U.S. Department
of Transportation
**Pipeline and Hazardous
Materials Safety
Administration**

1200 New Jersey Avenue, SE
Washington, DC 20590

January 3, 2025

Mr. Paul Gross
CEO
Remora Carbon
13685 Otterson Ct
Livonia, MI 48150

Reference No. 24-0126

Dear Mr. Gross:

This letter is in response to your December 20, 2024, email requesting clarification of the Hazardous Materials Regulations (HMR; 49 CFR Parts 171-180) regarding the applicability of the HMR to a new technology your company has developed. In your email, you describe a device designed to capture carbon dioxide that will be attached to a locomotive. Further, you mention that in a previously issued letter of interpretation (LOI; Reference No. 21-0078),[1] PHMSA was asked about the application of similar technology to motor vehicles. In your email, you ask whether your carbon capture device is subject to the HMR when installed on a locomotive.

Based on the information you have provided, the answer is no. Section 171.1(b) and (c) state that the requirements of the HMR apply to each person who offers a hazardous material for transportation in commerce or transports a hazardous material in commerce. It is the opinion of this Office that auxiliary equipment attached to a locomotive with the intent of reducing carbon emissions is not considered to be "in commerce." Therefore, the requirements of the HMR are not applicable to your device.

However, please be aware that there may be applicable requirements from other Federal agencies such as the Federal Railroad Administration, who can be reached at (202) 493-6024, and the Environmental Protection Agency (EPA), who can be reached at (734) 214-4333.

I hope this information is helpful. Please contact us if we can be of further assistance.

Sincerely,

Steven Andrews
Acting Chief, Regulatory Review and Reinvention Branch
Standards and Rulemaking Division

[1] https://www.phmsa.dot.gov/regulations/title49/interp/21-0078

24-0126

Jones, Jessie Jane (PHMSA) Andrews

From: Andrews, Steven (PHMSA)
Sent: Friday, December 20, 2024 2:33 PM
To: Jones, Jessie Jane (PHMSA)
Cc: Dodd, Alice (PHMSA); Nickels, Matthew (PHMSA)
Subject: FW: Remora — PHMSA Letter of Interpretation Request

Follow Up Flag: Follow up
Flag Status: Flagged

Jessie,

I forgot alice is out today. Can you flip this email around into a interp for me real quick with a number? Shoot it to me and assign it to me in Filemaker.

Thanks!
Steven

From: Andrews, Steven (PHMSA) <steven.andrews@dot.gov>
Sent: Friday, December 20, 2024 2:02 PM
To: Dodd, Alice (PHMSA) <Alice.Dodd@dot.gov>
Cc: Nickels, Matthew (PHMSA) <Matthew.Nickels@dot.gov>
Subject: Fw: Remora — PHMSA Letter of Interpretation Request

Alice,

Can you quickly assign this an interp number and assign it to me? Let me know what the number is or send me the incoming with the interp number on it.

Thanks!
Steven

From: Paul Gross <paul@remoracarbon.com>
Sent: Friday, December 20, 2024 1:59:51 PM
To: Andrews, Steven (PHMSA) <steven.andrews@dot.gov>
Cc: clay@lowercasellc.com <clay@lowercasellc.com>
Subject: Remora — PHMSA Letter of Interpretation Request

Hi Steven,

As Clay Dumas discussed with you, Remora is building a carbon capture system for locomotives. Our carbon capture system will be packaged on a tender car behind the locomotive, and will attach to the locomotive's exhaust outlet. It will filter carbon dioxide from the locomotive's exhaust and store the captured CO2 in a tank. We are **requesting a letter of interpretation** to guide our design.

The material being stored is primarily (> 95%) liquid CO2, with small amounts of gaseous N2, O2, and Ar. We will be storing the CO2 in a 20' CO2 ISO container or similar, which will be packaged on the tender car along with the CO2 capture system. A 20' ISO container can hold approximately 20 MT of CO2. The CO2 will be compressed to 20 bar and refrigerated to -40 degrees Celsius.

Our system will also reduce the locomotive's criteria pollutant (e.g. NOx, PM) emissions by 90%, and this reduction will take place ahead of the CO2 capture system.

I am happy to answer any questions you have and look forward to hearing back from you!

Thanks,
Paul

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Paul Gross
CEO, Remora
415-866-8851