December 5, 2025

Name of Permittee: United States Antimony Corporation

Facility Name: Thompson Falls Facility

Physical Site Location: Section 29, Township 21 North, Range 31 West

Sent via email: jfink@usantimony.com

RE: Department Decision on MAQP Application #2973-05

The Montana Department of Environmental Quality (DEQ) has issued a Decision, with conditions, on Montana Air Quality Permit (MAQP) application #2973-05 for the above-named permittee.

The Decision may be appealed to the Board of Environmental Review (Board). A request for a hearing must be filed by December 22, 2025. This permit shall become final on December 23, 2025, unless the Board orders a stay on the permit.

Procedures for Appeal: Any person who is directly and adversely affected by the Decision may request a hearing before the Board. The appeal must be filed before the final date stated above. The request for a hearing must contain an affidavit setting forth the grounds for the request. The hearing will be held under the provisions of the Montana Administrative Procedures Act. Submit requests for a hearing to: Chairman, Board of Environmental Review, P.O. Box 200901, Helena, Montana 59620 or the Board Secretary: DEQBERSecretary@mt.gov.

Conditions: See attached Decision on MAQP #2973-05.

For DEQ,

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MONTANA AIR QUALITY PERMIT

Issued To: U.S. Antimony Corporation.
P. O. Box 643
Thompson Falls, MT 59873

MAQP: 2973-05
Application Complete: 10/07/2025
Preliminary Determination Issued: 11/10/2025
DEQ's Decision Issued: 12/05/2025
Permit Final:

A Montana Air Quality Permit (MAQP), with conditions, is hereby granted to United States Antimony Corporation (U.S. Antimony), 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

U.S. Antimony operates an antimony oxide production facility, including an Oxide Production Plant, a Reduction Production Plant, and a Sodium Antimony Plant. The facility is located in Section 29, Township 21 North, Range 31 West, in Sanders County, Montana. A list of permitted equipment is contained in Section I.A. of the permit analysis.

B. Current Permit Action

On September 3, 2025, pursuant to the applicable requirements of ARM 17.8.748, the Montana Department of Environmental Quality (DEQ) received an application from Power Engineers, Inc., on behalf of U.S. Antimony, to modify MAQP #2973-04. The requested modification includes the upgrade of the baghouses for the existing equipment, which includes: four (4) 0.85 million British thermal unit per hour (MMBtu/hr) reduction furnaces, the 0.85 MMBtu/hr remelt furnace, the 0.85 MMBtu/hr oxidizer furnace, and the existing building ventilation system, adds five (5) 3.0 million British thermal unit per hour (MMBtu/hr) reduction furnaces, two (2) 3.0 MMBtu/hr remelt furnaces, two (2) 3.0 MMBtu/hr oxidizer furnaces, as well as multiple process conveyors and product bins. The modification request also adds new fabric filter baghouses as process equipment and to control particulate matter emissions from each of the proposed furnaces, product bins, and material handling conveyors.

The baghouses are considered process equipment because they will recover antimony from the smelting process. Antimony is both U.S. Antimony's product and a hazardous air pollutant (HAP). Therefore, for the purposes of the current permit action, the baghouses constitute BACT for the control of particulate matter emissions (i.e., antimony) and process equipment for the purpose of determining potential to emit (PTE) for HAPs. Because facility-wide PTE falls below Federal Title V Operating Permit threshold limits, U.S. Antimony is a minor source of HAPs.

Section II: Conditions and Limitations

A. Emission Limitations

1. U.S. Antimony shall install and operate fabric filter baghouse(s) to control Particulate Matter (PM) from all reduction furnaces, remelt furnaces, oxidizer furnaces, and emissions from the crude oxide bin and product oxide bin (ARM 17.8.752).

2. PM emissions from all reduction furnaces, remelt furnaces, oxidizer furnaces, along with emissions from the crude oxide bin and product oxide bin, and conveyance and material handling shall be limited to 0.002 grains per dry standard cubic foot (gr/dscf) (ARM 17.8.752).

3. U.S. Antimony shall install and operate baghouse(s) to control PM emissions from product building ventilation within the facility (ARM 17.8.752).

4. PM emissions that result from building ventilation within the facility shall be limited to 0.001 grains per dry standard cubic foot (gr/dscf) (ARM 17.8.752).

5. U.S. Antimony shall install low-NO_X burners on all new reduction, remelt, and oxidizer burners for the control of Oxides of Nitrogen (NO_X) (ARM 17.8.752).

6. U.S. Antimony shall utilize good combustion practices including optimized burner design, proper air-to-fuel ratio, and regular maintenance plans for control of Carbon Monoxide (CO) and Volatile Organic Compounds (VOC) (ARM 17.8.752).

7. U.S. Antimony shall use low sulfur propane fuel along with good combustion practices for control of oxides of sulphur (SO_X) (ARM 17.8.752).

8. Emissions from the combustion of propane to operate the reduction, remelt, and oxidizer burners shall not exceed the following limitations (ARM 17.8.752)

   - $PM_{Filterable}$ – 0.002 gr/dscf
   - PM_{Cond} – 0.0055 lb/MMBtu
   - NO_X – 0.085 lb/MMBtu
   - CO – 0.082 lb/MMBtu
   - SO_X – 0.001 lb/MMBtu
   - VOC – 0.011 lb/MMBtu

9. Visible emissions from the baghouse(s) shall be limited to 10% opacity (ARM 17.8.749).

10. Fugitive dust emissions from the production, handling, transportation, or storage of any material shall be limited to 20% opacity. U.S. Antimony shall use reasonable precautions to control fugitive emissions (ARM 17.8.308).

B. Testing Requirements

1. Within 60 days, but no later than 180 days after initial startup of all new reduction, remelt, and oxidizer furnaces, U.S. Antimony shall conduct an Environmental Protection Agency (EPA) Method 1 through 4 and Method 5 Test, or equivalent, and an EPA Method 202 Test, on all reduction, remelt, and oxidization furnaces, to verify compliance with the limits contained in Section II.A.2, II.A.4, and II.A.8 of this permit. (ARM 17.8.105)

   After the initial source testing requirement is completed, U.S. Antimony shall conduct additional source testing to verify compliance with the limits contained in Section II.A.2, II.A.4, and II.A.8 of this permit, as specified below (ARM 17.8.105 and ARM 17.8.749):

   a. U.S. Antimony shall test one (1) reduction furnace, one (1) remelt furnace, and one (1) oxidization furnace per 4-year source test cycle.
   b. U.S. Antimony shall not test the same furnace consecutively per 4-year source test cycle.
   c. U.S. Antinomy shall test the facility and material handing baghouse initially and once every 4 years thereafter

2. U.S. Antimony shall conduct weekly visual surveys of all emitting points at the facility to verify compliance with opacity limitations contained in Section II.A.9 and 10. If visible emissions are present, an EPA Method 9 opacity test shall be performed (ARM 17.8.340).

3. US Antimony shall install, operate, and monitor devices to detect damaged bags within the baghouse during times of operation (ARM 17.8.749).

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

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

C. Operational Reporting Requirements

1. U.S. Antimony 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).

2. U.S. Antimony 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. U.S. Antimony shall submit to DEQ, any Method 9 opacity test results pursuant to Section II.B.2 within 5 business days of the opacity test being conducted (ARM 17.8.749).

4. All records compiled in accordance with this permit must be maintained by U.S. Antimony 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 (ARM 17.8.749).

SECTION III: General Conditions

A. Inspection – U.S. Antimony 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 (CEMS, 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 U.S. Antimony fails to appeal as indicated below.

C. Compliance with Statutes and Regulations – Nothing in this permit shall be construed as relieving U.S. Antimony 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 U.S. Antimony 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
United States Antimony Corp.
MAQP #2973-05

I. Introduction/Process Description

United States Antimony Corp. (U.S. Antimony) owns and operates an antimony oxide production facility. The facility is located in Section 29, Township 21 North, Range 31 West, in Sanders County, Montana.

A. Permitted Equipment

U.S. Antimony owns and operates an antimony oxide production facility, including an Oxide Production Plant, a Reduction Production Plant, and a Sodium Antimony Plant. The facility consists of nine (9) 3.0 million British thermal unit per hour (MMBtu/hr) furnaces, six (6) 0.85 MMBtu/hr furnaces, as well as multiple process conveyors and two (2) oxide bins.

B. Source Description

The primary operation at the facility is the production of antimony oxide. Nine (9) 3.0 MMBtu furnaces and six (6) 0.85 MMBtu furnaces are used to reduce antimony oxide into antimony metal using coal as well to oxidize antimony metal (containing 99.8% antimony) to antimony trioxide. Each furnace is equipped with a baghouse, which collects the antimony trioxide. There are two (2) baghouses used for ventilation of the building facility.

C. Permit History

Permit #220 was issued to U. S. Antimony Corp. on September 18, 1970, for a portable crusher, a heavy media separator, and a flotation concentrator. This equipment was not in operation for a number of years.

Permit #2973-00 was issued to U. S. Antimony on December 19, 1996, for an antimony oxide production facility. The permit replaced Permit #220 and is a synthetic minor permit for Title V operating permit purposes.

Permit #2973-01 was issued to U. S. Antimony on March 12, 1997, for a change to some of the furnace and baghouse configurations with a slight reduction in emissions.

On February 7, 1999, the Department of Environmental Quality (DEQ) issued U.S. Antimony a modification of Permit #2973-01. One baghouse was moved and two baghouses were added under the Administrative Rules of Montana (ARM) 17.8.705(1)(r). The ventilation baghouse #1 was changed to the reduction furnace baghouse #2. A new ventilation baghouse was added, as well as a reduction furnace baghouse #3.

The new ventilation baghouse #1 was added to the sodium antimonate building under direction of OSHA. The flow rate of the fan was 2500 dscfm, but the flow rate through the baghouse was significantly less. It was designed to trap fugitive dust within the plant, and would run intermittently.

The reduction furnace baghouse #3 was an alternate baghouse with a fan capacity of 2500 dscfm proposed for the reduction plant. This system would be used periodically for the recasting of metal. The production of dust during the short time of its operation would be minimal.

In addition, Section II.C of Permit #2973-01 incorrectly identified the allowable annual emissions. The allowable annual emissions were calculated using the air flow rate and the allowable emission rate. Permit #2973-01 stated that the allowable emissions were 9.76 tons per year, but the corrected value is 9.29 tons per year. **Permit #2973-02** replaced Permit #2973-01.

The permit action was a modification of Permit #2973-02. U.S. Antimony requested that DEQ lower the emissions limit in Permit #2973-02 from 0.02 grains per dry standard cubic foot (gr/dscf) to 0.01 gr/dscf. In addition, DEQ raised the air flow rate through the baghouses from 6.5×10^9 dscf to 1.35×10^{10} dscf during any 12-month rolling time period. With these two conditions changed, U.S. Antimony remained below the Title V emission regulation of 10 tons per year of any Hazardous Air Pollutant (HAP).

U.S. Antimony reconfigured their equipment to refine the process of antimony oxide production. DEQ updated the permit language and the facility's equipment list to reflect operating conditions of the equipment. **Permit #2973-03** replaced Permit #2973-02.

During a DEQ review, DEQ staff discovered that MAQP #2973-03 was missing a necessary administrative rule reference for the authority to use enforceable permit conditions to limit a source's potential emissions to below the Title V major source threshold. Because U.S. Antimony accepted limits on maximum dry standard cubic feet of air flow in its MAQP to stay below the Title V permit threshold for HAPs, DEQ established such limits in the MAQP. These limits were missing the required reference of ARM 17.8.1204 which describes DEQ's authority to establish limits for this purpose. MAQP #2973-04 adds this rule reference as well as updates Administrative Rules of Montana (ARM) rule references and permit language currently used by DEQ. **MAQP #2973-04** replaced MAQP #2973-03.

D. Current Permit Action

On September 3, 2025, pursuant to the applicable requirements of ARM 17.8.748, DEQ received an application from Power Engineers, Inc. (Power), on behalf of U.S., Antimony, to modify MAQP #2973-04.

On September 11, 2025, DEQ issued an incompleteness letter to U.S. Antimony, requesting a complete Best Available Control Technology analysis and determination. Power submitted the BACT analysis to DEQ on October 7, 2025.

The requested modification includes the upgrade of the baghouses for the existing equipment, which includes: four (4) 0.85 million British thermal unit per hour (MMBtu/hr) reduction furnaces, the 0.85 MMBtu/hr remelt furnace, the 0.85 MMBtu/hr oxidizer furnace, and the existing building ventilation system, and also adds five (5) 3.0 million British thermal unit per hour (MMBtu/hr) reduction furnaces, two (2) 3.0 MMBtu/hr remelt furnaces, two (2) 3.0 MMBtu oxidizer furnaces, as well as multiple process conveyors. The modification request also adds new baghouses to control particulate matter from the furnaces and conveyors. The new baghouses control and collect antimony emissions from the process furnaces. Since antimony is recovered from the baghouses, the control efficiency for the associated baghouses is included with the facilities Potential to Emit (PTE) for Hazardous Air Pollutants (HAPs), more specifically, antimony.

As a result of product recovery from the baghouse and improved control efficiency, the facility PTE for antimony is below 10 tons per year and therefore falls below Federal Title V Operating Permit threshold limits for HAPs. U.S. Antimony is now considered a minor source of HAP emissions pursuant to the Title V program. Further, legally enforceable permit limitations to reduce emissions of antimony to below 10 tpy are no longer necessary because of the control efficiency associated with the process baghouses, therefore, U.S. Antimony is no longer required to annually certify that their emissions of antimony are below 10 tpy. **MAQP #2973-05** replaces MAQP 2973-04.

E. Response to Public Comments

Person/Group Commenting	Permit Reference	Comment	DEQ Response
Power Engineers and United States Antimony Corporation	MAQP, Section I.B – Current Permit Action and MAQP Analysis, Section I.A and I.B.	"The permit has five 3 MMBTU furnaces and four 0.85 MMBTU that are presumably the new furnaces, but ALL 9 of the new furnaces are 3.0MMBTU, and the six existing furnaces are the ones that are 0.85 MMBTU"	Thank you for your comment. DEQ corrected the btu rating and number of furnaces in the permit and permit analysis.
		"please add this language to the beginning of the second sentence "The requested modification includes the upgrade of the baghouses for the existing equipment, which includes: four (4) 0.85 million British thermal unit per hour (MMBtu/hr) reduction furnaces, the 0.85 MMBtu/hr remelt furnace, the 0.85 MMBtu/hr oxidizer furnace, and the existing	Thank you for your comment. DEQ made the requested change

		building ventilation system, and also adds five (5) 3.0 million...:	
	MAQP Section II.A.4	Page 2, item 4 – building ventilation emissions should be .001gr/dscf	Thank you for your comment. DEQ made the requested change
	MAQP Section II.A.5	"Please add the following sentence as follows "U.S. Antimony shall install low-NOx burners on all of the new reduction, remelt, and oxidizer furnaces for the control of ..."	Thank you for your comment. DEQ made the requested change
	MAQP, Section II.B.1(a-c)	"0.002 gr/dscf was proposed for the bin vents	Thank you for your comment. DEQ made the change to reflect proposed BACT limit.
		"Is it necessary for the initial testing of EVERY furnace baghouse? That is a lot of tests of identical equipment. 15 stack tests if we need to test the existing furnace lines, too. Could we do something like test 1/3 of them, and as long as all pass, we are good, and if one fails, we need to retest the one, and test all of them?"	Thank you for your comment. DEQ has determined that because the pollutant, antimony, is considered a Hazardous Air Pollutant, source testing of all new furnaces to determine compliance with Best Available Control Technology emissions limits was appropriate. DEQ also modified the language within the section to clarify which furnaces will be tested for initial compliance.
	MAQP, Section II.B.2	"Just to make sure I am clear, the weekly opacity visual inspections don't need to be any particular method, they are just are the opacities zero or non-zero, and if non-zero, we need to do a method 9, and report the results to you within 5 days? I would also assume we need to take some level of intervention any time we have non-zero opacity, with the low .002 gr/dscf, we are certainly over that with any visible emissions.	Thank you for your comment. Weekly visual opacity observations do not need to be in compliance with EPA Method 9 standards. However, if visible emissions are observed, an EPA Method 9 test shall be completed. U.S. Antimony will need to have an employee or contracted services that are EPA Method 9, Visual Opacity certified to complete the Method 9 test in the event that visual emissions are observed.

		On the Method 9 subject, we currently have no one trained on Method 9 here (I have been, but I'm about a year out of date on my practical tests), and as far as I can tell, I can't find any place to get certified until late March of next year, and we should be operating well before then. Could we, until that time, just work to keep the opacities at zero, and report anytime we are not? I could always perform the method 9's, and of course, I could be a bit off, but as mentioned above, I think we essentially need to operate at zero anyway…"	
	MAQP Section II.B.3	On the monthly preventative maintenance, would an internal inspection really be required in each monthly inspection? We ordinarily would not shut down equipment that often and would reserve an internal inspection for if we saw opacity issues, or a much less frequent inspection. Our plan is to have broken bag detectors to tell us if we have issues with bags as well.	Thank you for your comment. DEQ changed condition II.B.3 to require the installation of broken bag detectors.
	MAQP Analysis – Section I.D	"Third paragraph, first sentence, please add this language to the beginning of the sentence: "The requested modification includes the upgrade of the baghouses for the existing equipment, which includes: four (4) 0.85 million British thermal unit per hour (MMBtu/hr) reduction furnaces, the 0.85 MMBtu/hr remelt furnace, the 0.85 MMBtu/hr oxidizer furnace, and the existing	Thank you for your comment. DEQ made the requested change

		building ventilation system, and also adds five (5) 3.0 million...""	
	MAQP Analysis, Section IV – Emissions Inventory	"antimony emissions from the existing facility (5) Reduction furnaces and the Building Ventilation system (six new baghouses on the existing emission units) were not included in the emission calculations.	Thank you for your comment. DEQ included the emissions from the furnaces in the Potential to Emit Summary table as "Antimony Refinement (existing)".
		The antimony emissions for the existing and expansion facilities in the Proposed Action result in 6.48 tpy from the expansion of the existing facility, and the antimony emissions from the existing (modified) Reduction Furnaces and the existing Building Ventilation baghouse that are not addressed, which is 2.78 tpy. Hence, the total antimony emissions from the Project is (6.48 + 2.78 = 9.26 tpy), and would be less than 10 tpy."	Thank you for your comment. DEQ corrected the Emissions Inventory
		"Page 24, IV. Emission Inventory: what is the basis for the HAPs value = 6.66 tpy? : The 6.66 tpy value (for the expansion facility) is 0.16 tpy higher than the 6.48 tpy value in the calculations submitted" & "Page 25 on the building ventilation baghouse calculations, the total emissions should be half that with the 0.001 gr/dscf plugged in." & "Page 25 calculations – I don't see any calculation for the new building ventilation baghouse for the existing	

		building (35,000 cfm at 0.001 gr/dscf). “	
	Environmental Assessment	” Page 3 in the EA, Direct Impacts; there is a similar table with the HAPs value of 6.66 tpy”	Thank you for your comment. DEQ made the requested change
	Environmental Assessment	“Page 20 of the EA, Conclusions and Findings, 3rd paragraph, please remove the word "replace".”	Thank you for your comment. DEQ made the requested change
Steve Gunderson	MAQP	Letter detailing the current permit action and “applauding US Antimony to maintain, meet and exceed, strict air quality standards while increasing the capacity of its smelter facility”.	Thank you for your comment. No action taken.
Montana Environmental Information Center	MAQP and MAQP Analysis	While the new permit includes formulas for emissions calculation, the prior permit does not. Please provide a detailed side-by-side emissions inventory (old vs. proposed), including assumptions, control device efficiencies, and any changes in operations that justify reductions. Without a transparent, apples-to-apples comparison, it is difficult for the public to assess whether the claimed reductions are credible or adequately protective.	Thank you for your comment. The prior permit action, MAQP #2973-04, did not affect the emissions inventory. Therefore, DEQ has included the emissions inventory prepared for MAQP #2973-03 (see Permit Analysis, § IV, Emission Inventory). MAQP #2973-03 modified the existing permit by lowering the allowable emissions limit/rate from 0.02 grains per dry standard cubic feet (gr/dscf) to 0.01 gr/dscf of air flow through the baghouses. In addition, the permit action increased the allowable cumulative air flow rate through the baghouses from 6.5×10^9 dscf/year to 1.35×10^{10} dscf/year. As noted, prior air quality permits issued to U.S. Antimony operations established an enforceable facility-wide antimony emission limit based on the allowable particulate matter (antimony compounds) emission rate expressed in gr/dscf of air flow through the baghouses, as

			limited by the maximum allowable cumulative air flow rate through the baghouses on an annual basis. In effect, prior permits established an enforceable annual, cumulative emission rate for the purpose of becoming a synthetic minor source of HAPs by ensuring potential antimony emissions were below the Title V permitting threshold for an individual HAP (antimony) of 10 tons per year. Under the current permit action, U.S. Antimony is proposing to replace all existing baghouses with new, state-of-the-art, highly efficient baghouses with a BACT-determined allowable emission rate of 0.002 gr/dscf. Because the new baghouses are much more efficient than the previously permitted baghouses (0.01 gr/dscf), U.S. Antimony is now a true minor source of HAPs (antimony) without the need for an annual, cumulative limit on air flow through the baghouses. Further, because the baghouses constitute both process equipment and BACT, the replacement of existing baghouses constitutes new emitting units. Pursuant to ARM 17.8.752, all *new* or *modified* emitting units require a BACT analysis and determination. Because the current permit action relies on the BACT-determined emission rate applicable to the proposed new baghouses without consideration for the existing baghouses, the prior permit actions have nothing to do with and no effect on the proposed new, improved baghouse efficiencies.
		If DEQ is relying on more efficient pollution control (e.g., new baghouses), that	The Best Available Control Technology Analysis and Determination (Section III,

		should be clearly explained, with performance data, control efficiency, and monitoring mechanisms.	MAQP Analysis), was submitted as part of the complete application for the current permit action. The BACT analysis provided a 5 step, top-down analysis of available control technologies. Based on this analysis, DEQ determined the proposed baghouses with an emission limit of 0.002 gr/dscf constitute BACT for the control of antimony, which also constitutes a manufacturers guarantee. Further, DEQ is requiring U.S. Antimony to install and operate monitoring devices to detect broken or leaking bags within the baghouse; requires U.S. Antimony to conduct weekly visual surveys to detect visible emissions and, if emissions are observed, to conduct an EPA Method 9 test and to submit that test to DEQ within 5 business days. Further, with consideration for the above-described checks on baghouse operations and maintenance, the ongoing source testing of a representative number of the affected baghouses is required on an appropriate schedule established by DEQ.
		If the emissions reductions conclusions rest primarily on new or upgraded pollution control devices (such as baghouses), DEQ should condition the permit on demonstrated performance over multiple tests and across all units.	DEQ has required initial source testing of all new furnaces along with the installation of devices in each baghouse to detect damaged bags within the baghouse. Because all the baghouses are the same make and model, following the initial source testing requirement for each new baghouse DEQ determined that ongoing source testing of one baghouse from each of the reduction, remelt, and oxidization furnaces on an approved DEQ testing schedule, along with weekly visual surveys and monitoring for leaking or broken

			bags is sufficient to demonstrate baghouse performance and compliance status of the affected units.
		Given past concerns about the company's leadership and its track record, DEQ should carefully consider the reliability of U.S. Antimony's compliance. The permit must not assume that the company will always act in good faith. DEQ should strengthen the permit by adding conditions that reflect accountability. For example, stricter violation reporting, more frequent inspections, or bonding and financial assurance that take into account the company's history.	DEQ conducted a Full Compliance Inspections (FCE) on 6-23-2023 and previously on 7-14-2014. DEQ also conducted Partial Compliance Inspections on 1-18-2017, 7-19-2019, and 7-19-2022. All reports state that U.S. Antimony is in full compliance with their MAQP with the exception of the FCE dated 7-14-2014. During that FCE, DEQ noted that U.S. Antimony submitted their required reports late. DEQ is not aware of any other related or historic compliance concerns with U.S. Antimony and their operations; therefore, DEQ determined the reporting conditions outlined in the current permit action are sufficient.
		The permit documentation should more robustly assess potential public health impacts, especially for nearby communities. Given the expansion, cumulative impacts (past +projected) need clear evaluation. Antimony exposure can pose significant health risks, particularly through inhalation of antimony dust or fumes, which is the primary pathway near smelting operations. Short-term exposure can cause irritation of the eyes, skin, and respiratory tract, along with coughing, headaches, and nausea. Long-term or chronic exposure has been associated with more serious effects, including lung and	Thanks for your comment. DEQ updated the Environmental Assessment, Section 11., Human Health and Safety, disclosing potential Acute and Chronic health effects that may result from antimony exposure.

		heart problems, decreased lung function, and potential impacts to the liver and gastrointestinal system. Some antimony compounds are also considered possible carcinogens, making long-term inhalation a particular concern for nearby communities and workers.	
		DEQ should conduct or require a more detailed health risk assessment considering emissions under worst-case operating scenarios, including potential changes in emissions overtime, and require mitigation if needed.	Thanks for your comment. A human health risk assessment is not required for the current permit action. Further U.S. Antimony is a minor source of antimony, which also constitutes product, thus it is in the best interest of U.S. Antimony to achieve the highest collection efficiency possible. Therefore, DEQ determined a human health risk assessment is not applicable nor appropriate in this case. Further, DEQ is confident the BACT-determined controls (baghouses) and antimony emission rate (0.002 gr/dscf), coupled with applicable compliance monitoring (see previous response) are adequately protective of human health.
		In sum, while the draft permit appears to promise lower emissions, the basis for that claim is not sufficiently transparent, and the risk remains that actual emissions — particularly of hazardous pollutants — could be higher than projected if assumptions are wrong, controls fail, or monitoring is insufficient. We urge DEQ to strengthen the permit by demanding more robust emissions accounting, enforceable performance guarantees for control technology, greater	Thanks for your comment. DEQ disagrees, as the basis for the claim of lower emissions than those previously permitted is clearly identified in the BACT Analysis and Determination section of the Permit Analysis. As previously discussed, DEQ determined that the conditions and limitations, testing requirements, operational reporting requirements, and general conditions contained within the MAQP are appropriate for the proposed action.

		reporting transparency, and stronger enforcement mechanisms.	
Alexanda Scranton	MAQP	1) U.S. Antimony appears to have already constructed and operated new furnaces in advance of the permitting process. Although the permit is written as though the new boilers are yet to be constructed, U.S. Antimony has published press releases announcing their progress in ordering, installing and operating new replacement furnaces at the Thompson Falls Facility over the last few years. At the end of these comments is a full list of links to U.S. Antimony press releases with relevant quotes from each. Specifically: • the press release from June 10, 2021 mentions the anticipated delivery of two new furnaces. • the press release from September 21, 2021 mentions the installation of the two new furnaces. • the press release from October 20, 2021 mentions the operation of the new furnaces. • the press release from September 15, 2022 mentions the ordering of two additional furnaces. • the press release from January 20, 2023 mentions the delivery and intended modifications of the two additional furnaces. • the press release of July 14, 2025 mentions ongoing	Power Engineers, Inc., on behalf of U.S. Antimony provided the following response. "No existing furnaces or burners are being replaced, only baghouses are part of the proposed action for the existing facility. USAC is installing new furnaces with baghouses to the expansion project and decommissioning two older units. Previous installations were within prior permit limits. Previous MDEQ permit drafts referred to "replacement of existing furnaces" rather than "addition of new furnaces." This may be related to the expressed concern. In addition, several press releases noted in Alexandra Scranton's comments refer to the existing Trisulfide furnaces that are lab-scale electric furnaces with insignificant emissions and do not fall under MDEQ air permit requirements."

		expansion efforts including completing the refurbishment of one furnace with a second refurbishment in progress. No mentions however are made in these press releases of any additional baghouses, modifications to baghouses or other pollution control measures for the new furnaces. It is unclear from the way the draft permit is written as to whether U.S. Antimony ever informed MT DEQ of these new furnaces, and/or if they represent the same furnaces currently being proposed. 2) U.S. Antimony's Thompson Falls facility is not just an antimony oxide plant, but also has significant new operations producing antimony trisulfide, antimony metal ingots and recovery of precious metals including gold and silver. The description of the company and its Thompson Falls facility in the draft permit should be updated to better reflect both the current and expected operations at the facility. Press releases issued by the company in recent years detail several significant changes to its operations since the last iteration of its air quality permit. Specifically: • The press release of October 7, 2019 mentions being awarded a significant grant from the Department of Defense (DOD) to	Power Engineers, Inc., on behalf of U.S. Antimony provided the following response. "The current Thompson Falls permit has allowed the operations which produce the products noted in the comment and the proposed permit would continue to allow these operations. Antimony ingots and precious metal recovery are integral to the oxide process. Ingots represent intermediate steps toward oxide production, and precious metals are byproducts of that process. These activities are not separate operations but part of the existing workflow."

		establish a North American source of antimony trisulfide at its plant in Montana. The press release of September 15, 2022 mentions 3,300 lbs of antimony metal and 15,000 lbs of antimony trisulfide produced at the Montana smelter in July and August 2022. • The press release of November 15, 2022 mentions an additional 17,000 lbs of antimony trisulfide produced in September and October 2022. • In the press release of March 18, 2025, the company describes its operations as: "The Company processes third party ore primarily into antimony oxide, antimony metal, antimony trisulfide, and precious metals at its facilities located in Montana and Mexico… The Company also recovers precious metals, primarily gold and silver, at its Montana facility from third party ore." • The press release of September 23, 2025 mentions a new 5 year, $245 million contract with the U.S. Defense Logistics Agency to supply antimony metal ingots. • (Again – at the end of these comments you will find links to all of these press releases with relevant quotes.)	
		3) The permit does not calculate potential emissions of SO2 from antimony processing, or discuss SO2 control strategies despite these types of emissions	Power Engineers, Inc., on behalf of U.S. Antimony provided the following response. "In contrast to other antimony-related processing facilities, the Thompson Falls facility

		being a well-known concern of antimony smelting. Traditional smelting and processing of antimony is well-known to produce problematic SO2 emissions. (Sources: roastinghttps://raven-environmental.com/sectors/antimony-https://www.mdpi.com/2227-9717/10/8/1590 technologies and control strategies that can be implemented to reduce SO2 emissions, it is unclear from the draft permit if they are being utilized at the Thompson Falls facility. Currently the draft permit only calculates the potential to emit antimony from the antimony refinement activities. A discussion of the potential for SO2 emissions from antimony smelting and any control strategies in place should be included in the permit. ;) While there are newer	does not process sulfur-rich ores; therefore, SO_2 emissions are minimal. Existing antimony trisulfide operations will remain unchanged and are outside the scope of this project. Antimony oxide processing uses propane fuel and oxide feedstock, resulting in very low SO_2 emissions. Best Available Control Technology analysis confirmed wet scrubbing is unnecessary due to the very dilute concentrations of SO2."
		4) The permit analysis states that two of the remelt/reduction furnaces are fired with coal, yet the emissions calculations assume all furnaces are fueled with propane. In the Source Description, (Section 1. B of the permit analysis) it states "There are also two (2) reduction furnaces, which are used to reduce antimony oxide back to antimony metal using coal." Yet the Emissions Inventory (Part IV) calculates emissions from burning propane in all nine furnaces.	Power Engineers, Inc., on behalf of U.S. Antimony provided the following response. "The furnaces are not fired on coal as a fuel and are all propane fired. Instead, the introduction of a small amount of coal is integral to the chemical process producing metallic antimony. As mentioned in the permit application text, coal is used in the reduction furnaces to facilitate the reduction of antimony oxides to metallic antimony. The carbon in the coal acts as a reducing agent and reacts with the oxygen in the antimony oxide, reducing the antimony to its metallic form.

		If the Source Description is correct, the emissions estimates for the two reduction furnaces fired with coal should be re-calculated as such. (Also worth noting that this is an increase as the Source Description in the existing permit MAQP# 2973-04 states that there is only one reduction furnace using coal.) 5) The permit claims both the total HAPS and overall emissions from the facility will decrease, with the installation of new baghouses, despite the company's claims of increasing production capacity more than six-fold. The press release of April 30, 2025 discusses the company's definitive contract to significantly expand it smelting operations in Thompson Falls. Specifically, it states the capital expenditure will expand the facility to six times the previous smelting capacity. This expansion is intended to be completed on an "aggressive schedule" by the end of 2025. Despite this vast expansion, the draft permit estimates that the total HAPS emissions of antimony will decrease from over 9 tons to just 6.6 tons. This decrease is attributed to the installation of pollution control in the form of new baghouses. It is difficult to reconcile this decrease given that the facility was already using baghouses as pollution	Coal is not being burned and undergoing combustion in the sense of burning coal for heat generation. The resulting particulate matter emissions from the coal used in the reducing process are expected to be insignificant, with the baghouses on each reduction furnace controlling the filterable particulate matter emissions." Power Engineers, Inc., on behalf of U.S. Antimony provided the following response. "Although production will increase, installation of the new, advanced baghouse technology ensures emissions remain extremely low and are considered the gold standard for metal smelting. These upgraded filters capture virtually all particles and hazardous air pollutants (HAPs), between 99.997% and 98.5%, depending on inlet loading, before they leave the facility. This high level of control means cleaner air even as product output grows. In short, modern filtration systems make it possible to reduce emissions while expanding production, combining efficiency with environmental responsibility. This technology exceeds typical Best Available Control Technology requirements and involves a significant investment, reflecting a commitment to environmental protection beyond regulatory standards. In short, modern filtration systems make it possible to reduce emissions while expanding production, combining efficiency with environmental responsibility."

		control since at least 1999. And even then baghouse technology was already claiming up to 99% efficiency. A more detailed explanation of how the new baghouses will dramatically counteract the massive expansion in production capacity is needed in the draft permit to justify the new Emissions Inventory. 6) Errors in the units and values listed in the Emission Inventory in the permit analysis. Looking closely at the calculations detailed in the Emission Inventory, I noticed several errors that should be corrected. Specifically: In the Antimony Furnaces section: In the calculation for Oxidation Furnaces the value for dscf/hr should say 429,540 dscf/hr (not 286,380). Also a unit is incorrect as "0.002 dscf/hr" should say "0.002 gr/dscf". In the calculations for Conveyors #1 and #2, the value for dscf/hr should say 74,460 dscf/hr (not 286,380). Also a unit is incorrect, as "0.002 ton/yr" should say "0.002 gr/dscf". In the calculation for Conveyor #3, the value for dscf/hr should say 17,160 dscf/hr (not 286,380). Also a unit is incorrect as "0.002 dscf/hr" should say "0.002 gr/dscf".	U.S. Antimony submitted comments to DEQ to correct the Emissions Inventory. Power Engineers, Inc., on behalf of U.S. Antimony provided the following response. "These errors have been corrected in coordination between MDEQ and USAC. (U.S. Antimony)"

		In the calculation for Building Ventilation Baghouse, the value for dscf/hr should say 3,722,880 dscf/hr (not 286,380). Also a unit is incorrect as "0.002 dscf/hr" should say "0.002 gr/dscf". Lastly – when you add up all the listed Antimony emissions listed for the reduction furnaces, oxidation furnaces, conveyors and the baghouse you don't get the same total HAPS value that is listed in the Emission Inventory chart. (That is: 1.79 +2.15 +0.093 +0.093 +0.021 + 4.66 = 8.807 ton/yr, not 6.6 ton/yr. These calculations should all be re-checked for accuracy.	

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 DEQ of Environmental Quality (Department). 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).

   U.S. Antimony 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

U.S. Antimony 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, U.S. Antimony 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 17.8.316 Incinerators. This rule requires that no person may cause or authorize emissions to be discharged into the outdoor atmosphere from any incinerator, particulate matter in excess of 0.10 grains per standard cubic foot of dry flue gas, adjusted to 12% carbon dioxide and calculated as if no auxiliary fuel had been used. Further, no person shall cause or authorize to be discharged into the outdoor atmosphere from any incinerator emissions that exhibit an opacity of 10% or greater averaged over 6 consecutive minutes.

6. 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.

7. ARM 17.8.324 Hydrocarbon Emissions--Petroleum Products. (3) No person shall load or permit the loading of gasoline into any stationary tank with a capacity of 250 gallons or more from any tank truck or trailer, except through a permanent submerged fill pipe, unless such tank is equipped with a vapor loss control device as described in (1) of this rule.

8. 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 Part 60.

9. ARM 17.8.342 Emission Standards for Hazardous Air Pollutants for Source Categories. This rule incorporates, by reference, 40 CFR Part 63, National Emission Standards for Hazardous Air Pollutants (NESHAP). This facility is not a NESHAP affected source because it does not meet the definition of any NESHAP subpart defined in 40 CFR Part 63.

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. U.S. Antimony 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. U.S. Antimony has a PTE of less than 25 tons per year.

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. U.S. Antimony 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. U.S. Antimony submitted an affidavit of publication of public notice for the September 11, 2025, issue of The Sanders County Ledger, a newspaper of general circulation in the Town of Thompon Falls in Sander 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 U.S. Antimony 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 17.8.760 Additional Review of Permit Applications. This rule describes DEQ's responsibilities for processing permit applications and making permit decisions on those applications that require an environmental impact statement.

12. 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.

13. 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).

14. 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.

15. 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.

16. ARM 17.8.770 Additional Requirements for Incinerators. This rule specifies the additional information that must be submitted to DEQ for incineration facilities subject to 75-2-215, Montana Code Annotated (MCA).

17. ARM 17.8.771 Mercury Emission Standards for Mercury-Emitting Generating Units. This rule identifies mercury emission limitation requirements, mercury control strategy requirements, and application requirements for mercury-emitting generating units.

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 #2973-05 for U.S. Antimony, 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. However, the uncontrolled emissions for HAPs, specifically antimony, are greater than 10 tons/year. Because U.S. Antimony recovers antimony as product from the baghouses, the control efficiency associated with the baghouse is included in the PTE calculations, reducing the PTE for antimony to less than 10 tons/year.

   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 not subject to any current NESHAP standards.

   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 U.S. Antimony 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, U.S. Antimony will be required to obtain a Title V Operating Permit or take federally enforceable permit limits to be considered a synthetic minor source.

III. BACT Analysis and Determination

A BACT analysis and determination is required for each new or modified source. U.S. Antimony shall install on the new or modified source the maximum air pollution control capability, which is technically practicable and economically feasible, except that BACT shall be utilized. Under the current permit action U.S. Antimony is proposing the installation and

operation of multiple new Reduction, Remelt and Oxidation Furnaces and product (antimony) handling operations and associated equipment.

U.S. Antimony submitted the following BACT analysis for the current permit action.

Reduction, Remelt, and Oxidization Furnace Burners

NO_X BACT Analysis

Step 1 – Identify All Control Technologies for control of NO_X
Available NO_X emissions control technologies for the proposed 3.0 MMBtu/hr furnace burners include the following:

1. Low-NOx Burners (LNB)
2. Flue Gas Recirculation (FGR)
3. Selective Catalytic Reduction (SCR)
4. Selective Non-Catalytic Reduction (SNCR)
5. Good Combustion Practices/Propane Fuel

Low-NOx Burners
A Low-NOx burner (LNB) is considered a combustion control as it is designed to minimize combustion temperatures by delaying combustion by staging the air or fuel in multiple zones. A LNB uses staged combustion into the burner creating a fuel-rich primary combustion zone, as fuel NOx formation is decreased by the reducing conditions in the primary combustion zone.

Thermal NOx is limited due to the lower flame temperature caused by the lower oxygen concentration. The secondary combustion zone is a fuel-lean zone where combustion is completed. The initial fuel-air mixture is deliberately made very rich or very lean, which slows the combustion process and reduces the peak flame temperatures and thermal NOx production.

Flue Gas Recirculation
Flue gas recirculation (FGR) is a flame-quenching technique that involves recirculating a portion of the combustion flue gas outlet and returning it to the burner through the burner wind box or directly into the burner. This returned combustion exhaust gas reduces oxygen levels; the inert gas dilution and reduced oxygen results in lower peak flame temperatures, inhibiting thermal NOx formation. Fuel/air mixing in the combustion zone is intensified by the recirculated flue gas when introduced into the flame during the early stages of combustion, this intensified mixing offsets the decrease in flame temperature and results in lower NOx levels.

FGR requires additional ducting and can rely on induced recirculation flow or a recirculation fan to force the recirculation. Additional instrumentation and software logic controls are required to monitor and adjust the relative amount of recirculation flow.

Selective Catalytic Reduction
Selective catalytic reduction (SCR) is a post-combustion gas treatment technique for reduction of nitric oxide (NO) and nitrogen oxide (NO_2) in an exhaust stream to molecular nitrogen, water, and oxygen. NH_3 or urea is used as the reducing agent involves injecting

ammonia into the flue gases. The flue gases are then passed through a catalyst bed (sized specifically for the flow, temperature, gas constituents, and desired reduction) where NOx is reduced to N_2 gas and water.

The rate of the reduction reaction determines the amount of NOx removed from the flue gas, and the reaction temperature range and the residence time available in the optimum temperature range. The optimum flue gas operating temperature for SCR depends on both the type of catalyst used in the process and the flue gas composition and is usually between 500°F and 800°F for a conventional SCR system. If the treated flue gas temperature is too low, it would need to be artificially heated; and if the flue gas is too hot then it would need to be cooled to the required temperature range.

Selective Non-Catalytic Reduction

Selective non-catalytic reduction (SNCR) is a post-combustion emissions control technology for reducing NOx by injecting an NH_3-type reactant into the combustion device at a properly determined location into the flue gases to reduce the NO_X to N_2, but without the use of catalysts.

Relatively high temperatures within a limited range for an extended residence time for mixing and reaction are required for the SNCR reactions to proceed effectively. The optimum temperature range for SNCR is between 1600° and 2000°F. The efficiency of the conversion process diminishes quickly when operated outside the optimum temperature band and additional ammonia slip or excess NOx emissions may result. The median reductions for urea based SNCR systems in various industry source categories range from 25 to 60 percent.

Good Combustion Practices/Propane Fuel

Good combustion practices involve a good burner design and optimized tuning to ensure the best combustion possible is taking place. The use of a clean fossil fuel such as propane gas (LPG) controls the amount of pollutants emitted compared to other fuels (such as liquid and solid) with inherent higher emissions.

Step 2 – Eliminate Technically Infeasible Options for control of NO_X

Flue Gas Recirculation (FGR)

Because of the intrinsic nature of FGR, the technology is generally installed in new units that incorporate specific characteristics of FGR into the design and is typically used in boilers rather than furnaces. To achieve NOx, CO, and VOC reduction, flue gas off the convection section would be ducted back into the burner requiring additional space and infrastructure. Given the relatively small size of the burners and lack of space available in and around these furnaces, the additional ducting, recirculation fan and instrumentation makes FGR technically infeasible for application for the proposed furnace burners. Due to the configuration of the proposed furnaces and the specific proprietary processes and furnace operations for the Project, FGR is technically infeasible, and this control technology is eliminated from further consideration.

Selective Catalytic Reduction (SCR)

The exhaust gas stream (steady state) operating temperature range for all of the furnaces is between 1,000-1,400ºF, which would be substantially greater than the SCR operating temperature range of 350 ºF to 1000 ºF. This makes operation of SCR infeasible unless the

burner exhaust gas temperature was reduced. However, the operating temperature of the furnaces must remain higher than the SCR operating temperature range in order for the furnaces to operate as designed.

Additionally, locating the SCR downstream of the furnace would place the catalyst material in a high dust environment creating a high probability of the catalyst plugging up and thus not feasible for this application.

The design and layout of the process equipment associated with the project have been optimized for operational efficiency and safety. An SCR system would require significant space to accommodate the catalyst housing, ammonia reagent storage and handling, ductwork, and associated piping, and integrating an SCR within the current configuration of the expansion facility is not possible due to space limitations.
Due to the configuration and design of the proposed furnaces and the furnace operating temperature, SCR is considered technically infeasible for the control of NOx emissions from the proposed furnace burners, and this control is technology eliminated from further consideration.

Selective Non-Catalytic Reduction (SNCR)
The flue gas exhaust temperature exiting the furnace is expected to be in the 1,000 – 1,400ºF range. The SNCR process requires a narrow flue gas temperature window of 1600 – 2000ºF. As a result, SNCR is considered technically infeasible for the proposed furnaces, and this control is technology is eliminated from further consideration.

Remaining Technologies not Eliminated
Good combustion practices with the use of propane, and a Low-NOx burner are the remaining technologies to be considered.

Step 3 – Rank Remaining Control Technologies by Control Effectiveness for control of NO_X

The following table contains the technically feasible NO_X control technologies for the proposed furnace burners, ranked in order of control effectiveness.

Furnace Burner NO_X Emissions: Control Effectiveness (Propane-Fired)

Ranking	Control Technology	Controlled Emission Rates (lb/MMBTU)
1	Low-NOx Burner[1]	0.085
2	Good Combustion Practices	0.15 – 0.20

[1]Manufactuer guarantee for NOx emission rate

Step 4 – Evaluate Most Effective Controls

The Faber Forefront ATP-8P burner (3.0 MMBtu/hr) that is being proposed for the furnaces is a forced draft Low-NOx burner that runs at higher velocities that will be based on 8,760 hours of operation. The manufacturer's data for the ATP-8P burner, using propane as the fuel for combustion, indicates that this Low-NOx burner will emit 70 ppmv of NOx (0.085 lb/MMBtu) corrected to 3% O_2 using propane.

U.S. Antimony has selected Low-NOx burners and will also employ good combustion practices for the proposed furnace burners, which constitutes the top, feasible NOx control technology and is therefore BACT.
No further analysis of the relative energy, environmental, or economic impacts of the other options is necessary because the top level of NOx emissions control is proposed.

Step 5 – Select BACT for control of NO_X

U.S. Antimony has selected a Low-NOx burner and 0.085 lb/MMBtu for the proposed furnaces as BACT. These burners will limit NO_X emissions to 0.25 lb/hr per burner.

Note: This BACT determination applies to all nine of the affected furnace burners, as they are all identical in size and fuel combusted (3.0 MMBtu/hr, propane). Table 1 shows each point source, and the NOx emission rates based on the installation and operation of a Low-NOx burner and the use of good combustion practices.

DEQ concurs, Low-NO_X burners with an emission limit of 0.085lb/MMBtu constitutes BACT for control of NO_X emissions from the affected furnaces.

CO and VOC Analysis

Step 1 – Identify All Control Technologies for control of CO and VOC

The formation and control of CO and VOC emissions in the fossil fuel combustion process are related to each other, meaning the same control technology type and performance will apply to both pollutants. Therefore, CO and VOC are combined for review in this BACT analysis.

Control strategies that could potentially be employed to control CO and VOC emissions from the furnace burners listed above in the NOx BACT analysis include the following:

1 Catalytic Oxidation
2 Good Combustion Practices

Catalytic Oxidation
Catalytic oxidizers, also known as catalytic incinerators, are oxidation systems (similar to thermal oxidizers) that control CO and VOC emissions. Catalytic oxidizers use a catalyst to promote the oxidation of CO and VOC to carbon dioxide (CO2) and water. The catalyst allows oxidation to occur at lower temperatures (650°F – 1,000°F) than with thermal oxidation. Catalytic oxidation requires the installation of ductwork to lead the flue gas to the catalyst bed and straighten and slow the flow velocity before the bed. The catalyst material is housed in a large duct reactor where the chemical reaction takes places. Exhaust ductwork is then required to reshape the flow as needed prior to the exhaust point.

Good Combustion Practices
CO and VOC emissions can be minimized using good combustion practices such as good equipment design, use of gaseous fuels such as propane, for good mixing, and proper combustion techniques such as maintaining the optimum air/fuel ratio.

Step 2 – Eliminate Technically Infeasible Options for control of CO and VOC

Catalytic Oxidation

The flue gas temperature exiting each proposed furnace is expected to be in the range of 1,000-1,400 ºF. The catalytic oxidizer process requires a narrow flue gas temperature window and must be placed in the exhaust stream where flue gas temperatures range from 650-1,000 F°, upstream of any heat exchanger. There is not a flue gas location available at this temperature range.

For the proposed furnaces, at the exit of each furnace duct, dilution air is brought in to lower the furnace exhaust gas stream temperature to a maximum steady state temperature of 662 F°, and the gas stream temperature is likely to be lower than 662 F° prior to the gas stream entering the cooler, most of the time; the furnace exhaust temperature range is at the low end of or below the effective operating temperature range of the catalyst, which will result in the reduction or complete failure of the catalytic reaction; the space required between the furnace exit and the required ductwork to achieve that temperature drop is not available. Furthermore, locating a Catalytic Oxidizer downstream of the furnace would place the catalyst material in a high dust area creating a high probability of plugging up the catalyst. Therefore, the technology is not feasible for this application. Installing a catalyst downstream of the baghouse would also not be feasible due to the lower operating temperature of the furnace baghouse of 175 F°.

Due to the configuration and design of the proposed furnaces for the proposed project, using Catalytic Oxidation to control the CO and VOC emissions from the furnace burners is considered technically infeasible and is eliminated from further consideration.

Step 3 – Rank Remaining Control Technologies by Control Efficiencies for control of CO and VOC

The only available, technically feasible CO and VOC control technology for the control of CO and VOC emissions from the furnace burners is the use of good combustion practices. The following table contains the technically feasible CO and VOC control technologies for the proposed furnaces, ranked in order of control effectiveness.

Furnace CO and VOC Emissions: Control Effectiveness (Propane-Fired)

Ranking	Control Technology	Controlled Emission Rates (lb/MMBTU)
1	Good Combustion Practices[1]	0.082 for CO 0.011 for VOC

[1] CO and VOC emission factors based on AP-42, Table 1.5-1.

Step 4 – Evaluate Most Effective Controls for control of CO and VOC

Based on the elimination of catalytic oxidation, good combustion practices are the only remaining technically feasible option and constitute the top control option for CO and VOC emissions from the furnace burners. U.S. Antimony is proposing the use of good combustion practices, including optimized burner design, proper air-to-fuel ratios, and regular maintenance of the burner system.

Step 5 – Select BACT for control of CO and VOC

U.S. Antimony has selected the use of good combustion practices (GCP), including optimized burner design, proper air-to-fuel ratios, and regular maintenance as BACT for CO and VOC emissions with a CO emissions limit of 0.082 lb/MMBtu and a VOC emissions limit of 0.011 lb/MMBtu.

DEQ agrees Low-NO_X burners constitute BACT for control of CO and VOC.

SO_2 Analysis

Step 1 – Identify All Control Technologies for control of SO_2

Control strategies that could potentially be employed to control SO_2 emissions from the proposed furnace burners include:

1. Wet Scrubbing of SO_2
2. Use of clean-burning, low sulfur propane fuel

Wet Scrubbing
Wet Scrubbing is a chemical absorption system and mass transfer system that controls SO_2 emissions. Wet Scrubbers treat exhaust gases after they leave the combustion chamber using a liquid (usually water with a reagent like lime or limestone) to chemically react with and neutralize the SO_2. In addition, a wet scrubber system relies on contact between the gas and liquid phases to transfer pollutants from the gas into the liquid which would have the negative effect of generating a wastewater stream.

Use of clean-burning, low sulfur propane fuel
Propane is a clean-burning fuel with minimal sulfur content and is a viable option that would result in very low SO_2 emissions from the furnace burners.

Step 2 – Eliminate Technically Infeasible Options for control of SO_2

Wet Scrubbing
The sulfur content of propane is extremely low and the SO_2 concentration in the burner exhaust flue gas will therefore be very diluted.

Sulfur concentrations in propane are approximately 185 parts per million by weight (ppmw).

4.2lb/gallon of propane x 3,073,180 gallons of propane * (185/1000000) ppmw x 1ton per 2000 pounds = 1.19 tons of sulfur.

Typical SO_2 wet scrubbers have an efficiency of 90 to 98 percent.

1.19 tons of sulfur x .90% = 1.07 tons of sulfur removed.

SO_2 wet scrubber range from $250,000 to $2,500,000

$250,000 / 1.07 tons = $233,644 per ton removed
$2,500,000 / 1.07 tons = $2,336, 448 per ton removed.

Additionally, a wet scrubbing system would have the negative effect of generating a wastewater stream. For these reasons, wet scrubbing of SO_2 emissions from the furnace burners is considered to be economically infeasible for this application and this control technology is eliminated from further consideration.

Step 3 – Rank Remaining Control Technologies by Control Efficiencies for control of SO_2

The only available, technically feasible SO_2 control technology for the proposed furnace burners is the use of a clean-burning, low-sulfur fuel such as propane.
Propane is a very clean-burning fuel with minimal sulfur content, and the use of propane will result in very low SO_2 emissions; the sulfur content in propane is approximately 0.18 grains per 100 ft^3.

Step 4 – Evaluate Most Effective Controls for control of SO_2

No evaluations of cost or other impacts are required because U.S. Antimony is proposing to accept the remaining control technology for controlling SO_2 emissions from the furnace burners.

Step 5 – Select BACT for control of SO_2

U.S. Antimony has selected the use of clean-burning, low sulfur propane fuel, along with employing good combustion practices, including optimized burner design, proper air-to-fuel ratios, and regular maintenance of the burners to represent BACT for SO_2. Table 4 shows each point source and associated SO_2 emission rates using low sulfur fuel and good combustion practices for the proposed furnace burners.

Particulate Matter Analysis

Particulate Matter (PM, PM_{10}, $PM_{2.5}$)

Step 1 – Identify All Control Technologies for control of PM
For the purposes of the proposed project, Fabric Filter Baghouses constitute both the proposed particulate matter (PM) emissions control technology and process equipment, as antimony (product) is both captured by, and collected as product from the baghouses. A small amount of PM is also generated by the combustion of propane by the furnace burners. The design of the proposed furnaces is such that the furnace exhaust gas stream from each furnace is directly routed to the respective furnace Fabric Filter Baghouse.

The BACT analysis for PM emissions from the furnace burners routed through the Fabric Filter Baghouses (process and control equipment) assesses control of filterable and condensable PM. U.S. Antimony identified the following available control strategies that could potentially be employed to control $PM/PM_{10}/PM_{2.5}$ emissions from the furnace burners:

1. Fabric Filters
2. Electrostatic Precipitators
3. Wet Scrubbing Systems

4. Good Combustion Practices

Fabric Filter Baghouse
A Fabric Filter Baghouse is used to filter out PM before the exhaust is introduced into the environment. Fabric Filter Baghouses are widely used for the control of PM from a variety of industrial processes and are considered the top control for removal of PM from gas streams. Fabric Filter Baghouses are typically designed with particulate collection efficiencies of 99 - 99.9+ % for filterable particulate matter, depending on air-to-cloth ratio and pressure drop across the Filter Fabric Baghouse. Again, in this case, Fabric Filter Baghouses constitute both the proposed emissions control technology and process equipment, as antimony (product) is both captured by, and collected as product from the baghouses.

Electrostatic Precipitator (ESP)
An ESP is a PM control technology that utilizes electric charges to attract PM present in a gas stream. This technology consists of negatively charged discharge electrodes and positively charged collection plates. The negatively charged electrodes create a corona of electrical charges transmitting a negative charge to the PM. The negatively charged PM is then attracted to the ESP's positively charged collection plates. An ESP is typically designed with filterable PM collection efficiencies of 99 - 99.9+%.

Wet scrubbing systems
Wet scrubbing control devices use a liquid to remove PM from an exhaust gas stream. Generally, a liquid is introduced to the exhaust gas stream, entrained PM is captured in and on liquid droplets, and the liquid droplets are separated from the gas stream. Because PM from this source will react with water from the wet scrubbing system to form hydrated lime, it cannot be reintroduced to the process and cannot be collected as product. A wet scrubbing system is typically designed with PM collection efficiencies of 70% for filterable PM.

Good Combustion Practices
Good combustion practices are a viable option for controlling PM from propane, which is a byproduct of incomplete combustion. Filterable and condensable PM emissions can be minimized using good combustion practices such as good equipment design, use of gaseous fuels, such as propane, and proper combustion techniques such as maintaining the optimum air/fuel ratio.

Step 2 – Eliminate Technically Infeasible Options for control of PM

Filter Fabric Baghouse
A Fabric Filter Baghouse is a proven control technology for capturing PM from stationary sources, as this control device is highly efficient for collecting PM on a surface fabric (membrane). Fabric Filter Baghouses are commonly used for industrial-scale applications for furnaces and U.S. Antimony currently employs Fabric Filter Baghouses in the existing facility to control PM emissions from the existing furnace burners at the Thompson Falls facility.

Electrostatic Precipitator (ESP)
An Electrostatic Precipitator (ESP) can be an effective control technology for sources with consistent and large gas flow rates and consistent levels of PM loading. However, the PM removal efficiency can decrease when the gas flow rate is not steady.

Considering the variations in product throughput capacity, batching operations, and the associated low gas flowrates used in the antimony smelting and refining operations, ESP technology would not be effective in this application. Therefore, the use of an ESP to control PM emissions is deemed technically infeasible in this case, and is eliminated from further consideration.

Wet scrubbing system

A wet scrubbing system that uses inertial collection to control PM would not be compatible with the Thompson Falls facility, which uses a dry system. A wet scrubbing system is not as effective as a Fabric Filter Baghouse at controlling PM emissions and is not compatible with a Fabric Filter Baghouse, which constitutes both process equipment and the proposed PM control equipment, in this case. Additionally, a wet scrubbing system would have the negative effect of generating a wastewater stream.

For these reasons, use of a wet scrubbing system to control PM emissions from the furnace burners is considered to be technically infeasible for this application and this technology is eliminated from further consideration.

Good Combustion Practices

Good combustion practices are a viable control option identified for a 3.0 MMBtu/hr burner to minimize the formation of PM (filterable and condensable) emissions and U.S. Antimony will employ good combustion practices for all of the existing and proposed new furnace burners.

Step 3 – Rank Remaining Control Technologies by Control Efficiencies for control of PM

The remaining two technically feasible PM control technologies from step 2 include a Fabric Filter Baghouse and good combustion practices, which is the combination of PM control technologies currently employed at the Thompson Falls facility.
The following table contains the technically feasible control technologies for PM emissions from the furnace burners, ranked in order of control effectiveness.
Furnace Burner Filterable PM Emissions: Control Effectiveness (Propane-Fired)

Ranking	Control Technology	Controlled Emission Rates
1	Fabric Filter Baghouse[1]	0.0000022 lb/MMBtu
2	Good Combustion Practices[2]	0.0022 lb/MMBtu

Notes: [1] PM emission factor is based on 99.9 % PM control.
[2] PM emission factor is based on AP-42, Table 1.5-1. (Propane)

Furnace Burner Condensable PM Emissions: Control Effectiveness (Propane-Fired)

Ranking	Control Technology	Controlled Emission Rates
1	Good Combustion Practices[1]	0.0055 lb/MMBtu

Notes: [1] PM emission factor is based on AP-42, Table 1.5-1. (Propane)

Step 4 – Evaluate Most Effective Controls for control of PM

No evaluations of cost or other impacts are required because U.S. Antimony is proposing the top filterable PM control technology to both collect product and reduce PM emissions from the furnace burners. U.S. Antimony also proposes good combustion practices to limit both filterable and condensable PM for each furnace and the use of propane, a clean-burning fuel, resulting in low potential filterable and condensable PM emissions from the furnace burners.

Further, the existing furnace burners at U.S. Antimony currently employ Fabric Filter Baghouses and good combustion practices for PM control at the Thompson Falls facility.

Step 5 – Select BACT for control of PM

U.S. Antimony proposed the use of a Fabric Filter Baghouse, along with employing good combustion practices, including optimized burner design, proper air-to-fuel ratios, and regular maintenance of the proposed furnace burners as BACT for PM emissions. Table 5 shows each point source and associated filterable PM emission rates using a Fabric Filter Baghouse and good combustion practices for the proposed furnace burners to control filterable PM.

Therefore, DEQ determined BACT for filterable and condensable PM emissions from operation of the proposed propane-fired furnace burners is the installation and operation of a Fabric Filter Baghouse(s), the use of good combustion practices, a filterable PM emission limit of 0.002 grains per dry standard cubic foot (gr/dscf)and a condensable PM emission limit of 0.0055 lb/MMBtu.

Product Handling and Building Ventilation

Particulate Matter Analysis

Step 1 – Identify Control Options for control of PM

U.S. Antimony identified the following applicable control technologies for reducing PM ($PM/PM_{10}/PM_{2.5}$) emissions from the proposed project:

Available control strategies for PM emissions from the two (2) product handling systems and the (2) two building ventilation systems include the following:

1. Fabric Filters
2. Electrostatic Precipitators
3. Wet Scrubbing Systems
4. Inertial Collectors – Cyclones

Filter Fabric Baghouse

For the purposes of the proposed project, Fabric Filter Baghouses constitute both the proposed PM emissions control technology and process equipment, as antimony (product) is both captured by, and collected as product from the baghouses.

A Filter Fabric Baghouse is used to filter out PM before the exhaust is introduced into the environment. Fabric Filter Baghouses are widely used for the control of filterable PM

($PM/PM_{10}/PM_{2.5}$) from a variety of industrial processes and are considered the top control for removal of PM from material handling operations, such as the proposed project. Fabric Filter Baghouses are typically designed with PM collection efficiencies of 99 - 99.9+ % for filterable particulate matter, depending on air-to-cloth ratio and pressure drop across the Filter Fabric Baghouse.

Electrostatic Precipitator (ESP)
An ESP is a particulate matter control technology that utilizes electric charges to attract PM. This technology consists of negatively charged discharge electrodes and positively charged collection plates.

The negatively charged electrodes create a corona of electrical charges transmitting a negative charge to the PM. The negatively charged PM is then attracted to the ESP's positively charged collection plates. An ESP is typically designed with PM collection efficiencies of 99 - 99.9+% for filterable particulate matter.

Wet scrubbing systems
Wet scrubbing control devices use a liquid to remove particulate matter from an exhaust gas stream. Generally, a liquid is introduced to the exhaust gas stream, entrained PM is captured in and on liquid droplets, and the liquid droplets are separated from the gas stream. Since PM from this source will react with water from the wet scrubbing system to form hydrated lime, it cannot be reintroduced to the process and cannot be collected as product. A wet scrubbing system is typically designed with PM collection efficiencies of 95% for filterable PM.

Inertial collectors
Commonly known as cyclones, which consist of one or more conically shaped vessels in which the exhaust gas stream follows a circular motion prior to the outlet. Cyclones are commonly used for PM control in industrial applications due to their relatively low cost, robust construction, and ability to handle high temperatures and abrasive dust streams.

The removal of particulate matter occurs by centrifugal and inertial forces, induced by forcing the PM-laden gas stream to change direction; removal efficiencies when the gas stream is laden with larger diameter particles PM (>30 microns) is significantly higher than for smaller diameter PM (<30 microns). An inertial collector is typically designed with collection efficiencies of 50 - 90% for filterable PM; the actual effectiveness is highly dependent on the size of the particulate matter, and the 50–90% collection efficiency range is more typical for capturing larger particles.

Step 2 – Eliminate Technically Infeasible Options for control of PM

Filter Fabric Baghouse
The use of a Fabric Filter Baghouse is technically feasible for the control of (antimony) $PM/PM_{10}/PM_{2.5}$ for the product handling/conveyor systems and the building ventilation systems.

For the purposes of the proposed project, Fabric Filter Baghouses would constitute both PM emissions control technology and process equipment, as antimony (product) is both captured by, and collected as product from the baghouses. Because the baghouses will be

used as process equipment, U.S. Antimony is also proposing the use of Fabric Filter Baghouses to control filterable PM from materials handling operations.

Electrostatic Precipitator (ESP)
An Electrostatic Precipitator (ESP) can be an effective control technology for sources with large gas flow rates and consistent levels of particulate loading. However, the removal efficiency can decrease when the gas flow rate is not steady across the ESP. Considering the variations in product throughput capacity, batching operations, and the associated low gas flowrates used in the existing antimony smelting and refining operations, and that the same batch type processes would also be utilized in the proposed expansion of the Thompson Falls facility, an ESP would not be as effective as a Fabric Filter Baghouse for the control of PM emissions. Further, because the existing facility operations incorporate Fabric Filter Baghouses as both process equipment and PM control, an ESP would require redesigning the expansion facility and antimony processing, making the use of ESP technology technically infeasible in this case, Therefore, ESP technology is eliminated from further consideration as BACT for material handling operations.

Wet scrubbing systems
A wet scrubbing system that uses inertial collection would not be compatible with the Thompson Falls antimony processing and refining, which uses a dry system at the Thompson Falls facility. A wet scrubbing system would also have the negative impact of generating a wastewater stream. Additionally, a wet scrubbing system is not as effective as a Fabric Filter Baghouse at controlling PM emissions and is not compatible with a Fabric Filter Baghouse. Additionally, a wet scrubbing system would have the negative effect of generating a wastewater stream.. Therefore, wet scrubbing of PM emissions from material handling operations is technically infeasible for this application and this technology is eliminated from further consideration as BACT for material handling operations.

Inertial Collectors
Inertial Collectors, known as Cyclones, are commonly used for PM control in industrial applications due to their relatively low cost, robust construction, and ability to handle high temperatures and abrasive dust streams. However, inertial collection systems are considered ineffective as a viable control technology since these systems are capable of collecting large particles but have difficulty controlling $PM_{10}/PM_{2.5}$ emissions. The use of an Inertial Collector or an inertial collection system for PM control is not an effective PM control device by itself, and is not currently part of U.S. Antimony's process equipment and PM emissions control strategy. U.S. Antimony currently utilizes Fabric Filter Baghouses for all existing product handling systems and the existing building ventilation system, and this type of PM control technology offers much higher PM control efficiency than an Inertial Collector. Therefore, this technology is removed from further consideration as BACT for material handling operations.

Step 3 – Rank Remaining Options by Control Effectiveness for control of PM

The only available PM control technology option deemed technically feasible for the control of PM emissions from the proposed material handling operations is a Fabric Filter Baghouse, which is the top level of PM control. This determination is consistent with previous BACT determinations for U.S. Antimony's Thompson Falls facility.

Step 4 – Evaluate Most Cost-Effective Controls and Document Results for control of PM

As discussed in Step 3, the use of a Fabric Filter Baghouse for PM control constitutes the top level of PM control for the product handling systems, and building ventilation systems associated with the proposed project.

Step 5 – Select BACT for control of PM

The use of Fabric Filter Baghouses and Bin Vents for PM control has proven to be an effective means to control PM emissions from existing operations at U.S. Antimony's Thompson Falls facility, and U.S. Antimony has many years of experience with using this control technology in their antimony smelting and refining processes.

Fabric Filter Baghouse technology has no negative energy, environmental, or economic impacts to the proposed project, and a Fabric Filter Baghouse is commonly employed as BACT in similar industrial applications for nonferrous metal smelting and refining industries. Based on this BACT analysis, U.S. Antimony determined that the use of a Fabric Filter Baghouse constitutes BACT for the control of antimony ($PM/PM_{10}/PM_{2.5}$) from the proposed material handling operations.

The Fabric Filter Baghouses associated with the proposed new product handling Bin Vents are also guaranteed to achieve an outlet grain loading of 0.002 gr/dscf. The proposed new building ventilation baghouse is guaranteed to achieve an outlet grain loading of 0.001 gr/dscf.

Therefore, DEQ determined a Fabric Filter Baghouse with an emission limit of 0.001 gr/dscf constitutes BACT for the control of filterable PM from material handling operations under the proposed project. This technology constitutes the top control for filterable PM emissions from material handling operations.

No pollutants except PM would be present in the product handling and ventilation systems; therefore, no further BACT analyses and associated determinations are required.

IV. Emission Inventory

MAQP 2973-05, 2025

	tons/year							
Emission Source	**PM**	**PM_{10}**	**$PM_{2.5}$**	**NO_X**	**CO**	**VOC**	**SO_X**	**HAPs**
Antimony Refinement (existing)	--	--	--	--	--	--	--	2.78
Antimony Refinement (new)	--	--	--	--	--	--	--	6.50
Propane Burners	1.08	0.31	0.77	19.98	11.52	1.54	0.15	--
Total Emissions	**1.08**	**0.31**	**0.77**	**19.98**	**11.52**	**1.54**	**0.15**	**9.28**

Note - emissions from antimony refinement represent controlled emissions due to product recovery from associated baghouses
Note - baghouse control efficiencies are based on Best Available Control Technology determinations and manufacturers data.

Note - emissions from LPG fuel uncontrolled Potential to Emit based on max fuel usage and 8760 hours per year.

MAQP 2973-03, 2003 (most recent prior permit action with emissions inventory)

Emission Inventory		
Source/ Baghouse	Flowrate (dscfm)	Maximum Particulate Emission Rate (ton/yr)*
Reduction Furnace		
#1	2500	1.88
#2	2500	1.88
#3	2500	1.88
Fuming Furnaces		
#1	5000	3.75
#2	5000	3.75
#3	5000	3.75
#4	2500	1.88
#5	2500	1.88
#6	2500	1.88
Antimonate Driers		
#1	2500	1.88
TOTAL	**32500**	**24.41**

Calculations

Antimony Furnace(s)

Note: Emissions are based on the grain loading of the baghouse		
Pounds per ton	0.0005	**ton/lb**
Pound per grain	0.000143	**lb/gr**
Grain per dry standard cubic foot	0.002	**gr/dscf**
Hours of Operation = 8,760.00 hr/yr	8760	**hr/yr**
Antimony Emissions: Reduction furnaces	5	**furnaces**
Flow Rate	286380	**dscf/hr**
Calculation: ((5 furnaces) * (0.002 gr/dscf) * (286,380 dscf/hr) * (0.00014 lb/gr) * (8,760 hr/yr) * (ton/2000 lb) = 1.8 ton/yr	1.79	**ton/yr**
Antimony Emissions: Oxidization furnaces	4	**furnaces**
Flow Rate	429540	**dscf/hr**
Calculation: ((4 furnaces) * (0.002 gr/dscf) * (429540 dscf/hr) * (0.00014 lb/gr) * (8,760 hr/yr) * (ton/2000 lb) = 2.2 ton/yr	2.15	**ton/yr**
Antimony Emissions: Conveyor #1 to Crude Oxide Bin Vent	1	**conveyor**
Flow Rate	74460	**dscf/hr**
Calculation: ((1 conveyor) * (0.002 ton/yr) * (74460 dscf/hr) * (0.00014 lb/gr) * (8,760 hr/yr) * (ton/2000 lb) = 0.1 ton/yr	0.093	**ton/yr**
Antimony Emissions: Conveyor #2 to Product Oxide Bin Vent	1	**conveyor**
Flow Rate	74460	**dscf/hr**
Calculation: ((1 conveyor) * (0.002 gr/dscf) * (74460 dscf/hr) * (0.00014 lb/gr) * (8,760 hr/yr) * (ton/2000 lb) = 0.1 ton/yr	0.093	**ton/yr**
Antimony Emissions: Conveyor #3 to Crude Oxide Bin Vent	1	**conveyor**
Flow Rate	17160	**dscf/hr**
Calculation: ((1 conveyor) * (0.002 gr/dscf) * (17160 dscf/hr) * (0.00014 lb/gr) * (8,760 hr/yr) * (ton/2000 lb) = 0.0 ton/yr	0.021	**ton/yr**
Antimony Emissions: Building Ventilation Baghouse		

Flow Rate	3722880	**dscf/hr**
Calculation: ((0.001 gr/dscf) * (3722880 dscf/hr) * (0.00014 lb/gr) * (8,760 hr/yr) * (ton/2000 lb) = 2.33 ton/yr	2.33	**ton/yr**

Propane Fuel

Note: Emissions are based on AP-42 uncontrolled emission factors, Table 1.5-1, Commercial Boilers		
Operational Capacity = 3,073,180 g/yr	3073180	**g/yr**
Pounds per ton	0.0005	**ton/lb**
Hours of Operation = 8,760.00 hr/yr	8760	**hr/yr**
PM_{Tot} Emissions: PM_{Filt} + PM_{Tot}		
Emission Factor = 1.08 ton/yr	1.08	**ton/yr**
PM_{Cond} Emissions:		
Emission Factor = 0.0002 lb/gal.	0.0002	**lb/gal.**
Calculation: ((3,073,180 g/yr) * (0.0002 lb/gal.) * (ton/2000 lb) = 0.3 ton/yr	0.31	**ton/yr**
PM_{Filt} Emissions		
Emission Factor = 0.001 lb/gal.	0.0005	**lb/gal.**
Calculation: ((3,073,180 g/yr) * (0.0005 lb/gal.) * (ton/2000 lb) = 0.8 ton/yr	0.77	**ton/yr**
NOx Emissions:		
Emission Factor = 0.01 lb/gal.	0.013	**lb/gal.**
Calculation: ((3,073,180 g/yr) * (0.0130 lb/gal.) * (ton/2000 lb) = 20.0 ton/yr	19.98	**ton/yr**
CO Emissions:		
Emission Factor = 0.01 lb/gal.	0.0075	**lb/gal.**
Calculation: ((3,073,180 g/yr) * (0.0075 lb/gal.) * (ton/2000 lb) = 11.5 ton/yr	11.52	**ton/yr**
TOC Emissions:		
Emission Factor = 0.001 lb/gal.	0.001	**lb/gal.**
Calculation: ((3,073,180 g/yr) * (0.0010 lb/gal.) * (ton/2000 lb) = 1.5 ton/yr	1.54	**ton/yr**
SO_X Emissions:		
Emission Factor = 0.0001 lb/gal.	0.0001	**lb/gal.**
Calculation: ((3,073,180 g/yr) * (0.0001 lb/gal.) * (ton/2000 lb) = 0.2 ton/yr	0.15	**ton/yr**

V. Existing Air Quality

U.S. Antimony is located in located in Section 29, Township 21 North, Range 31 West, in Sanders County, Montana. The immediate area in which the facility is constructed is designated attainment/unclassified. U.S. Antimony maximum potential to emit of any pollutant, including PM_{10}, is not expected to have an impact on existing air quality.

VI. Ambient Air Impact Analysis

Based on the information provided and the conditions established in MAQP #2973-05, DEQ determined that the impact from this permitting action will be minor. DEQ believes it will not cause or contribute to a violation of any ambient air quality standards.

VII. Taking or Damaging Implication Analysis

As required by 2-10-105, MCA, DEQ 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)

The proposed project would take place on private land. DEQ has determined that the permit conditions are reasonably necessary to ensure compliance with applicable requirements under the Montana Clean Air Act. Therefore, DEQ's approval of MAQP #2973-05 would not have private property-taking or damaging implications.

VIII. Environmental Assessment

An environmental assessment (EA), prepared pursuant to the applicable requirements of Title 75, Chapter 1, Parts 1-3, was completed for the proposed project. A copy of the EA is attached.

FINAL ENVIRONMENTAL ASSESSMENT

December 5, 2025

Air Quality Permitting Services Section
Air Quality Bureau
Air, Energy and Mining Division
Montana Department of Environmental Quality

PROJECT/SITE NAME: Thompson Falls Facility

APPLICANT/COMPANY NAME: United States Antimony Corporation

MONTANA AIR QUALITY PERMIT #2973-05

LOCATION: Township 21 North, Section 29, 31 West

COUNTY: Sanders

PROPERTY OWNERSHIP: FEDERAL STATE PRIVATE X

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Overview of Proposed Action

Authorizing Action

Pursuant to the Montana Environmental Policy Act (MEPA), Montana agencies are required to prepare an environmental review for state actions that may have an impact on the Montana environment. The Proposed Action is a state action that may have an impact on the Montana environment; therefore, the Montana Department of Environmental Quality (DEQ) must prepare an environmental review. This EA will examine the proposed action and alternatives to the proposed action and disclose potential and proximate impacts that may result from the proposed and alternative actions. DEQ will determine the need for additional environmental review based on consideration of the criteria set forth in Administrative Rules of Montana (ARM) 17.4.608.

Description of DEQ Regulatory Oversight

DEQ implements the Clean Air Act of Montana, overseeing the development of United States Antimony Corporation (U.S. Antimony) and associated facilities. DEQ has authority to analyze the replacement of existing furnaces with new propane fired burners and baghouses to control emissions resulting from the processing of antimony.

Proposed Action

U.S. Antimony has applied for a Montana Air Quality Permit (MAQP) under the Clean Air Act of Montana, § 75-2-101, et. *seq*, add nine (9) new LowNO_X propane fired furnace burners and baghouses to control emissions of antimony. The project subject to the proposed action would be located on private/public land, in Sanders County, Montana. All information included in this EA is derived from the permit application, discussions with the applicant, analysis of aerial photography, topographic maps, and other research tools.

Table 1. Summary of Proposed Action

General Overview	The proposed action adds five (5) 3.0 million British thermal unit per hour (MMBtu/hr) reduction furnaces, two (2) 3.0 MMBtu/hr remelt furnaces, two (2) 3.0 MMBtu oxidizer furnaces, as well as multiple process conveyors. The modification request also adds new baghouses to control particulate matter from the furnaces and material handling operations. The baghouses will also recover antimony from the smelting process and material handling operations.
Duration & Hours of Operation	Construction: Commissioning will commence after the MAQP is issued as final and last for approximately 2 to 3 months. Operation: Operation will continue until the facility is permanently closed.
Estimated Disturbance	There will be no new disturbed area associated with the proposed action.
Construction Equipment	Construction equipment may include, but is not limited to, cranes, delivery trucks, and forklifts.
Personnel Onsite	Construction: Various number of personnel will be present, including, but not limited to pipe fitters, electricians, technicians, consulting engineering staff, and full-time employees. Operation: The facility will increase from 15 personnel to 35.

Location and Analysis Area	*Location:* 47 Cox Gulch Rd, Thompson Falls, MT. *Analysis Area:* The area being analyzed as part of this environmental review includes the immediate project area (Figure 1), as well as neighboring lands surrounding the analysis area, as reasonably appropriate for the impacts being considered.

Table 2. The applicant is required to comply with all applicable local, county, state, and federal requirements pertaining to the following resource areas.

Air Quality	The applicant proposes to install and operate propane fired furnace burners to smelt antimony as well as install baghouses to control and collect product.
Water Quality	There will be no impact to water quality associated with the proposed action.
Erosion Control and Sediment Transport	There will be no intentional erosion associated with the proposed action because the area is an already developed facility and does not require any new ground disturbance.
Solid Waste	Any solid waste produced from the proposed project would be disposed of properly.
Cultural Resources	There will be no cultural resources associated with the proposed action because the area is an already developed facility and does not require any new ground disturbance.
Hazardous Substances	Any hazardous substances that could result from the proposed action would be disposed appropriately.
Reclamation	There will be no reclamation conducted as a result of the proposed action because the site is an already developed site with no new disturbances expected.

Table 3. Cumulative Impacts

Past Actions	No previous projects are associated with the proposed action
Present Actions	Installing and operating new furnace burners, conveyors, and baghouses.
Related Future Actions	No future related projects have been identified at the time of this Environmental Assessment.

Purpose, Need, and Benefits

DEQ's purpose in conducting this environmental review is to act upon U.S. Antimony's application for a MAQP to conduct smelting operations. DEQ's action on the permit application is governed by § 75-2-201, et seq., Montana Code Annotated (MCA) and the Administrative Rules of Montana (ARM) 17.8.740, et seq.

The applicant's purpose and need, as expressed to DEQ in seeking this action, is to add nine (9) new furnaces and conveyor systems as well as install and operate new baghouses for the control of particulate matter, more specifically antimony.

Figure 1. General Location of the Proposed Project

Other Governmental Agencies and Programs with Jurisdiction

The proposed action would be located on private land. All applicable local, state, and federal rules must be adhered to, which may include other local, state, federal, or tribal agency jurisdiction. Other governmental agencies which may have overlapped, or additional jurisdiction include but may not be limited to: US EPA, MSHA, OSHA, Sanders County.

Evaluation of Affected Environment And Impact by Resource

The impact analysis will identify and evaluate the proximate direct and secondary impacts TO THE PHYSICAL ENVIRONMENT AND POPULATION IN THE AREA TO BE AFFECTED BY THE PROPOSED PROJECT. *Direct impacts* occur at the same time and place as the action that causes the impact. *Secondary impacts* are a further impact to Montana's environment that may be stimulated, induced by, or otherwise result from a direct impact of the action (ARM 17.4.603(18)). Where impacts would occur, the impacts will be described in

this analysis. When the analysis discloses environmental impacts, these are proximate impacts pursuant to 75-1-201(1)(b)(iv)(A), MCA.

Cumulative impacts are the collective impacts on Montana's environment within the borders of Montana 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 pre-impact statement studies, separate impact statement evaluation, or permit processing procedures (ARM 17.4.603(7)). The project identified in Table 1 was analyzed as part of the cumulative impacts assessment for each resource subject to review, pursuant to MEPA (75-1-101, et. *seq*).

The duration of the proposed action is quantified as follows:

- **Construction Impacts (short-term):** These are impacts to the environment that would occur during the construction period, including the specific range of time.

- **Operation Impacts (long-term)**: These are impacts to the environment during the operational period of the proposed action, including the anticipated range of operational time.

The intensity of the impacts is measured using the following:

- **No impact**: There would be no change from current conditions.

- **Negligible**: An adverse or beneficial effect would occur but would be at the lowest levels of detection.

- **Minor**: The effect would be noticeable but would be relatively small and would not affect the function or integrity of the resource.

- **Moderate**: The effect would be easily identifiable and would change the function or integrity of the resource.

- **Major**: The effect would alter the resource.

1. Geology and Soil Quality, Stability and Moisture

This section includes the following resource areas, as required in ARM 17.4.609: Geology; Soil Quality, Stability, and Moisture

Affected Environment

Sanders County consists of numerous geological formations which include the Ravalli Group, Prichard Formation, Wallace formation, and the Missoula Group. The area also possesses Cambrian Sediments, igneous rocks, and acid intrusives. Sanders County has diverse soil types including Adel series, Caseypeak series, and Yellowstone Series. Adel Series are deep, well drained soils formed in alluvium on hills while Caseypeak series are shallow, well drained soils formed in residuum from granite on mountains. The Yellowstone series are typically shallow, somewhat excessively drained soils on mountain summits.

Direct Impacts

Proposed Action: There will be minor direct construction and operational impacts to geology, soil quality, stability, or moisture as a result of the proposed action. The proposed action will mainly be located within the antimony-smelting facility with new baghouses constructed both within and in the immediate vicinity of the facility. New concrete pads may be used to support the baghouses but will not require excessive excavation due to the area surrounding the facility being already developed for industrial purposes.

Secondary Impacts

Proposed Action: There will be no secondary construction or operational impacts to geology or soil quality, stability, and moisture. The current site is an already developed antimony smelting site.

Cumulative Impacts

Proposed Action: There will be minor cumulative impacts to geology or soil quality, stability, and moisture. The current site is an already developed antimony smelting site with minor ground disturbances associated with the installation of exterior baghouses.

2. Water Quality, Quantity, And Distribution

This section includes the following resource areas, as required in ARM 17.4.609: Water Quality, Quantity and Distribution

Affected Environment

Sanders County has a varied climate with cold, snowy winters and warm summers. The average annual precipitation includes approximately 39 inches of snowfall in the winter and approximately 20.2 inches of rain in the spring, summer, and fall months. Prospect Creek is located approximately 1,050 feet to the southwest of the facility with forest lands located between the creek and the facility.

Direct Impacts

Proposed Action: There will be no direct construction or operational impacts to water quality, quantity, and distribution associated with the proposed action. The proposed action will mainly be located within the existing antimony-smelting facility with new a baghouse constructed outside, in the immediate vicinity of the facility. The construction phase of the proposed action will take place in the winter months where any precipitation is expected to

be in the form of snow and be completed before the spring thaw. There is an approximate 1050-foot distance between the facility and nearest flowing creek. Because the affected area between the facility and the creek includes trees and other vegetation it would be expected to act as a natural barrier for any overland runoff in the event of warm temperatures.

Secondary Impacts

Proposed Action: There will be no secondary construction or operational impacts to water quality, quantity, and distribution associated with the proposed action. Any overland transport of water would occur after the proposed project is completed during the spring melt.

Cumulative Impacts

Proposed Action: There will be no cumulative construction or operational impacts to water quality, quantity, or distribution. The current site is an already developed antimony smelting facility where all of the proposed actions will take place inside the facility or in the immediate vicinity of the facility during with winter months when overland flow is not expected.

3. Air Quality

This section includes the following resource areas, as required in ARM 17.4.609: Air Quality

Affected Environment

The proposed project is located in located in Section 29, Township 21 North, Range 31 West, in Sanders County, Montana. The immediate area in which the facility is constructed is designated attainment/unclassified.

Applicants are required to comply with all laws relating to air, such as the Federal Clean Air Act, NAAQS set by the Environmental Protection Agency (EPA), and the Clean Air Act of Montana.

In addition, MAQP #2973-05 provides legally enforceable conditions regarding the emitting units themselves, pollution controls, and requires the applicant to take reasonable precautions to limit fugitive dust from this location.

Direct Impacts

Proposed Action: Direct construction impacts are expected to be minor and short-term. Emissions resulting from the proposed action would be limited based on the scope of work and be mostly contained inside the furnace facility. Limited external fugitive dust emissions may result from the transport of equipment to and from the facility.

Direct operational impacts are expected to be minor and long term based on the allowable increase in the facilities' potential to emit. See permit analysis for more information regarding air quality impacts. The majority of pollutants from the proposed project would be related to the combustion of propane gas within the furnace facility. This would result in a minor decrease in emissions of NO_X, CO, SO_X, VOCs due to the improved burner design and the installation and operation of Best Available Control Technology or BACT.

	tons/year							
Emission Source	**PM**	**PM_{10}**	**$PM_{2.5}$**	**NO_X**	**CO**	**VOC**	**SO_X**	**HAPs**
Antimony Refinement (existing)	--	--	--	--	--	--	--	2.78
Antimony Refinement (new)	--	--	--	--	--	--	--	6.50
Propane Burners	1.08	0.31	0.77	19.98	11.52	1.54	0.15	--
Total Emissions	**1.08**	**0.31**	**0.77**	**19.98**	**11.52**	**1.54**	**0.15**	**9.28**

Note - emissions from antimony refinement represent controlled emissions due to product recovery from associated baghouses
Note - emissions from LPG fuel uncontrolled Potential to Emit based on max fuel usage and 8760 hours per year.

Particulate matter from the process furnaces and material handling operations would be routed to new baghouses and reclaimed as product during shakedown procedures.

Secondary Impacts

Proposed Action: Secondary construction impacts from the proposed project are expected to be negligible and short-term. Emissions would not be expected to cause or contribute to a violation of the health and welfare-based primary and secondary NAAQS. Secondary NAAQS provide public welfare protection, including protection against decreased visibility and damage to animals, crops, vegetation, and buildings. See permit analysis for more detailed information regarding air quality impacts. Any adverse operational impacts would be long-term and minor. No beneficial secondary impacts would be expected because of the proposed project.

Cumulative Impacts

Proposed Action: Conditions and limits contained in the MAQP would limit emissions; therefore, any expected cumulative air quality impacts from the expansion project would be minor and short-term. Sanders County and the surrounding area has other minor stationary sources that contribute to the overall air quality in Sanders County, Montana. The cumulative impacts of these other emitters, the existing U.S. Antimony operations, and the proposed action would not be expected to have an adverse impact to air quality.

4. Vegetation Cover, Quantity, and Quality

This section includes the following resource areas, as required in ARM 17.4.609: Vegetation Cover, Quantity and Quality

Affected Environment

The affected area is an already developed antimony smelting facility with little to no vegetative cover within the project area. Any vegetative cover would be considered "land scaping" for aesthetics within the project boundaries. The proposed project is located within the existing property boundary of the antimony smelting site and will be confined to the furnace facility and immediate exterior for baghouse placement.

Direct Impacts

Proposed Action: No direct construction or operational impacts to vegetative cover, quantity, or quality will occur as a result of the proposed project. There is no new ground disturbance associated with the proposed action that affect vegetative cover, quantity, and quality

because there is no vegetative cover in the immediate vicinity of the facility where the new external baghouse could be constructed.

Secondary Impacts

Proposed Action: No secondary construction or operational impacts to vegetative cover, quantity, or quality will occur as a result of the proposed project because the affected area is an already developed antimony smelting facility with little to no vegetative cover within the project area.

Cumulative Impacts

Proposed Action: No cumulative impacts to vegetative cover, quantity, or quality will occur as a result of the current proposed project because the affected area is an already developed antimony smelting facility with little to no vegetative cover within the project area.

5. Terrestrial, Avian, and Aquatic Life and Habitats

This section includes the following resource areas, as required in ARM 17.4.609: Terrestrial and Aquatic Life and Habitats; Unique, Endangered, Fragile, or Limited Environmental Resources

Affected Environment

The affected area is an already developed antimony smelting facility with no unique or important terrestrial, avian, or aquatic life and habitats located within the project boundaries or the smelting furnace facility where the project is proposed.

Direct Impacts

Proposed Action: No direct impacts from construction or operational affects to terrestrial, avian, or aquatic life and habitats are expected as a result of the proposed project.

The affected area is an already developed antimony smelting facility with no unique or important terrestrial, avian, or aquatic life or habitats located within the property boundary. More specifically, the smelting furnace facility where the project is proposed to occur. There may be resident bird species (pigeons and other avian species) located on or using the property for part of their life cycle, but it is unlikely that the proposed project would affect these species as the proposed project would be similar to the existing operation of the facility. Therefore, any unique, endangered, fragile or limited species identified by the Montana Natural Heritage Program (MTNHP) reports, as discussed in Section 6 below, are unlikely to displaced by construction activities and those that are would likely temporarily relocate to nearby, similar habitats.

Secondary Impacts

Proposed Action: No secondary impacts from construction or operations are expected as a result of the proposed project. The affected area is an already developed antimony smelting facility with no unique or important terrestrial, avian, or aquatic life or habitats located within the property boundary or more specifically, the smelting facility where the project is proposed to occur.

Because the area surrounding the furnace facility site is already developed, any species present would likely be tolerable of existing and proposed operations.

Cumulative Impacts

Proposed Action: No cumulative impacts would be expected to terrestrial, avian and aquatic life and habitats because the proposed action would be consistent with existing operations and associated impacts at the site.

6. Unique, Endangered, Fragile, or Limited Environmental Resources

This section includes the following resource areas, as required in ARM 17.4.609: Unique, Endangered, Fragile, or Limited Environmental Resources.

Affected Environment

DEQ conducted a search using the MTNHP webpage with file downloads saved to the AQB project file. The query was run and downloaded on October 20, 2025. The polygon selected was the immediate area surrounding the proposed site.

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

Species of concern identified in the MTNHP report include the following:

Birds – Evening Grosbeak, Pileated Woodpecker, American Goshawk

Fish – Westslope Cutthroat Trout, Bull Trout

Mammals – Fisher, Grizzley Bear, Wolverine

Reptiles – Northern Alligator Lizard

Invertebrate – Humped Coin

Vascular Plant – Straightbeak Buttercup, Western Pearl-flower

All of these identified species are located outside of the analysis area but included in the MTNHP polygon area.

Direct Impacts

Proposed Action: No direct construction or operational effects to unique, endangered, fragile or limited environmental resources/species are expected because of the proposed project. The affected area is an already developed antimony smelting facility with no unique or important terrestrial, avian, or aquatic life or habitats located within the property boundary or more specifically, the smelting facility where the project is proposed to occur.

Secondary Impacts

Proposed Action: No secondary construction or operational effects to unique, endangered, fragile or limited environmental resources/species are expected because of the proposed project. The affected area is an already developed antimony smelting facility with no unique or important terrestrial, avian, or aquatic life or habitats located within the property boundary or more specifically, the smelting facility where the project is proposed to occur.

Cumulative Impacts

Proposed Action: No cumulative impacts are expected as a result of the proposed action. Any unique, endangered, fragile, species are not expected to be at the site. It is highly unlikely that limited environmental resources/species would be located in the project area.

7. Historical and Archaeological Sites

This section includes the following resource areas, as required in ARM 17.4.609: Historical and Archaeological Sites

Affected Environment

The Montana State Historic Preservation Office (SHPO) was notified of the application and SHPO conducted a file search and provided a letter dated October 20, 2025. In the letter, SHPO identified the following historic sites located outside the analysis area but within the SHPO search area.

Site #	TWP	RNG	SEC	Qs	Site Type 1	Site Type 2	Time Period	Owner	NR Status
24SA0674	21N	31W	29		Historic Pipeline		Historic, more than One Decade	Forest Service	Ineligible
24SA0224	21N	31W	29		Historic Road		Combination	Forest Service	Eligible
24SA0719	21N	31W	29	Comb	Historic Transmission Line		Historic, more than One Decade	Combination	Ineligible

It is SHPO's position that any structure over fifty years of age is considered historic and is potentially eligible for listing on the National Register of Historic Places. If any structures are within the Area of Potential Effect, and are over fifty years old, SHPO recommends that they be recorded, and a determination of their eligibility be made prior to any disturbance taking place.

No underground disturbance would be required for the proposed action as there is no new ground disturbances for the proposed actions. Minor surface disturbances may result from the construction of any external baghouses.

Direct Impacts

Proposed Action: No direct construction or operational impacts to historical or archaeological sites are expected because of the proposed action. According to SHPO, there have been three (3) previously recorded historical or archaeological sites identified within the search area. Because no land disturbance would occur because of the proposed project the identified markers would remain undisturbed, and no impact would occur. Therefore, no direct impacts from construction or operational activities would be expected because of the proposed project.

Secondary Impacts

Proposed Action: No secondary construction or operational impacts to historical or archaeological sites are expected because of the proposed project, as there are no new ground disturbances associated with the proposed project and impacts to the historic road would be limited to vehicle traffic and not considered specific to the project.

Cumulative Impacts

Proposed Action: No cumulative impacts are expected as a result of the proposed project because the proposed project would not require land disturbance.

8. Aesthetics

This section includes the following resource areas, as required in ARM 17.4.609: Aesthetics

Affected Environment

The effected area is an already developed antimony smelting facility. There will be no new structures associated with the proposed action with the exception of an exterior baghouse. The baghouse will be constructed immediately adjacent to the smelting facility.
Figure 1. Shows the facility is located in mountainous terrain with no improved driving surfaces in the immediate area. Montana Secondary Highway 471 is approximately 1750 feet south of the facility with forest covering the areas between the highway and facility.

Direct Impacts

Proposed Action: Minor and short-term construction impacts to aesthetics are assumed during the construction phase of the proposed action due to increased traffic and noise associated with construction equipment and traffic, both too and from the site. As described, there is an approximate 1750-foot forested buffer zone which will conceal any construction activities and filter any noise generated.

No direct operational impacts to aesthetics are associated with the proposed action. The proposed project will occur inside the current smelting facility. The affected area is an already developed antimony smelting facility with new baghouse structures associated with the proposed project being constructed.

Secondary Impacts

Proposed Action: Negligible and short-term impacts may occur as a result of the construction activity associated with the proposed action. Impacts to the aesthetics may include heavy vehicle traffic used to deliver materials required to accommodate the proposed project. Along with heavy vehicle traffic, loading equipment may also be present on-site during construction.

No operational secondary impacts are expected as a result of the proposed permit action. There are no new facilities anticipated with the furnace refurbishment.

Cumulative Impacts

Proposed Action: With this permitting action, negligible long-term cumulative impacts on the aesthetics are anticipated as the site with the addition of external baghouses. The site is an already developed antimony smelting facility with no new structures anticipated.

9. Demands on Environmental Resources of Land, Water, Air, or Energy

This section includes the following resource areas, as required in ARM 17.4.609: Demands on Environmental Resources of Land, Water, Air, or Energy

Affected Environment

The proposed project is small by industrial standards and is located within the existing U.S. Antimony property boundary.

Direct Impacts

Proposed Action: No direct construction or operational impacts to environmental resources of land or water would be expected, as the proposed project does not require any new land disturbances or use of water.

Minor, short-term construction impacts to the environmental resources of air or energy are expected due to possible emissions from construction equipment and fugitive dust emissions from equipment traffic. Minor and long-term operational impacts are expected to environmental resources of air and energy because the proposed action would emit additional regulated pollutants (air) associated with the use of propane gas (energy) to fire the furnace burners. Estimated emissions can be seen in Section 3, Air Quality of this assessment as well as the Section 4 – Emissions Inventory of the MAQP Analysis.

Secondary Impacts

Proposed Action: No secondary impacts to environmental resources of land, water, air, or energy are expected with the proposed project. The proposed project will not use any new or additional resources because it is an already existing antimony smelting facility. The proposed action refurbishes existing process furnaces and improves control efficiencies.

Cumulative Impacts

Proposed Action: Negligible, long-term cumulative impacts on environmental resources of air and energy are anticipated because of the proposed action.

No cumulative impacts to land and water are expected.

10. Impacts on Other Environmental Resources

This section includes the following resource areas, as required in ARM 17.4.609: Impacts on Other Environmental Resources

Affected Environment

As described in Section 8. of this environmental assessment – Aesthetics, there will be noise associated with the proposed action. Increases in fugitive dust may be a result of increased vehicle and equipment use during the construction phase. As this is an already developed site, the need for exterior lighting is unnecessary, however, portable light pods may be needed during early morning or late afternoon hours of construction.

Direct Impacts

Proposed Action: Minor and short-term construction impacts are expected during the construction phase of the proposed action. Fugitive dust emissions resulting from construction of the proposed facility may adversely impact air quality in the affected area.

However, U.S. Antimony must use reasonable precautions to limit fugitive dust generated from construction activities; therefore, the proposed project would not be expected to cause or contribute to a violation of the applicable NAAQS for particulate matter (fugitive dust). See permit analysis for more detailed information regarding air quality impacts. Secondary, NAAQS provide public welfare protection, including protection against decreased visibility and damage to animals, crops, vegetation, and buildings. Therefore, any adverse direct impacts to other environmental resources would be short-term and minor. No beneficial direct impacts would be expected because of the proposed project. Any temporary light pods would be removed at the end of the construction phase.

No operational impacts on other environmental resources are expected with the proposed action. With the replacement of the furnace burners, addition of new conveyors, and new baghouses to collect particulate matter, overall emissions from the facility are expected to decrease.

Secondary Impacts

Proposed Action: Proposed operations would not be expected to cause or contribute to a violation of the public welfare-based Secondary NAAQS. See permit analysis for more detailed information regarding air quality impacts. Secondary NAAQS provides public welfare protection, including protection against decreased visibility and damage to animals, crops, vegetation, and buildings. Therefore, any adverse secondary impacts to other environmental resources would be long-term and minor. No beneficial secondary impacts would be expected because of the proposed project.

Cumulative Impacts

Proposed Action: No other environmental resources, beyond the resource areas already covered within this EA would result in any known additional cumulative impacts.

11. Human Health and Safety

This section includes the following resource areas, as required in ARM 17.4.609: Impacts on Human Health and Safety

Affected Environment

Antimony exposure can occur through inhaling dust or fumes that result from the smelting process and can be absorbed via direct contact through the skin, eyes, and mucus membranes in the nose, mouth, and esophagus. Acute, or short-term exposure to antimony can cause irritation of the eyes, skin, and respiratory tract. Gastrointestinal issues like nausea, vomiting, and abdominal pain may also occur.

Chronic or long-term exposure from inhalation may lead to chronic bronchitis, emphysema, and lung damage. Chronic exposure may also cause heart contraction, abnormal electrocardiogram (EKG) readings, or other cardiac effects. Long-term exposure may also lead to reproductive issues such as spontaneous abortion and premature labor. Potential damage to liver and kidneys as well as negative effects on the immune system may also occur.

The applicant would be required to adhere to all applicable state and federal safety laws. The Occupational Safety and Health Administration (OSHA) has developed rules and guidelines

to reduce the risks associated with this type of labor. Few, if any, members of the public would be in immediate proximity to the project during construction or operations.

Direct Impacts

Proposed Action: Construction activities involve the potential for adverse direct impacts to human health and safety. However, construction operations would be subject to OSHA standards, which are designed to be protective of human health and safety. Further, residents of the affected area would not be allowed on-site during construction of the proposed facility.

Also, fugitive dust emissions resulting from construction of the proposed facility may adversely impact air quality in the affected area. However, U.S. Antimony must use reasonable precautions to limit fugitive dust generated from construction activities; therefore, the proposed project would not be expected to cause or contribute to a violation of the applicable NAAQS for particulate matter (fugitive dust). See permit analysis for more detailed information regarding air quality impacts. Primary NAAQS provides public health protection, including protecting the health of "sensitive" populations such as asthmatics, children, and the elderly. Therefore, any adverse direct impacts to human health and safety would be short-term and negligible to minor.

Minor, and long-term negative operational impacts may occur to human health and safety through antimony exposure that result from the smelting process. However, U.S. Antimony is required to install and operate baghouses on all furnaces, bins, and facility emitting points as well as install, operate, and monitor devices used to detect broken or damaged bags. U.S. Antimony is also required to conduct source testing on all new furnaces as well as weekly visual surveys of all emitting points. If visible emissions are observed, a U.S. EPA Method 9, Visual Opacity Test must be conducted by qualified personnel.

Secondary Impacts

Proposed Action: Operation of the proposed facility would be subject to OSHA standards. OSHA standards are designed to be protective of human health and safety. Further, operation of the furnace would emit regulated air pollutants. However, emissions from the proposed project would use BACT and thus would not be expected to cause or contribute to a violation of the human health-based Primary NAAQS. See permit analysis for more information regarding air quality impacts. Primary NAAQS provide public health protection, including protecting the health of "sensitive" populations such as asthmatics, children, and the elderly.

Therefore, any adverse secondary impacts to human health and safety would be long-term and negligible to minor. No beneficial secondary impacts would be expected because of the proposed project.

Cumulative Impacts

Proposed Action: No cumulative impacts to human health and safety are anticipated as a result of the proposed action because the emissions, as described in Section IV of the Permit Analysis, would be considered small by industrial standards.

12. Industrial, Commercial, and Agricultural Activities and Production

This section includes the following resource areas, as required in ARM 17.4.609:
Impacts on Human Health and Safety

Affected Environment

The area in and around the existing U.S. Antimony facility is considered an industrial site. The proposed action will replace the existing furnace burners with new propane-fired burners, install new conveyors, and install and operate new baghouses for emission control and product capture.

Direct Impacts

Proposed Action: No construction or operational direct impacts to commercial or agricultural activities and production are expected because the site is an existing industrial site and no commercial, agricultural, or production activities would be displaced because of the proposed project.

Minor and short-term impacts may occur as a result of the construction activities. The antimony furnace facility will be non-operational during the proposed project and is expected to last up to 90 days. Beneficial, minor and long-term operational impacts are expected as a result of the proposed project through the replacement of current furnace burners with new propane gas-fired burners, new material conveyors, and new baghouses to both control emissions and recover product at greater efficiency than current operations.

Secondary Impacts

Proposed Action: Industrial activities in the affected area would increase because of the proposed project. Therefore, any secondary impacts to industrial activities and production would be long-term, minor, and beneficial. No adverse direct impacts would be expected because of the proposed project.

Cumulative Impacts

Proposed Action: Cumulatively, the proposed changes in U.S. Antimony operations would continue to provide an important industrial base to the affected area. These impacts would be long term and beneficial. No Cumulative impacts on agricultural, commercial or production activities would be expected.

13. Quantity and Distribution of Employment

This section includes the following resource areas, as required in ARM 17.4.609: Impacts on Quantity and Distribution of Employment

Affected Environment

U.S. Antimony anticipates they will hire approximately 20 new employees after the proposed action is completed. Contractors would be hired to accommodate construction activities associated with the proposed project.

Direct Impacts

Proposed Action: U.S. Antimony would use contracted services to construct the proposed facility. Therefore, any direct impacts to the quantity and distribution of employment in the affected area during the construction phase would be short-term, negligible, and beneficial.

U.S. Antimony has proposed to increase the number of full-time personnel from 15 to 35 people after the construction phase of the proposed action is complete. It is anticipated that

U.S. Antimony will hire from the local population. Direct impacts to quantity and distribution of employment in the affected area during the operation phase would be long-term, negligible, and beneficial.

Secondary Impacts

Proposed Action: U.S. Antimony would use existing and new staff to operate the proposed facility. Therefore, any secondary impacts to the quantity and distribution of employment in the affected area would be long-term, minor, and beneficial. No adverse secondary impacts would be expected because of the proposed project.

Cumulative Impacts

Proposed Action: Minor, beneficial cumulative impacts are expected on long-term employment as a result of the proposed action because the proposed action would increase the number of full-time employees from 15 to 35.

14. Local and State Tax Base and Tax Revenue

This section includes the following resource areas, as required in ARM 17.4.609: Impacts on Local and State Tax Base and Tax Revenue

Affected Environment

The proposed project would be small by industrial standards and the amount of time and resources necessary to accommodate the proposed action would be relatively limited.

Direct Impacts

Proposed Action: Negligible to minor short-term impacts to local and state tax base and revenue may be associated with the proposed action due to an increase in personnel during the construction phase and the associated applicable employment taxes.

Minor and short-term direct construction or operational impacts to local and state tax base and tax revenues would be expected because of the proposed project once the construction phase is complete.

Secondary Impacts

Proposed Action: Local, state and federal governments would be responsible for appraising the property, setting tax rates, collecting taxes, from the companies, employees, or landowners benefiting from the proposed operation. Further, U.S. Antimony would be responsible for accommodation of any increased taxes associated with operation of the proposed facility. Therefore, any secondary impacts would be negligible to minor, consistent with existing impacts in the affected area, and beneficial. No adverse secondary impacts would be expected because of the proposed project.

Cumulative Impacts

Proposed Action: Beneficial short-term, minor impacts to local and state tax base and tax revenues are anticipated from this permitting action because contractors would be hired to accommodate construction activities and 20 new, long-term employees would be expected to be hired for long-term operations.

15. Demand for Government Services

This section includes the following resource areas, as required in ARM 17.4.609: Impacts on Demands for Government Services

Affected Environment

The proposed action adds five (5) 3.0 million British thermal unit per hour (MMBtu/hr) reduction furnaces, two (2) 3.0 MMBtu/hr remelt furnaces, two (2) 3.0 MMBtu oxidizer furnaces, as well as multiple process conveyors.

Direct Impacts

Proposed Action: The air quality permit has been prepared by state government employees as part of their day-to-day, regular responsibilities. Therefore, any adverse direct impacts to demands for government services is consistent with existing impacts and negligible. No beneficial direct impacts would be expected because of the proposed project.

Secondary Impacts

Proposed Action: Following the construction phase of the proposed action, initial and ongoing compliance inspections of facility operations would be accomplished by state government employees as part of their typical, regular duties and required to ensure the facility is operating within the limits and conditions listed in the air quality permit. Therefore, any adverse secondary impacts to demands for government services would be consistent with existing impacts and negligible. No beneficial secondary impacts would be expected because of the proposed project.

Cumulative Impacts

Proposed Action: Minor cumulative impacts are anticipated on government services with the proposed action and a minimal increase in impact would occur but regulators would likely combine visits to cover regulatory oversight needs.

16. Locally Adopted Environmental Plans and Goals

This section includes the following resource areas, as required in ARM 17.4.609: Impacts on Locally Adopted Environmental Plans and Goals

Affected Environment

DEQ reviewed the Sanders County website and did not identify any locally adopted environmental plans and goals in the affected area. U.S. Antimony has indicated, in application number 2973-04_2025_09_03_APP that no known state, county, city, USFS, BLM, or tribal zoning or management plans and goals are known to potentially affect the site**.**

Direct Impacts

Proposed Action: No locally adopted environmental plans and goals were identified. Therefore, no direct impacts would be expected because of the proposed project.

Secondary Impacts

Proposed Action: No locally adopted environmental plans and goals were identified.; therefore, no secondary impacts to locally adopted environmental plans and goals would be expected because of the proposed project.

Cumulative Impacts

Proposed Action: No cumulative impacts to the locally adopted environmental plans and goals are anticipated since no direct impacts or secondary impacts were identified.

17. Access to and Quality of Recreational and Wilderness Activities

This section includes the following resource areas, as required in ARM 17.4.609: Impacts on Access to and Quality of Recreation and Wilderness Activities

Affected Environment

The U.S. Antimony facility is located at 47°32'51.7"N 115°35'31.4"W. The area surrounding the facility is forested land with multiple county roads providing access to the surrounding area. The area where the proposed action is located is within the existing U.S. Antimony property boundary.

Direct Impacts

Proposed Action: Minor and short-term impacts are expected during the construction phase of the project due to equipment being delivered via National Forest Developed Road 876 (NF 876. The approach to the U.S. Antimony facility is a throughway that connects Montana Secondary Highway 471 to NF 876. No persons would be expected to use the affected site for the purposes of wilderness or recreational activities; therefore, no direct operational impacts to access to and quality of recreational and wilderness actives are expected with the proposed action.

Secondary Impacts

Proposed Action: Minor secondary and long-term operational impacts are expected due to increased product shipping from the facility. The throughway to the facility leads directly to Secondary Highway 471. Alternate routes to the smelting facility may be needed during times of heavy snowfall or runoff due to spring melting or heavy rain. No persons would be expected to use the affected site for the purposes of wilderness or recreational activities; therefore, no secondary impacts would be expected because of the proposed project.

Cumulative Impacts

Proposed Action: Minor, long- and short-term cumulative impacts are expected with the proposed action. No persons would be expected to use the affected site for the purposes of wilderness or recreational activities; therefore, no cumulative impacts would be expected because of the proposed project.

18. Density and Distribution of Population and Housing

This section includes the following resource areas, as required in ARM 17.4.609: Impacts on Density and Distribution of Population and Housing

Affected Environment

The proposed action will not impact density and distribution of population and housing in the affected area.

Direct Impacts

Proposed Action: No direct impacts from construction or operation of the facility are expected because of the proposed action.
U.S. Antimony would employ existing staff and/or hire contracted services to construct the facility and the proposed project would not be expected to otherwise result in an increase or decrease in the local population or result in the need for new housing.

Secondary Impacts

Proposed Action: U.S. Antimony would employ existing and 20 new staff to operate the facility, and the proposed action would not be expected to otherwise result in an increase or decrease in the local population. Therefore, any secondary impacts to density and distribution of population and housing would be negligible and long-term because of the proposed project.

Cumulative Impacts

Proposed Action: U.S. Antimony would employ existing and 20 new staff to operate the facility, and the proposed action would not be expected to otherwise result in an increase or decrease in the local population. Therefore, any cumulative impacts to density and distribution of population and housing would be negligible and long-term because of the proposed project.

19. Social Structures and Mores

This section includes the following resource areas, as required in ARM 17.4.609: Impacts on Social Structures and Mores

Affected Environment

DEQ is not aware of any Native American cultural concerns that would be affected by the proposed activity. Based on the information provided by U.S. Antimony, it is not anticipated that this project would disrupt traditional lifestyles or communities. A State Historical Preservation Office cultural inventory is noted in Section 7 of the EA. Also, U.S. Antimony operates an existing antimony smelter in the affected area and the proposed action would expand but not change existing operations, so no change to the affected area would be expected because of the proposed action.

Direct Impacts

Proposed Action:
No direct impacts would be expected because of the proposed project. U.S. Antimony operates an existing antimony smelter in the affected area and the proposed action would expand but not change existing operations, so no change to the affected area would be expected because of the proposed action. As such, existing social structure, customs, values, and conventions of the affected area would not change because of the proposed action.

Secondary Impacts

Proposed Action: No secondary impacts to the existing social structures and mores of the affected population would be expected because of the proposed project. The existing nature of the area affected by the proposed project is industrial (antimony smelting); therefore, operation of the facility would not be expected to affect the existing customs and values of the affected population.

Cumulative Impacts

Proposed Action: The existing nature of the area affected by the proposed project is industrial (antimony smelting). It is not anticipated that this project would cause a shift in some unique quality of the area. U.S. Antimony operates an existing antimony smelter in the affected area and the proposed action would expand but not change existing operations, so no change to the affected area would be expected because of the proposed action. As such, existing social structure, customs, values, and conventions of the affected area would not change and no cumulative impacts would be expected because of the proposed action.

20. Cultural Uniqueness and Diversity

This section includes the following resource areas, as required in ARM 17.4.609: Impacts to Cultural Uniqueness and Diversity

Affected Environment

It is not anticipated that this project would cause a shift in any unique quality of the area. As discussed in Section 7. – Historical and Archaeological Sites, there are no unique resource present in the proposed project area. Also, U.S. Antimony operates an existing antimony smelter in the affected area and the proposed action would expand but not change existing operations, so no change in the cultural uniqueness and diversity of the affected area would be expected because of the proposed action.

Direct Impacts

Proposed Action: No direct impacts to the existing cultural uniqueness and diversity of the affected population would be expected because of the proposed project. U.S. Antimony operates an existing antimony smelter in the affected area and the proposed action would expand but not change existing operations, so no change to the affected area would be expected because of the proposed action. As such, existing cultural norms of the affected area would not change and no direct impacts to diversity of the affected area would be expected because of the proposed action.

Secondary Impacts

Proposed Action: No secondary impacts to the existing cultural uniqueness and diversity of the affected population would be expected because of the proposed project. U.S. Antimony operates an existing antimony smelter in the affected area and the proposed action would expand but not change existing operations, so no change to the affected area would be expected because of the proposed action. As such, existing cultural norms of the affected area would not change and no secondary impacts to diversity of the affected area would be expected because of the proposed action.

Cumulative Impacts

Proposed Action: No cumulative impacts to the existing cultural uniqueness and diversity of the affected population would be expected. U.S. Antimony operates an existing antimony smelter in the affected area and the proposed action would expand but not change existing operations, so no change to the affected area would be expected because of the proposed action. As such, existing cultural norms of the affected area would not change and no cumulative impacts to diversity of the affected area would be expected because of the proposed action.

21. Private Property Impacts

The proposed project would take place on private land owned by the applicant. DEQ's approval of U.S. Antimony's permit would affect the applicant's real property. DEQ has determined, however, that the permit conditions are reasonably necessary to ensure compliance with applicable requirements. Therefore, DEQ's approval of U.S. Antimony's permit would not have private property-taking or damaging implications.

22. Other Appropriate Social and Economic Circumstances

This section includes the following resource areas, as required in ARM 17.4.609: Impacts to Other Appropriate Social and Economic Circumstances

Affected Environment

The applicant would be required to adhere to all applicable state and federal safety laws. The Occupational Safety and Health Administration (OSHA) has developed rules and guidelines to reduce the risks associated with this type of labor. Few, if any, members of the public would be in immediate proximity to the project during construction or operations.

Direct Impacts

Proposed Action: DEQ is unaware of any other appropriate short-term social and economic circumstances in the affected area that may be directly impacted by the proposed project. Due to the nature of the proposed action, no further direct impact would be expected because of the proposed project.

Secondary Impacts

Proposed Action: The proposed project would refurbish the existing furnace facility. Any impact to air quality from installing new baghouses for the furnaces would be long-term, minor, and beneficial.

DEQ is unaware of any other appropriate long-term social and economic circumstances in the affected area that may be impacted by the proposed project. No further secondary impacts would be expected because of the proposed project.

Cumulative Impacts

Proposed Action: No cumulative impacts to any other appropriate social and economic circumstances are anticipated because no direct and secondary impacts were identified. The proposed project would take place on private land. DEQ has determined that the permit conditions are reasonably necessary to ensure compliance with applicable requirements under the Montana Clean Air Act. Therefore, DEQ's approval of MAQP #2973-05 would not have private property-taking or damaging implications.

23. Greenhouse Gas Assessment

The analysis area for this resource is limited to the activities regulated by the issuance of U.S. Antimony's permit, which adds five new (5) 3.0 million British thermal unit per hour (MMBtu/hr) reduction furnaces, two (2) 3.0 MMBtu/hr remelt furnaces, two (2) 3.0 MMBtu oxidizer furnaces. The amount of propane fuel utilized at this site may be impacted by a number of factors including seasonal weather impediments, smelting needs, and equipment malfunctions.

DEQ has defined greenhouse gas emissions as the following gas species: carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), and many species of fluorinated compounds. The range of fluorinated compounds includes numerous chemicals which are used in many household and industrial products. Other pollutants can have some properties that also are similar to those mentioned above, but the EPA has clearly identified the species above as the primary GHGs.

Water vapor is also technically a greenhouse gas, but its properties are controlled by the temperature and pressure within the atmosphere, and it is not considered an anthropogenic species.

The combustion of diesel fuel at the site for the purposes of construction activities would release GHGs primarily being carbon dioxide (CO_2), nitrous oxide (N_2O) and much smaller concentrations of un-combusted fuel components including methane (CH_4) and other volatile organic compounds (VOCs). The proposed project does not include heavy construction activities during the construction phase of the project. The amount of GHG emissions that would result from construction equipment during the construction phase are expected to be minor and therefore were not included in this analysis.

DEQ has calculated GHG emissions from propane combustion associated with ongoing and expanded smelting operations (i.e., furnace burners) using the EPA Simplified GHG Calculator version May 2023, for the purpose of totaling GHG emissions.

This tool totals carbon dioxide (CO_2), nitrous oxide (N_2O), and methane (CH_4) and reports the total as CO_2 equivalent (CO_2e) in metric tons CO_2e.

The calculations in this tool are widely accepted to represent reliable calculation approaches for developing a GHG inventory. DEQ has determined EPA's Scope 1 GHG impacts as defined in the Inventory Guidance for Greenhouse Gas Emissions are appropriate under MEPA for this Proposed Action. Scope 1 emissions are defined as direct GHG emissions that occur from sources that are controlled or owned by the organization (EPA Center for Corporate Climate Leadership). DEQ's review of Scope 1 emissions is consistent with the agency not evaluating downstream effects of other types of impacts.

This review does not include an assessment of GHG impacts in quantitative economic terms, otherwise known as evaluating the social cost of carbon. DEQ instead calculates potential GHG emissions and provides a narrative description of GHG impacts. This approach is consistent with Montana Supreme Court case law and the agency's discussion of other impacts in this EA. *See Belk v. Mont. DEQ*, 2022 MT 38, ¶ 29.

Applicants estimate that between approximately 3,073,180 gallons of propane fuel would be utilized on an annual basis. Using the Environmental Protection Agency's (EPA) simplified GHG Emissions Calculator for stational combustion sources, 0.01753 million metric tons of CO_2e would be produced on an annual basis.

Secondary Impacts

GHG emissions contribute to changes in atmospheric radiative forcing, resulting in climate change impacts. GHGs act to contain solar energy loss by trapping longer wave radiation

emitted from the Earth's surface and act as a positive radiative forcing component (BLM 2021).

Per EPA's website "Climate Change Indicators", the lifetime of carbon dioxide cannot be represented with a single value because the gas is not destroyed over time. The gas instead moves between air, ocean, and land mediums with atmospheric carbon dioxide remaining in the atmosphere for thousands of years, due in part to the very slow process by which carbon is transferred to ocean sediments. Methane remains in the atmosphere for approximately 12 years. Nitrous oxide has the potential to remain in the atmosphere for about 109 years (EPA, Climate Change Indictors). The impacts of climate change throughout the western region of Montana include changes in flooding and drought, rising temperatures, and the spread of invasive species (BLM 2021).

Cumulative Impacts

Montana recently used the EPA State Inventory Tool (SIT) to develop a greenhouse gas inventory in conjunction with preparation of a possible grant application for the Community Planning Reduction Grant (CPRG) program. This tool was developed by EPA to help states develop their own greenhouse gas inventories, and this relies upon data already collected by the federal government through various agencies. The inventory specifically deals with carbon dioxide, methane, and nitrous oxide and reports the total as CO_2e. The SIT consists of eleven Excel based modules with pre-populated data that can be used with default settings or in some cases, allows states to input their own data when the state believes their own data provides a higher level of quality and accuracy. Once each of the eleven modules is filled out, the data from each module is exported into a final "synthesis" module which summarizes all of the data into a single file. Within the synthesis file, several worksheets display the output data in a number of formats such as GHG emissions by sector and GHG emissions by type of greenhouse gas.

DEQ has determined the use of the default data provides a reasonable representation of the greenhouse gas inventory for the various sectors of the state, and the estimated total annual greenhouse gas inventory by year. The SIT data from EPA is currently only updated through the year 2022, as it takes several years to validate and make new data available within revised modules. DEQ maintains a copy of the output results of the SIT.

DEQ has determined that the use of the default data provides a reasonable representation of the GHG inventory for all of the state sectors, and an estimated total annual GHG inventory by year. At present, Montana accounts for 51.04 million metric tons of CO_2e based on the EPA SIT for the year 2022. This project may contribute up to 0.01753 million metric tons per year of CO_2e. The estimated emission of 0.01753 million metric tons of CO_2e from this project would contribute 0.034% of Montana's annual CO_2e emissions.

GHG emissions that would be emitted as a result of the proposed activities would add to GHG emissions from other sources. The No Action Alternative would contribute less than the Proposed Action Alternative of GHG emissions. The current land use of the area is antimony smelting.

Description of Alternatives

"No Action" Alternative: In addition to the proposed action, DEQ must also considered a "no action" alternative. The "no action" alternative would deny the approval of MAQP

#2973-05. The applicant would lack the authority to conduct the proposed activity. Any potential impacts that would result from the proposed action would not occur. The no action alternative forms the baseline from which the impacts of the proposed action can be measured.

If the applicant demonstrates compliance with all applicable rules and regulations required for approval, the "no action" alternative would not be appropriate.

Other Reasonable Alternative(s): Based on the nature of the project, no other reasonable alternatives were considered for the proposed action.

Consultation
DEQ engaged in internal and external efforts to identify substantive issues and/or concerns related to the proposed project. Internal scoping consisted of internal review of the environmental assessment document by DEQ staff, U.S. Antimony staff, Power Engineering consulting, staff.

External scoping efforts also included queries to the following websites/databases/personnel: Montana Natural Resource Information System, Montana State Historical Preservation Office.

Public Involvement
The public comment period for this permit action is November 10, 2025, through November 25, 2025.

Significance of Potential Impacts and Need for Further Analysis
When determining whether the preparation of an environmental impact statement is needed, DEQ is required to consider the seven significance criteria set forth in ARM 17.4.608, which are as follows:

- The severity, duration, geographic extent, and frequency of the occurrence of the impact;
- 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;
- Growth-inducing or growth-inhibiting aspects of the impact, including the relationship or contribution of the impact to cumulative impacts – identify the parameters of the proposed action;
- The quantity and quality of each environmental resource or value that would be affected, including the uniqueness and fragility of those resources and values;
- The importance to the state and to society of each environmental resource or value that would be affected;
- Any precedent that would be set as a result of an impact of the proposed action that would commit the department to future actions with significant impacts or a decision in principle about such future actions; and
- Potential conflict with local, state, or federal laws, requirements, or formal plans.

Conclusions and Findings

DEQ finds that this action results in negligible impacts to air quality and GHG emissions in Sanders County, Montana.

No significant adverse impacts would be expected because of the proposed project. As noted through the draft EA, the severity, duration, geographic extent and frequency of the occurrence of the impacts associated with the proposed air quality project would be limited. The proposed action would result in the new furnace burners, conveyors, and bag houses installed in an already existing facility.

The Applicant is proposing to install new furnace burners, conveyors, and baghouses in the antimony smelting facility. The site would be permitted to operate the antimony smelting facility 8,760 hours per calendar year using BACT for the control of emissions from the proposed operations.

As discussed in this EA, DEQ has not identified any significant impacts associated with the proposed actions for any environmental resource. DEQ does not believe that the activities proposed by the Applicant would have any growth-inducing or growth-inhibiting aspects, or contribution to cumulative impacts. The proposed project site does not appear to contain known unique or fragile resources.

There are no unique or known endangered fragile resources in the project area and no underground disturbance would be required for this project.

There would be negligible impacts to view-shed aesthetics as the smelting facility is in an area of limited visibility from the highway.

Demands on the environmental resources of land, water, air, or energy would be negligible.

Impacts to human health and safety would be insignificant.

As discussed in this EA, DEQ has not identified any significant impacts associated with the proposed activities on any environmental resource.

Issuance of a Montana Air Quality Permit #2973-05 to the Applicant does not set any precedent that commits DEQ to future actions with significant impacts or a decision in principle about such future actions. If the Applicant submits another modification or proposes to amend the permit, DEQ is not committed to issuing those revisions.

DEQ would conduct an environmental review for any subsequent permit modifications sought by the Applicant pursuant to MEPA. DEQ would make permitting decisions based on the criteria set forth in the Clean Air Act of Montana.

Issuance of the Permit to the Applicant does not set a precedent for DEQ's review of other applications for Permits, including the level of environmental review. The level of environmental review decision is made based on case-specific consideration of the criteria set forth in ARM 17.4.608.

Finally, DEQ does not believe that the proposed air quality permitting action by the Applicant would have any growth-inducing or growth inhibiting impacts that would conflict 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, no significant adverse impacts to the affected human environment would be expected because of the proposed project. Therefore, preparation of an Environmental Impact Statement or EIS is not required, and the draft EA is deemed the appropriate level of environmental review pursuant to MEPA.

Preparation
Environmental Assessment and Significance Determination Prepared By:

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Air Quality Engineer

Environmental Assessment Reviewed By:

Criag Henrikson, P.E.
Air Quality Engineer

Approved By:

Eric Merchant, Supervisor
Air Quality Permitting Services Section
Air Quality Bureau
Air, Energy, and Mining Division
Department of Environmental Quality

References

- 2973-05_2025_09_03_APP – Application received from Power Engineers, on behalf of United States Antimony Corporation on September 3, 2025. Additional information was received on October 7, 2025.

- EPA GHG Calculator Tool https://www.epa.gov/statelocalenergy/state-inventory-and-projection-tool

- EPA State Inventory Tool, https://www.epa.gov/statelocalenergy/state-inventory-and-projection-tool

- 2021 BLM Specialist Report on Annual Greenhouse Gas Emissions and Climate Trends, https://www.blm.gov/

- https://www.blm.gov/content/ghg/?year=2022

- 2973-05_2025_10_21_SHPO – State Historical Preservation Office Investigation

- 2973-05_2025_10_20_NRIS – Natural Resource Information System Endangered Species Investigation, https://mtnhp.org

- https://www.mbmg.mtech.edu/mbmgcat/public/ListCitation.asp?pub_id=10034&#gsc.tab=0, Crowley, F.A., 1963, Mines and mineral deposits (except fuels), Sanders County, Montana: Montana Bureau of Mines and Geology Bulletin 34, 58 p., 6 sheets.