



U.S. Department  
of Transportation

**Pipeline and Hazardous  
Materials Safety  
Administration**

1200 New Jersey Avenue, SE  
Washington, D.C. 20590

JAN 20 2015

Mr. Rick Hall, CEP  
Sr. EHS Representative  
Anadarko Petroleum Corporation  
33 West Third St., Suite 300  
Williamsport, PA 17701

Reference No. 14-0159

Dear Mr. Hall:

This is in response to your August 21, 2014 email and subsequent conversation regarding the applicability of the Hazardous Materials Regulations (HMR; 49 CFR Parts 171-180) to the transportation of technologically enhanced naturally occurring radioactive materials (TENORM). In your email you indicate that drilling and extraction processes by the oil and gas exploration and development industry may generate TENORM. Specifically, you ask if TENORM qualifies for exception under § 173.401(b)(4) in light of changes made to the section in a final rule issued under Docket No. PHMSA-2009-0063 (HM-250; 79 FR 40589).

The answer to your question is no. You noted that PHMSA has issued an interpretation (Ref. No. 13-0157) that states that we do not consider the referenced wastes to be natural since they were subject to industrial processing. You further noted that the HM-250 rulemaking amended § 173.401(b)(4) to include an exception for "natural material and ores containing naturally occurring radionuclides which...have only been processed for purposes other than for extraction of the radionuclides."

The modification of § 173.401(b)(4) in HM-250 does not change the answer given in interpretation 13-0157. The term "natural material" in § 173.401(b)(4) means material existing in a form as it would otherwise in nature, not in a form manipulated by human application. The fracking water that may contain the TENORM is not a natural material nor is the radionuclide-containing solidified sludge from the fracking water collection pit or the radionuclide-containing filter cake from treatment and recycling of the fracking water. Thus, the exception in § 173.401(b)(4) does not apply and the waste material is subject to

the HMR if the activity concentration of the radionuclides in the waste material and the total activity in the consignment exceed the values specified in § 173.436 or values derived according to the instructions in § 173.433 of the HMR. See the definition of radioactive material in § 173.403.

I hope this satisfies your request.

Sincerely,

  
Shane C. Kelley  
Acting International Standards Coordinator  
Standards and Rulemaking Division

Welds  
§ 173.401  
Radioactive Materials  
14-0159

**Dodd, Alice (PHMSA)**

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**From:** Ciccarone, Michael CTR (PHMSA)  
**Sent:** Thursday, August 21, 2014 2:04 PM  
**To:** Hazmat Interps  
**Subject:** FW: Letter of Interpretation

Shante and Alice,

Please submit this for a formal letter of interpretation. Mr. Hall spoke to Adam Lucas in the HMIC.

Thanks,

Mike

**From:** Hall, Rick [<mailto:Rick.Hall@anadarko.com>]  
**Sent:** Monday, August 18, 2014 4:05 PM  
**To:** INFOCNTR (PHMSA)  
**Subject:** Letter of Interpretation

Dear Sir or Madam-

Anadarko E&P Onshore LLC (Anadarko) has reviewed recently amended requirements in the Hazardous Materials Regulations (HMR) governing the transportation of Class 7 (radioactive) materials. Specifically, Section 173.401(b)(4) was modified and now states: "Natural material and ores containing naturally occurring radionuclides which are either in their natural state, or which have only been processed for purposes other than for extraction of the radionuclides, and which are not intended to be processed for the use of these radionuclides, provided the activity concentration of the material does not exceed 10 times the exempt material activity concentration values specified in § 173.436, or determined in accordance with the requirements of § 173.433."

Anadarko's question is in reference to TENORM that may be present in certain flowback and produced water wastes associated with unconventional well drilling. It has been previously determined that PHMSA does not consider the referenced wastes to be natural since they were subject to industrial processing. However, the PHMSA interpretation occurred prior to the revision of Section 173.401(b)(4). As stated above, the modified rule includes the following additional language: "or which have only been processed for purposes other than for extraction of the radionuclides." Since radionuclides are not being extracted from these flowback and produced water wastes, if the activity concentration of these flowback and produced water wastes do not exceed 10 times the exempt material activity concentration values specified in § 173.436 or determined in accordance with Section 173.433, does subpart I apply to these flowback and produced water wastes?

Thank you for your time and attention to this matter.

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