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GAS AND OIL
GEOLOGY AND MINERAL RESOURCES
MINED LAND RECLAMATION
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GUIDANCE MEMORANDUM[1]

TO: Gas and Oil Operators in Virginia

FROM: Rick Cooper, Director
Department of Mines, Minerals and Energy (DMME), Division of Gas and Oil

DATE: December 28, 2016

SUBJECT: Acceptable forms of alternative documentation that may be accepted in lieu of a cement bond log for the water protection string

Introduction

On November 28, 2016, DMME published the final updates of its Gas and Oil Regulation (4VAC25-150 et seq.) in Volume 33, Number 7 of the *Virginia Register of Regulations*. 4VAC25-150-280(C) contains the following requirement:

Each permittee completing a well shall complete a cement bond log for the water protection string. Permittees may petition the director to submit alternative documentation that demonstrates effective bond between the casing and the formation.

This requirement helps to ensure well integrity and the protection of groundwater resources. However, mechanisms other than a cement bond log exist that can demonstrate effective bond between the casing and the formation. The purpose of this document is to establish those acceptable forms of alternative documentation. The regulations take effect December 28, 2016.

Requirements

Effective as of the date of this memorandum, permit applicants shall specify in their application which alternative they anticipate using.

[1] This memorandum is to be considered a guideline issued under the authority of § 45.1-361.27(E)(5) which reads: "The Director shall also have the authority to prescribe the nature of and form for the presentation of any information and documentation required by any provision of this article or regulation adopted thereunder."

The following forms of alternative documentation may be submitted with the drilling report required in 4VAC25-150-360(A), subject to the approval of the director.

- A rate density or cement summary chart. These charts typically document the amount, type, weight of cement used to encase the well and the rate and amount of cement that flows back to the surface.
- An affidavit. The operator can submit an affidavit(s) signed by two authorized representatives[2] that documents visual observation of cement returned or circulated to the surface.
    - For wells not drilled through mine voids, the affidavit(s) should also include cement mixture, type, weight, rate and amount that circulated to the surface. If cement does not return to the surface, the affidavit should describe every reasonable effort made to fill the annular space by introducing cement from the surface.
    - For wells drilled through mine voids, the affidavit(s) should describe every reasonable attempt made to fill up the annular space from the top of the void to the surface. The basket location, if applicable, shall be included. Alternatively, the affidavit(s) can describe the process by which the well was cemented at least 50 feet into the next higher string or strings of casing that are cemented to the surface. Existing regulations[3] require this alternative to be verified by a cement top log.
- In the event rate density charts are not available due to equipment failure, a general volumetric certification may be provided. The operator would utilize mud scales and report slurry density and cement details described above.
- If the operator wishes to submit alternative documentation not described above, such request should also be made as part of the permit application and would be reviewed as part of that process.

Questions concerning this document can be directed to Rick Cooper at 276-415-9700.

[2] For purposes of this memorandum, one of the two authorized representatives may be a representative of an on-site servicing company.
[3] See 4VAC25-150-530(E)(1) and 4VAC25-150-610(E)(1).