



May 8, 2024

California Air Resources Board
Submitted via CARB Website
1001 I Street
Sacramento, California 95814

Re: Comments to ARB Workshop Held April 23, 2024

Please find our comments to the California Air Resources Board (CARB) Workshop held on April 23, 2024, in the following memorandum. The comments we have submitted are in response to ARB staff's comments regarding the Mine Methane Capture Protocol. We submit these comments for review and consideration in the continued use of the decline curve and the continued interpretation by ARB of the offset protocol that only one Offset Project Operator may operate a project at an abandoned mine.

Please feel free to contact us using the information contained herein should ARB staff have any questions or concerns regarding this memorandum or wish to discuss these comments further.

Very Truly Yours,

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Compliance Offset Protocol
Mine Methane Capture Projects

Re: The Need to Reexamine and Eliminate the Barriers for Multiple OPOs

From: Steve Miller and Wes Brooke
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A. CURRENT PROTOCOL

- a. The current protocol interpretation allows only one OPO for each abandoned coal mine. As illustrated below, allowing only one OPO, rather than multiple OPOs, unfortunately constrains the destruction of abandoned mine methane resulting in more methane being emitted than would be if multiple OPOs were allowed. Such result is completely contrary to the mission of the protocol.

B. WHO HAS THE MINERAL RIGHTS TO CAPTURE AND DESTROY COAL MINE METHANE?

- a. Virtually all coal produced by a coal mine operator, “Coal Mining Company” is done pursuant to acquired coal lease rights from multiple mineral interest owners. For example, 97% of Peabody Energy Corp’s. coal reserves and 94% of its coal resources are held under lease and the small remainder is held through fee ownership. (Peabody Energy Corp., 2023 SEC Form 10-K, page 45).
- b. As coal mines cover vast areas, there are many mineral interest owners associated with a coal mine. A landowner may own the mineral interests, or such rights may have been severed from the land rights and separately held by others. Accordingly, there are multiple interested parties that have legal and economic interests with regard to the extraction and destruction of coal mine methane from an abandoned mine.
- c. Coal mine leases generally allow a Coal Mining Company to vent the coal mine methane as necessary for miner safety during mining operations. A Coal Mining Company may continue venting through the reclamation process as necessary.
- d. Generally, once coal mining activities cease a Coal Mining Company no longer possesses the rights to extract coal mine methane. It is even more probable that once the mining activities cease a Coal Mining Company will not possess the rights to flare methane gas and generate credits. To be allowed to do this would require a mineral rights agreement broader than leases to mine the coal.
- e. When coal mining operations cease and a Coal Mining Company no longer has the right to vent and capture the coal mine methane, the right to capture the coal mine methane will be held by the owners of the coal mine methane mineral rights. As

mentioned above, these owners may or may not be the landowners as the coal mine methane rights may have been severed from the land rights.

- f. There will be many different owners of the coal mine methane rights in the area constituting the coal mine.

C. MULTIPLE OPOs

- a. Since there are many different owners of the coal mine methane mineral rights of abandoned mines, there are many problems with unintended and detrimental consequences if there can only be one OPO for the entire area of an abandoned mine.
 - i. Problems with the one OPO approach:
 1. Various owners of the coal mine methane rights will be interested in pursuing the opportunity to capture and destroy the methane that otherwise will leak from the areas where they possess the coal mine methane mineral rights.
 - a. Coal mine methane travels underground based on the pressures and elevation of underground mine voids. The methane does not, as the protocol interpretation infers, travel to a single point where methane may be extracted. In addition, some areas of the mine are sealed off from other portions of the mine and the methane will travel within the sealed area to higher elevations and through cracks and fissures toward the surface rather than to a single point within the mine void. Accordingly, to achieve the mission of reducing methane emissions, multiple points of methane capture and destruction are needed and thus the need for multiple OPOs.
 2. If there is only one OPO allowed for the entire area of an abandoned mine, the one OPO will have a monopoly with respect to the entire mine as it pertains to the ability to destroy the leaking methane and receive carbon credits.
 3. A sole OPO will not have the coal mine methane mineral rights to the entire mine and most likely will have only the rights to a minor portion of the abandoned mine. Thus, the single OPO approach will:
 - a. Block the other owners of coal mine methane mineral rights from the ability to participate in the destruction of the escaping methane and generate carbon credits.
 - b. Result in less destruction of escaping methane as others are not able to participate in the credit opportunities. This is counterproductive to the environmental goal of reducing abandoned mine methane emissions.
 - c. Result in additional coal mine emissions that could have otherwise been captured and destroyed.

4. Since there are multiple OPOs for active mines, problems will be encountered when an active mine becomes an abandoned mine.
 - a. The multiple OPOs of an active mine will be interested in remaining OPOs of the mine when it becomes abandoned.
 - b. If there is only one OPO allowed for the abandoned mine, how will that OPO be selected? How can the method of selecting only one OPO be fair?
 - c. What if the OPOs of the active mine do not have the mineral rights to destroy the methane post abandonment? For example, the right to capture and destroy the coal mine methane based on the provisions of the coal mine lease rights that allow for such activity while there is active mining, will not exist post-closing of the mine. This situation is customary. What will be fair rules to select an OPO to be the sole OPO?

D. PROPOSED SOLUTIONS

a. Eliminate the Decline Curve – The Preferred Solution.

- i. The existence of the decline curve concept is the root of the policy to only allow one OPO. Eliminate the decline curve and such impediment is eradicated.
- ii. The decline curve formula was developed by U.S. EPA in 2001 as a method to estimate methane emissions across 400+ abandoned coal mines and was never intended to establish an accurate mine-specific baseline emissions rate. The uncertainties for individual mine emissions are much greater than the overall 20% uncertainty applied to the 400+ mines using Monte Carlo analysis.
- iii. For many coal mines the active mine emissions rate used for the decline curve is significantly underestimated. The Protocol requires the use of MSHA data only – MSHA collects data for VAM emissions, but not drainage gas emissions. For mines with drainage gas systems, VAM emissions typically represent 50% - 80% of total methane emissions liberated to the atmosphere. VAM and drainage gas emissions have been reported to U.S. EPA GHGRP since 2011.
- iv. Despite the above-mentioned underestimation, a survey of existing AMM projects shows most projects produce only 10 – 30% of the decline curve. This is further evidence that the decline curve and the inability to have multiple OPOs for an abandoned mine are having adverse effects on the goal of reducing methane emissions. Since a single OPO does not have control over the coal mine gas mineral rights for extensive portions of an abandoned mine, the capture and destruction of escaping methane is significantly and unnecessarily restricted. The purpose of the Protocol, the reduction of greenhouse gas emissions, will be better supported if the decline curve is eliminated and even more so if multiple OPOs are allowed

for abandoned mines. The elimination of the decline curve removes the impediment to having multiple OPOs. Each OPO would receive credits based upon the verified methane destruction by such OPO.

- v. Eliminating the decline curve allows for more OPOs and therefore will increase the capture and destruction of methane that would otherwise leak into the atmosphere and further CARB's goal of reducing abandoned mine methane emissions.

b. In the Alternative - If The Decline Curve Is Not Eliminated

i. Allow multiple OPOs.

1. Establish a common plan year for all OPOs and their projects.
2. Have verification performed for all projects for each common plan year.
3. Establish a reasonable time period for verification and review.
4. Allocate the decline curve proportionally among the OPOs based upon the verified destruction of each and the total for all.

ii. Problems if multiple OPOs are not allowed.

1. There will not be a fair, reasonable method for establishing one OPO for the entire coal mine area. There are inherent problems with choosing the OPO based on the first to list, the first to have credits issued, or the first to achieve whatever is the selection standard.

a. Such OPO will only have partial mineral rights to the coal mine methane being emitted from the entire mine area.

- i. This will create a monopoly for the entire mine and allow the entity with monopoly power to exclude other methane mineral rights owners from the carbon credit market or force them to enter into unfavorable agreements.

b. There will be races to be the first to list, the first to have credits issued, or the first to achieve whatever is the selection standard and roadblocks will be created to prevent others from achieving first status. Operators will incur substantial capital investment to plan, secure rights, and then operate in the initial plan year but since only one will be allowed to be the OPO the others will incur significant financial losses.

c. Does the current policy of allowing only one OPO for an abandoned mine unintentionally engender inappropriate behavior by some in the quest of becoming the recognized OPO? Will there be races to become the recognized OPO that are averse to the intents of the protocol and reflect negatively on such and its programs? Please consider the following. We have experienced the ill effects of meritless

claims being advanced by another entity that desired to become the OPO of an abandoned mine. We first obtained the necessary lease rights to capture and destroy methane from the abandoned mine. We listed our project with a registry prior to the other entity listing theirs. We filed for our permit to drill a wellbore to capture the methane. The other entity filed a meritless objection to our permit application. The Department of Natural Resources held a hearing and found the objection to be meritless. The other entity then appealed the decision to the administrative law judge for review. The administrative law judge found the objection to our being provided with a permit to be meritless. The other entity then appealed the administrative law judge's decision to the Department of Natural Resources Commission ("Commission") for its review and determination. The Commission found the objection to be meritless. These proceedings delayed our ability to drill the well and begin our project. The time period of this process from the time of the meritless objection to the final opinion issued by the Commission finding it be without merit was over a year. The other entity took advantage of the delay it caused in its attempt to become the OPO for the abandoned mine at issue. The above is just one example of how manipulation can take place to game the process in quest of being named the OPO of an abandoned mine.

It should be noted that the other entity began its capture and destruction of methane without obtaining a permit. This allowed them to begin their "project" before we could begin ours. We believe their position, which is under review by the Department of Natural Resources and the Vanderburgh County Commercial Court, will be found to be incorrect and their operation not a valid project.

- d. Verification is another process that could be vulnerable if there are races to obtain OPO status. Will speed to verify be prioritized at the expense of thoroughness in attempt to be the first and therefore the only to achieve OPO status at an abandoned mine? This certainly is a possibility.
- e. Destruction of methane emissions will be reduced rather than incented as the sole OPO will not have rights to all the areas from which emissions are present. The OPO may in fact only have rights to a very small area where methane emissions can be captured.

- f. A monopoly will be created for the mine. The OPO will have monopolistic powers with respect to the ability to generate carbon credits for the entire mine even though such OPO may only have the mineral rights to capture and destroy methane from a small portion of the abandoned mine.

As the above illustrates there are a myriad of problems created by the one OPO rule with respect to abandoned mines. These problems can be avoided by either discarding the decline curve or allowing a rational method of sharing it and allowing multiple OPOs at an abandoned mine, as demonstrated in subsection b above. These changes will result in more companies participating in the capture and destruction of abandoned mine methane. These changes will create more comprehensive access to areas of an abandoned mine from which otherwise escaping methane gas can be captured and destroyed. These changes will result in less methane emissions entering the atmosphere - the goal of the Protocol.