	0.01 b/ton	None	0	5.48
Diesel Exhaust	17.7 lb/1000 gal	Operation/Maintenance	0	7.26
Unleaded Gas. Exhaust	6.06 lb/1000 gal	Operation/Maintenance	0	0.03
Propane Combustion	0.26 lb/1000 gal	Operation/Maintenance	0	0.01
High Bright Primary Conveyor	0.01 lb/ton	None	0	0.05
High Bright Stacking Conveyor	0.01 lb/ton	None	0	0.05
Low Bright Primary Conveyor	0.01 lb/ton	None	0	0.08
Low Bright Stacking Conveyor	0.01 lb/ton	None	0	0.08
Sample Impact Crusher		Fabric Dust Collector	99.5	0.04
Sample Impact Crusher		Fabric Dust Collector	99.5	0.04

Activity	Uncontrolled Emission Factors	Control Measures	Percent	Controlled Emissions TON/YR
Feed Conveyor				
Sample Impact Crusher Discharge Conveyor		Fabric Dust Collector	99.5	0.04
Hopper to Feeder (Crude Ore Loading Facility (270,000 tons/year))	0.01 lb/ton			1.35
Feeder to Transfer Conveyor (Crude Ore Loading Facility (270,000 tons/year))	0.01 lb/ton			1.35
Conveyor to Stacker (Crude Ore Loading Facility (270,000 tons/year))	0.01 lb/ton			1.35
Stacker to Stockpiles (Crude Ore Loading Facility (270,000 tons/year))	0.01 lb/ton			1.35
Screen	0.01 lb/ton	None (limited hours of operation)		0.5
Material Transfer	0.01 lb/ton	None (limited hours of operation)		3.0
Pile Forming	0.01 lb/ton	None (limited hours of operation)		1.5
Power Generation for Crushing		None (limited hours of operation)		0.044
Power Generation for Sorting Facility		None (limited hours of operation)		0.242
FPS Pilot Scale Process System	0.01 lb/ton	None		0.876
Optical Sorting Process	0.01 lb/ton	100,000 ton/yr limit	NA	6.0
Surge Bin Area Dust Collector	0.02 lb/ton	Fabric Filter Baghouse	NA	4.73
Crude Loadout Dust Collector	0.02 lb/ton	Fabric Filter Baghouse	NA	8.20
Vacuum Dust Collector	0.02	Fabric Filter Baghouse	NA	0.32

Activity	Uncontrolled Emission Factors	Control Measures	Percent	Controlled Emissions TON/YR
	lb/ton			
SPS Screen House Dust Collector	0.02 lb/ton	Fabric Filter Baghouse	NA	0.79
Waste Oil Burner		None	NA	2.658
Grizzly Feeder/Ore Handling		None	NA	.333
			Total	257.1

Emission Inventory -- MAQP #1648-06

	Ton/Year						
Source	TSP	PM-10	NO_X	VOC	CO	SO_X	
Screen	0.500	0.250	0	0	0	0	
Material Transfer		3.000	1.500	0	0	0	0
Pile Forming	1.500	0.750	0	0	0	0	
Diesel Generator (250 Hp)		0.027	0.027	1.063	0.028	0.213	0.128
Direct Drive Engine (20 Hp)		0.010	0.010	0.155	0.013	0.033	0.010
Gas Engine (Screening Motor, 40 Hp)		0.007	0.007	0.110	0.216	4.390	4.390
Diesel Engine (80 Hp)		0.088	0.088	1.240	0.101	0.267	0.082
Diesel Engine (140 Hp)		0.154	0.154	2.170	0.176	0.468	0.144
Total	5.29	2.79	4.74	0.53	5.37	4.75	

Screen

Process Rate: 11.416 ton/hr {Permit Limit of 100000 TPY}
Hours of operation: 8760 hr/yr
Number of Screens: 1 Screen

TSP Emissions:

Emission Factor: 0.01 lb/ton {Hardrock Mining Emission Factors}

Control Efficiency: 0%
Calculations: 0.01 lb/ton * 11.416 ton/hr = 0.11 lb/hr
0.11 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 0.500 ton/yr

PM-10 Emissions:

Emission Factor: 0.005 lb/ton {Hardrock Mining Emission Factors}

Control Efficiency: 0%
Calculations: 0.005 lb/ton * 11.416 ton/hr = 0.06 lb/hr
0.06 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 0.25 ton/yr

Material Transfer

Process Rate: 11.415525tons/hr {Permit Limit of 100000 TPY}
Number of Transfers 6 Transfers
Hours of operation: 8760 hr/yr

TSP Emissions:

Emission Factor: 0.01 lb/ton {Hardrock Mining Emission Factors}

Control Efficiency: 0%
Calculations: 0.01 lb/ton * 11.416 ton/hr*6 transfers = 0.68 lb/hr
0.68 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 3.000 ton/yr

PM-10 Emissions:

Emission Factor: 0.005 lb/ton {Hardrock Mining Emission Factors}

Control Efficiency: 0%
Calculations: 0.005 lb/ton * 11.416 ton/hr*6 transfers = 0.34 lb/hr
0.34 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 1.50 ton/yr

Pile Forming

Process Rate: 11.416 ton/hr {Permit Limit of 100000 TPY}
Number of Piles 3 Piles
Hours of operation: 8760 hr/yr

TSP Emissions:

Emission Factor: 0.01 lb/ton
Control Efficiency: 0%
Calculations: 0.01 lb/ton * 11.416 ton/hr*3 piles = 0.34 lb/hr
0.34 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 1.50 ton/yr

PM-10 Emissions:

Emission Factor: 0.005 lb/ton
Control Efficiency: 0%
Calculations: 0.005 lb/ton * 11.416 ton/hr*3 piles = 0.17 lb/hr
0.17 lb/hr * 8760 hr/yr * 0.0005 tons/lb = 0.75 ton/yr

Diesel Generator (250 Hp)

Hours of operation: 500 hr/yr {Permit Limit}
Number of Generators: 1 Generator

TSP Emissions:

Emission Factor: 0.106 lb/hr (Manufacturer's Information)
Calculations: 0.106 lb/hr * 500 hr/yr * 0.0005 ton/lb = 0.0265 ton/yr

PM-10 Emissions:
Emission Factor: 0.106 lb/hr (Manufacturer's Information)
Calculations: 0.106 lb/hr * 500 hr/yr * 0.0005 ton/lb = 0.0265 ton/yr

NO_x Emissions:
Emission Factor: 4.25 lb/hr (Manufacturer's Information)
Calculations: 4.25 lb/hr * 500 hr/yr * 0.0005 ton/lb = 1.06 ton/yr

VOC Emissions:
Emission Factor: 0.110 lb/hr (Manufacturer's Information)
Calculations: 0.110 lb/hr * 500 hr/yr * 0.0005 ton/lb = 0.0275 ton/yr

CO Emissions:
Emission Factor: 0.85 lb/hr (Manufacturer's Information)
Calculations: 0.850 lb/hr * 500 hr/yr * 0.0005 ton/lb = 0.213 ton/yr

SO_x Emissions:
Emission Factor: 0.513 lb/hr (AP-42,3.3-2)
Calculations: 0.513 lb/hr * 500 hr/yr * 0.0005 ton/lb = 0.128 ton/yr

Direct Drive Engine (20 Hp)
Hours of operation: 500 hr/yr {Permit Limit}
Number of Generators: 1 Generator

TSP Emissions:
Emission Factor: 0.04 lb/hr (AP-42, 3.3-1)
Calculations: 0.040 lb/hr * 500 hr/yr * 0.0005 ton/lb = 0.010 ton/yr

PM-10 Emissions:
Emission Factor: 0.04 lb/hr (AP-42, 3.3-1)
Calculations: 0.040 lb/hr * 500 hr/yr * 0.0005 ton/lb = 0.010 ton/yr

NO_x Emissions:
Emission Factor: 0.62 lb/hr (AP-42, 3.3-1)
Calculations: 0.62 lb/hr * 500 hr/yr * 0.0005 ton/lb = 0.155 ton/yr

VOC Emissions:
Emission Factor: 0.0503 lb/hr (AP-42, 3.3-1)
Calculations: 0.050 lb/hr * 500 hr/yr * 0.0005 ton/lb = 0.013 ton/yr

CO Emissions:
Emission Factor: 0.1336 lb/hr (AP-42, 3.3-1)
Calculations: 0.134 lb/hr * 500 hr/yr * 0.0005 ton/lb = 0.0334 ton/yr

SO_x Emissions:
Emission Factor: 0.041 lb/hr (AP-42, 3.3-1)
Calculations: 0.041 lb/hr * 500 hr/yr * 0.0005 ton/lb = 0.010 ton/yr

Gas Engine (Screening Motor, 40 Hp)

Hours of operation: 500 hr/yr {Permit Limit}
Number of Engines 1

TSP Emissions:
Emission Factor: 0.029 lb/hr (AP-42, 3.3-1)
Calculations: 0.029 lb/hr * 500 hr/yr * 0.0005 ton/lb = 0.00725 ton/yr

PM-10 Emissions:
Emission Factor: 0.029 lb/hr (AP-42, 3.3-1)
Calculations: 0.029 lb/hr * 500 hr/yr * 0.0005 ton/lb = 0.00725 ton/yr

NO_x Emissions:
Emission Factor: 0.44 lb/hr (AP-42, 3.3-1)
Calculations: 0.44 lb/hr * 500 hr/yr * 0.0005 ton/lb = 0.110 ton/yr

VOC Emissions:
Emission Factor: 0.864 lb/hr (AP-42, 3.3-1)
Calculations: 0.864 lb/hr * 500 hr/yr * 0.0005 ton/lb = 0.216 ton/yr

CO Emissions:
Emission Factor: 17.56 lb/hr (AP-42, 3.3-1)
Calculations: 17.560 lb/hr * 500 hr/yr * 0.0005 ton/lb = 4.39 ton/yr

SO_X Emissions:
Emission Factor: 0.024 lb/hr (AP-42, 3.3-1)
Calculations: 0.024 lb/hr * 500 hr/yr * 0.0005 ton/lb = 0.006 ton/yr

Diesel Engine (80 Hp)

Hours of operation: 1000 hr/yr {Permit Limit}
Number of Generators: 1 Generator

TSP Emissions:
Emission Factor: 0.176 lb/hr (AP-42, 3.3-1)
Calculations: 0.176 lb/hr * 1000 hr/yr * 0.0005 ton/lb = 0.088 ton/yr

PM-10 Emissions:
Emission Factor: 0.176 lb/hr (AP-42, 3.3-1)
Calculations: 0.176 lb/hr * 1000 hr/yr * 0.0005 ton/lb = 0.088 ton/yr

NO_X Emissions:
Emission Factor: 2.48 lb/hr (AP-42, 3.3-1)
Calculations: 2.48 lb/hr * 1000 hr/yr * 0.0005 ton/lb = 1.240 ton/yr

VOC Emissions:
Emission Factor: 0.2011 lb/hr (AP-42, 3.3-1)

Calculations: 0.201 lb/hr * 1000 hr/yr * 0.0005 ton/lb = 0.101 ton/yr

CO Emissions:
Emission Factor: 0.5344 lb/hr (AP-42, 3.3-1)
Calculations: 0.534 lb/hr * 1000 hr/yr * 0.0005 ton/lb = 0.2672 ton/yr

SO_X Emissions:
Emission Factor: 0.164 lb/hr (AP-42, 3.3-1)
Calculations: 0.164 lb/hr * 1000 hr/yr * 0.0005 ton/lb = 0.082 ton/yr

Diesel Engine (140 Hp)

Hours of operation: 1000 hr/yr {Permit Limit}
Number of Generators 1 Generator

TSP Emissions:
Emission Factor: 0.308 lb/hr (AP-42, 3.3-1)
Calculations: 0.308 lb/hr * 1000 hr/yr * 0.0005 ton/lb = 0.154 ton/yr

PM-10 Emissions:
Emission Factor: 0.308 lb/hr (AP-42, 3.3-1)
Calculations: 0.308 lb/hr * 1000 hr/yr * 0.0005 ton/lb = 0.154 ton/yr

NO_{Xx} Emissions:
Emission Factor: 4.34 lb/hr (AP-42, 3.3-1)
Calculations: 4.34 lb/hr * 1000 hr/yr * 0.0005 ton/lb = 2.170 ton/yr

VOC Emissions:
Emission Factor: 0.3520 lb/hr (AP-42, 3.3-1)
Calculations: 0.352 lb/hr * 1000 hr/yr * 0.0005 ton/lb = 0.176 ton/yr

CO Emissions:
Emission Factor: 0.9352 lb/hr (AP-42, 3.3-1)
Calculations: 0.935 lb/hr * 1000 hr/yr * 0.0005 ton/lb = 0.4676 ton/yr

SO_X Emissions:
Emission Factor: 0.287 lb/hr (AP-42, 3.3-1)
Calculations: 0.287 lb/hr * 1000 hr/yr * 0.0005 ton/lb = 0.144 ton/yr

Emission Inventory for MAQP #1648-07:

FPS Pilot Scale Process System

ton/yr		
Source	**PM**	**PM_{10}**
FPS Pilot Scale Processing System	**0.88**	**0.35**

Particulate Matter (PM)
Maximum Process Rate = 20 ton/hr
Hours of Operation = 8760 hr/year

Emission Factor = 0.01 lb/ton (AP-42 Table 11.24-2)
Calculations: 20 ton/hr * 0.01 lb/ton * 8760 hr/yr * 0.0005 ton/lb = 0.88 ton/yr

PM_{10}
Maximum Process Rate = 20 ton/hr
Hours of Operation = 8760 hr/year
Emission Factor = 0.004 lb/ton (AP-42 Table 11.24-2)
Calculations: 20 ton/hr * 0.004 lb/ton * 8760 hr/yr * 0.0005 ton/lb = 0.35 ton/yr

Emission Inventory for MAQP #1648-08

- Optical Sorting Process

ton/yr		
Source	**PM**	**PM_{10}**
Material Transfer	4.50	1.80
Pile Forming	1.00	0.40
Bulk Loading	0.50	0.20
Total	**6.00**	**2.40**

Material Transfer

Production Limit: 100,000 ton/yr (Permit Limit)
Transfers: 9 Material Transfers

PM Emissions
Emission Factor: 0.01 lb/ton (AP-42, 11.24-2)
Calculations: 0.01 lb/ton * 100,000 ton/yr * 0.0005 ton/lb * 9 Transfers = 4.50 ton/yr

PM_{10} Emissions
Emission Factor: 0.004 lb/ton (AP-42, 11.24-2)
Calculations: 0.004 lb/ton * 100,000 ton/yr * 0.0005 ton/lb * 9 Transfers = 1.80 ton/yr
Pile Forming

Production Limit: 100,000 ton/yr (Permit Limit)
Number of Piles: 2 Piles

PM Emissions
Emission Factor: 0.01 lb/ton (AP-42, 11.24-2)
Calculations: 0.01 lb/ton * 100,000 ton/yr * 0.0005 ton/lb * 2 piles = 1.00 ton/yr

PM_{10} Emissions
Emission Factor: 0.004 lb/ton (AP-42, 11.24-2)
Calculations: 0.004 lb/ton * 100,000 ton/yr * 0.0005 ton/lb * 2 piles = 0.40 ton/yr

Bulk Loading

Production Limit: 100,000 ton/yr (Permit Limit)

PM Emissions
Emission Factor: 0.01 lb/ton (AP-42, 11.24-2)
Calculations: 0.01 lb/ton * 100,000 ton/yr * 0.0005 ton/lb = 0.50 ton/yr

PM_{10} Emissions
Emission Factor: 0.004 lb/ton (AP-42, 11.24-2)
Calculations: 0.004 lb/ton * 100,000 ton/yr * 0.0005 ton/lb = 0.20 ton/yr

Emission Inventory for MAQP #1648-09

- Surge Bin Area Dust Collector (7500 cfm)

Ton/yr	
Source	**PM/PM_{10}**
Surge Bin Area Dust Collector (7500 acfm)	4.73

Flow Rate Correction
Actual Pressure: 23.85 in Hg.
Standard Pressure: 29.92 in. Hg.
Flow Rate (acfm): y_2
Standard Temperature: 293.15 K
Actual Temperature: 278.00 K
Hours of Operation: 8760 hrs/year
Correction Equation: dscfm = N(P2/P1)(T1/T2)
where P1 is standard pressure; P2 is actual pressure; T1 is standard temp.; and T2 is actual temp.
Emission Factor: 0.02 gr/dscf (40 CFR 60 – EPA Guidance for fabric filter dust collection)
Assumption:Talc process is a dry process so there is no correction needed from ascf to dscf

Surge Bin Area Dust Collector (7500 acfm)

PM/PM_{10} Emissions

7500 acfm (23.85 in. Hg / 29.92 in. Hg)(293.15 ºK / 278.00 ºK) = 6304.25 dscfm
0.02 gr/dscf * 6304.25 dscfm * 8760 hr/year * 60 min./hr * 1 lb/7000 gr. * 0.0005 ton/lb = 4.73 ton/yr.

Emission Inventory for MAQP #1648-10

- Dust Control/Product Collection Project

Ton/yr	
Source	**PM/PM_{10}**
Surge Bin Area Dust Collector (7500 acfm)	4.73
Crude Load Out Dust Collector (13000 acfm)	8.20
Vacuum Collector (1250 acfm)	0.32

SPS Screen House Collector (450 acfm)	0.79
Total	**14.04**

Flow Rate Correction
Actual Pressure: 23.85 in Hg.
Standard Pressure: 29.92 in. Hg.
Flow Rate (acfm): y_2
Standard Temperature: 293.15 K
Actual Temperature: 278.00 K
Hours of Operation: 8760 hrs/year
Correction Equation: dscfm = N(P2/P1)(T1/T2) where P1 is standard pressure; P2 is actual pressure; T1 is standard temp.; and T2 is actual temp.
Emission Factor: 0.02 gr/dscf (40 CFR 60 – EPA Guidance for fabric filter dust collection)
Assumption: Talc process is a dry process so there is no correction needed from ascf to dscf

Surge Bin Area Dust Collector (7500 acfm)

PM/PM_{10} Emissions

7500 acfm (23.85 in. Hg / 29.92 in. Hg)(293.15 ºK / 278.00 ºK) = 6304.25 dscfm
0.02 gr/dscf * 6304.25 dscfm * 8760 hrs/year * 60 min./hr * 1 lb/7000 gr. * 0.0005 ton/lb = 4.73 ton/yr.

Crude Load Out Dust Collector (13000 acfm)

PM/PM_{10} Emissions

13000 acfm (23.85 in. Hg / 29.92 in. Hg)(293.15 ºK / 278.00 ºK) = 10927.36 dscfm
0.02 gr/dscf * 10927.36 dscfm * 8760 hrs/year * 60 min./hr * 1 lb/7000 gr. * 0.0005 ton/lb = 8.20 ton/yr.

Vacuum Collector (500 acfm)

PM/PM_{10} Emissions

500 acfm (23.85 in. Hg / 29.92 in. Hg)(293.15 ºK / 278.00 ºK) = 420.28 dscfm
0.02 gr/dscf * 420.28 dscfm * 8760 hrs/year * 60 min./hr * 1 lb/7000 gr. * 0.0005 ton/lb = 0.32 ton/yr.

SPS Screen House Collector (1250 acfm)

PM/PM_{10} Emissions

1250 acfm (23.85 in. Hg / 29.92 in. Hg)(293.15 ºK / 278.00 ºK) = 1050.71 dscfm
0.02 gr/dscf * 1050.71 dscfm * 8760 hrs/year * 60 min./hr * 1 lb/7000 gr. * 0.0005 tons/lb = 0.79 tons/yr.

Waste Oil Burner

Filterable PM Emissions:
Emission Factor = 66A lb/10^3 gal (AP 42, Table 1.11-1, Atomizing Burner, 10/96)
A = Ash % in fuel = 1.11 % (laboratory analysis)
Emission Factor = 66*1.11= 73.26 lb/10^3 gal (AP 42, Table 1.11-1, Atomizing Burner, 10/96)
Calculation: (0.00250 10^3 gal/hr) * (8760 hrs/yr) * (73.26 lb/10^3 gal) * (ton/2000 lb) = 0.802 ton/yr

Filterable PM10 Emissions:
Emission Factor = 57A lb/10^3 gal (AP 42, Table 1.11-1, Atomizing Burner, 10/96)
A = Ash % in fuel = 1.11 % (laboratory analysis)
Emission Factor = 57*1.11= 63.27 lb/10^3 gal (AP 42, Table 1.11-1, Atomizing Burner, 10/96)
Calculation: (0.00250 10^3 gal/hr) * (8760 hrs/yr) * (63.27 lb/10^3 gal) * (ton/2000 lb) = 0.693 ton/yr

Filterable PM2.5 Emissions:
Emission Factor = 63.27 (No factor found, assume PM2.5 = PM10 for conservative estimate)
Calculation: (0.00250 10^3 gal/hr) * (8760 hrs/yr) * (63.27) * (ton/2000 lb) = 0.693 ton/yr

Lead Emissions:
Emission Factor = 50L lb/10^3 gal (AP 42, Table 1.11-1, Atomizing Burner, 10/96)
L = Lead % in fuel = 0.0057 % (estimate from IMERYS research (55 ppm), lab analysis < DL)
Emission Factor = 50*0.0057= 0.285 lb/10^3 gal (AP 42, Table 1.11-1, Atomizing Burner, 10/96)
Calculation: (0.00250 10^3 gal/hr) * (8760 hrs/yr) * (0.285 lb/10^3 gal) * (ton/2000 lb) = 0.003 ton/yr

CO Emissions:
Emission Factor = 2.1 lb/10^3 gal (AP 42, Table 1.11-1, Atomizing Burner, 10/96)
Calculation: (0.00250 10^3 gal/hr) * (8760 hrs/yr) * (2.1 lb/10^3 gal) * (ton/2000 lb) = 0.023 ton/yr

NOx Emissions:
Emission Factor = 16 lb/10^3 gal (AP 42, Table 1.11-1, Atomizing Burner, 10/96)
Calculation: (0.00250 10^3 gal/hr) * (8760 hrs/yr) * (16 lb/10^3 gal) * (ton/2000 lb) = 0.175 ton/yr

SO2 Emissions:
Emission Factor = 107S lb/10^3 gal (AP 42, Table 1.11-2, Atomizing Burner, 10/96)
S = Sulfur % in fuel = 0.22 % (laboratory analysis)
Emission Factor = 107*0.22= 23.54 lb/10^3 gal (AP 42, Table 1.11-2, Atomizing Burner, 10/96)
Calculation: (0.00250 10^3 gal/hr) * (8760 hrs/yr) * (23.54 lb/10^3 gal) * (ton/2000 lb) = 0.258 ton/yr

TOC Emissions:
Emission Factor = 1 lb/10^3 gal (AP 42, Table 1.11-3, Atomizing Burner, 10/96)
Calculation: (0.00250 10^3 gal/hr) * (8760 hrs/yr) * (1 lb/10^3 gal) * (ton/2000 lb) = 0.011 ton/yr

Grizzly Feeder/Ore Handling

1. Ore handling
2. Grizzly

Source: AP-42, 11.19.2-2, August 2004

Sample Calculation: 596,000 tons/yr *(0.000016 lb/ton) * number of transfer points / 2000 lb/ton = 0.005 ton/yr

Emissions componer	Emitting Unit	Process Rate (tons/yr)	Emiss. Factor (lb/ton)	Number of Transfer points	Source Classification Code	Annual PM-10 Emissions (tons/yr)
1	Ore handling (loader bucket to Grizzly)	596,000	1.60E-05	1	3-05-020-31	0.005
2	Grizzly to conveyor or oversize to ground	596,000	1.10E-03	1	3-05-020-06	0.328
					Total:	0.333

Note: Annual process rate is based on the operating capacity of the existing grizzly system, which will be fed by the conveyor on the portable grizzy. Refer to MAQP #1648-12 Analysis, Part IV, Emissions Inventory, Grizzly Screen.

- A complete emission inventory for Magris Talc is on file with the Department.

V. Existing Air Quality

The Magris Talc – Yellowstone Mine, is located in Sections 4 and 9, Township 9 South, Range 1 West, Madison County, Montana. The existing air quality of the project location is considered in attainment for all regulated air pollutants.

VI. Ambient Air Impact Analysis

The Department determined that there will be no impacts from this permitting action because this permitting action is considered an administrative action. Therefore, the Department believes this action will not cause or contribute to a violation of any ambient air quality standard.

VII. Taking or Damaging Implication Analysis

As required by 2-10-105, MCA, the Department conducted the following private property taking and damaging assessment.

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 also 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, the Department determined there are no taking or damaging implications associated with this permit action.

VII. Environmental Assessment

This permitting action will not result in an increase of emissions from the facility and is considered an administrative action; therefore, an Environmental Assessment is not required.

Permit Analysis Prepared by: John P. Proulx
Date: February 3, 2021