Errata and Clarifications

METHODOLOGY FOR THE QUANTIFICATION, MONITORING, REPORTING AND VERIFICATION OF GREENHOUSE GAS EMISSIONS REDUCTIONS AND REMOVALS FROM CAPTURING AND DESTROYING METHANE FROM COAL AND TRONA MINES IN NORTH AMERICA

VERSION 1.1

2025-05-19

This Errata and Clarifications document is supplemental document to the ACR Methodology *Capturing and Destroying Methane from Coal and Trona Mines in North America* and applies to all projects registered under the Methodology. Each erratum and clarification contained herein is effective as of its posting date listed below. This document may be updated as supplemental information or clarifications are needed. Project Developers and Verification Bodies shall adhere to the errata and clarifications when implementing projects and conducting verification activities.

1. Erratum: Eligible End-Use Management Options (2023-04-28)

Section 3.1.I.C states the following text.

> "I. Offset projects that use this methodology must: …
>
> > "C. Destroy the captured mine methane through an eligible end-use management option per Section 3.4."

By this Erratum, "Section 3.4" is corrected to "Section 3.3."

2. Clarification: Eligible End-Use Management Options (2023-04-28)

Section 3.3.II.B.i states that "destruction of extracted mine methane from any end-use management option other than pipeline injection automatically satisfies the performance standard evaluation," and Section 3.3.II.D.i states that "destruction of extracted mine methane

from any end-use management option automatically satisfies the performance standard evaluation."

By this Clarification, one such eligible end-use management option is as a feedstock for manufacturing processes or manufactured products.

3. Clarification: SSR1 for Active Underground Mine Methane Drainage Activities (2023-04-28)

SSR1 and its description in Table 2 under Section 4.2.II read, respectively as follows: "1 Active underground mine VAM emissions" and "Emissions from the venting of mine methane extracted through methane drainage system."

By this Erratum, the text in Table 2 is revised as follows: "1 Active underground mine methane emissions" and "Emissions from the venting of mine methane extracted through methane drainage systems," respectively.

4. Erratum: Leakage Emissions (2023-04-28)

Equations 1, 9, 18, and 30 calculate GHG emission reductions (ER) as follows: "ER = BE - PE" (where "BE" represents "baseline emissions" and "PE" represents "project emissions.")

Whereas it is recognized that MMC project activities do not pose a risk for GHG emission leakage by activity-shifting or market transformation, it is possible for an increase in GHG emissions to occur outside project boundaries resulting from project implementation in the context of captured mine methane as a feedstock for manufactured products. This is because some products manufactured from captured mine methane feedstock might generate end-of-life GHG emissions based on disposal method (e.g., composting, landfilling).

By this Erratum, the text in each equation is revised as follows: "ER = BE - PE - LE" (where "LE" represents "leakage emissions.") In addition, the following text is included in a footnote after each equation.

> "If an MMC project's end-use management option is based on combustion (e.g., via onsite electricity generation, onsite flaring, pipeline injection) of the captured mine methane, then LE may be assumed to be zero (0). If captured mine methane as a manufacturing feedstock serves as the MMC project's eligible end-use management option and if project leakage emissions exist from the disposal and end-of-life of the manufactured products, the Project Proponent will provide to the Validation/Verification Body for review and approval end-of-life GHG testing results that are relevant to the applicable disposal conditions (e.g., third-party accredited ASTM D6400 reports for Industrial Composting, TUV Home Compost results for Home Composting, ASTM D5511 for landfill disposal). In the absence of actual and

traceable end-of-life disposal location data (i.e., percent of product composted, landfilled, incinerated, etc.), the Project Proponent will use best available estimates consistent with the EPA WARM Waste Reduction Model for location breakdown percentages by product type. https://www.epa.gov/sites/default/files/2015-09/documents/renz_warm.pdf."

5. Erratum: Monitoring Requirements (2023-04-28)

Sections 6.5.II, 6.6.II, and 6.7.II include the following sentence: "The flow rate of MG sent to a destruction device must be measured continuously, recordings must not exceed 15-minute intervals, and adjusted for temperature and pressure, if applicable, to calculate daily volume of MG sent to a destruction device."

By this Erratum, the text in each section is revised as follows: "The flow rate of MG sent to a destruction device must be measured continuously, recordings must not exceed 15-minute intervals, and adjusted for temperature and pressure, if applicable."

6. Erratum: Electricity Emission Factors (2023-04-28)

Equations 5, 14, 26, and 35 require the emission factor of electricity (MT CO2e/MWh) used for offset project activities to come from Appendix A's "Table 10: Emissions & Generation Resource Integrated Database (eGRID2016)," where the source of the data is shown as "Source: U.S. EPA eGRID2016, Version 1.0 Year 2016 GHG Annual Output Emission Rates (Created February 2018) https://www.epa.gov/sites/production/files/2018-02/documents/egrid2016_summarytables.pdf."

By this Erratum, the text in Appendix A is revised as follows:

> "Project Proponents must use the carbon dioxide emission factor for total output electricity (lb CO2/MWh) used in the USEPA eGRID subregion where the offset project is located. The eGRID subregion corresponding to a project's location can be determined from https://www.epa.gov/egrid/power-profiler#/.
>
> "In addition, Project Proponents must the USEPA eGRID subregion total output carbon dioxide emission factor corresponding to the calendar year for when the project activity emissions occurred (e.g., eGRID2019 for CY20219 project activity emissions and eGRDI2020 for CY2020 project activity emissions). Should eGRID data be unavailable for the calendar year when project activity emissions occurred, then Project Proponents must use the latest published eGRID data (e.g., eGRID2021 for CY2022 project activity emissions because eGRID2022 is not yet available). The eGRID datasets may be found at https://www.epa.gov/egrid/download-data.

7. Clarification: Default Methane Destruction Efficiency (2023-04-28)

Appendix B's "Table 12: Default Methane Destruction Efficiencies [DMDE] by Destruction Device" provides a DMDE value of 98.1% for the destruction device termed "upgrade and injection into natural gas transmission and distribution pipeline."

By this Clarification, Table 12's DMDE value for the "upgrade and injection into natural gas transmission and distribution pipeline" is based on the offsite combustion – as fuel for power generation (e.g., natural gas combined cycle [NGCC] power plant), for heat recovery or steam generation at a manufacturing facility, etc. – of the captured mine methane. This clarification is consistent with the SSR9 description (i.e., "emissions resulting from mine methane combustion resulting from pipeline injection / Emissions resulting from incomplete combustion resulting from pipeline injection") in Tables 2, 3, and 4 in Sections 4.2.II, 4.3.II, and 4.4.II, respectively.

8. Clarification: Document Retention Requirements for the Project Proponent (2025-05-19)

Section 6.3, subsections I and II of the Methodology describe the GHG Project documents and information that must be retained by the Project Proponent. Per this clarification, the following new subsection III is added to section 6.4 to specify how long documents and information must be retained by the Project Proponent.

"III. The Project Proponent shall keep all documents and information pertaining to the GHG Project in a secure and retrievable manner for at least two (2) years after the end of the project's Crediting Period."

9. Erratum: Supplemental Mine Gas in Active Underground Mine Ventilation Air Methane Project Activities (2025-05-19)

Modifications are made to account for mine gas used to supplement ventilation air methane, consistent with Sections 2.1.I.B and 3.4.III.A.ii.

SSRs are added and corrected in Figure 1 and Table 1 and subsequent SSRs are renumbered (deletions are struck out and additions are underlined).

Figure 1: Offset Project Boundary for Active Underground Mine VAM Activities

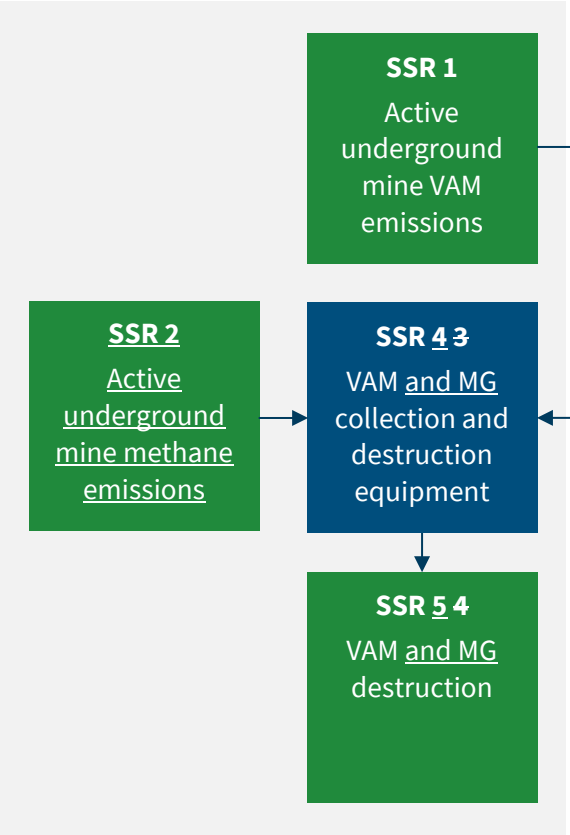

Table 1: Greenhouse Gas Sinks, Sources, and Reservoirs for Active Underground Mine VAM Activities

SSR	DESCRIPTION	GHG	BASELINE (B) OR PROJECT (P)	INCLUDED OR EXCLUDED
1 Active underground mine VAM emissions	Emissions from the venting of VAM through mine ventilation system	CH_4	B, P	Included
2 Active underground mine methane emissions	Emissions from the venting of mine methane extracted through methane drainage system	CH_4	B, P	Included if VAM project activities supplement VA with MG extracted from a

SSR	DESCRIPTION	GHG	BASELINE (B) OR PROJECT (P)	INCLUDED OR EXCLUDED
				methane drainage system
3 ~~2~~ Ventilation system	Emissions resulting from energy consumed to operate mine ventilation system	CO_2	n/a	Excluded
		CH_4	n/a	Excluded
		N_2O	n/a	Excluded
4 ~~3~~ VAM and MG collection and destruction equipment	Emissions resulting from energy consumed to operate additional equipment used to capture or destroy VAM and drained mine gas	CO_2	P	Included
		CH_4	n/a	Excluded
		N_2O	n/a	Excluded
5 ~~4~~ VAM and MG destruction	Emissions resulting from ~~VAM~~ destruction of VAM and drained mine gas	CO_2	B, P	Included
		N_2O	n/a	Excluded
	Emissions of uncombusted methane	CH_4	B, P	Included
6 ~~5~~ Construction and equipment installation	Emissions from construction and/or installation of new equipment	CO_2	n/a	Excluded
		CH_4	n/a	Excluded
		N_2O	n/a	Excluded
	Fugitive emissions from construction	CH_4	n/a	Excluded

The following text is modified to Section 5.1.1.IV (additions are underlined):

> "VAM project activities may supplement VA with mine gas (MG) extracted from a methane drainage system to either increase or help balance the methane concentration of VA flowing into the destruction device. If MG is used to supplement VA, this supplemental MG must be accounted for in baseline emission quantifications. If $VA_{flow,t}$ and $C_{CH4,t}$ are measured before

being supplemented with MG, the MG destroyed by the project during the reporting period must be accounted for using Equation 3 as $MG_{flow,t}$. If $VA_{flow,t}$ and $C_{CH4,t}$ are measured after being supplemented with MG, the MG is accounted for within those values.

The following text is modified to Section 5.1.2.IV (deletions are struck out and additions are underlined):

"If the project uses fossil fuel or grid electricity to power additional equipment required for project activities (e.g., capturing and destroying ventilation air, transporting ~~ventilation air~~ mine gas, etc.), the resulting CO_2 emissions from the energy consumed to capture and destroy methane (PE_{EC}) must be quantified using Equation 5."

The following text is modified to Section 5.1.2.VII (additions are underlined):

"If MG is used to supplement VA, this supplemental MG must be accounted for in project emission quantifications. If $VA_{flow,t}$ and $C_{CH4,t}$ are measured before being supplemented with MG, the MG destroyed by the project during the reporting period must be accounted for using Equation 7 as $MG_{flow,t}$. If $VA_{flow,t}$ and $C_{CH4,t}$ are measured after being supplemented with MG, the MG is accounted for within those values.

Equation 7 is modified below to clarify that, when MG is used to supplement VA and when VA flow rate and methane concentration are measured before being supplemented with VAM, the flow rate of mine gas $MG_{flow,t}$, multiplied by the duration of time interval **T**, is included in the calculation of the project emissions of non-oxidized methane $PE_{NO,i,t}$ emitted as a result of incomplete oxidation of the ventilation air stream sent to qualifying destruction device **i** during time interval **t**.

$$PE_{NO_{i,t}} = \sum_{t} \left[\left(VA_{flow_t} \times T \right) + \left(CA_{flow_t} \times T \right) + \left(MG_{flow_t} \times T \right) \right] \times C_{CH4_{exhaust_t}} \times 0.0423 \times 0.000454$$