



COLORADO

Oil & Gas Conservation Commission

Department of Natural Resources

1120 Lincoln Street, Suite 801
Denver, CO 80203

December 22, 2015

Curtis Rueter, Environmental Manager
Noble Energy, Inc.
1625 Broadway, Suite 2200
Denver, CO 80202

RE: Request for Form 27 Site Investigation and Remediation Workplan
Sand Creek Monitoring Well (Facility ID#754506)
SE SE Section 23 Township 6 North Range 65 West, Weld County

Dear Mr. Rueter,

The Colorado Oil and Gas Conservation Commission (COGCC) was recently notified by Colorado Water Watch (CWW) that a water sample collected from the Sand Creek Monitoring Well (assigned COGCC Sample Facility ID #754506) located in the southeast quarter, southeast quarter of Section 23 Township 6 North, Range 65 West contained dissolved gases including methane. On December 11, 2015, COGCC and CWW collected additional water samples from the Sand Creek Monitoring Well and had the samples analyzed for dissolved gases and stable isotope analysis of the gas. The analytical results confirm that thermogenic gas is present in the monitoring well. COGCC's initial investigation reveals that Noble Energy, Inc. is the only Operator with active operations within a three-quarter (3/4) mile radius of the Sand Creek Monitoring Well. Therefore, COGCC requests Noble Energy, Inc. to submit a Form 27 Site Investigation and Remediation Workplan in accordance with Rule 909.a. to investigate the source of the thermogenic methane and to assess the risk to existing water wells in the area. The Form 27 Workplan should be submitted by January 8, 2015 and contain the following elements:

- Evaluate surrounding water wells known to the Operator and/or registered with the Division of Water Resources for the potential to be impacted and the possibility of sampling.
- Investigate the Sand Creek Monitoring Well with a downhole camera to determine whether free gas is entering the borehole and from what zone the gas might be entering the borehole.
- If warranted based on the results of the downhole camera survey, plug and abandon the Sand Creek Monitoring Well in accordance with Division of Water Resources Water Well Construction Rules and replace the monitoring well with

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Commissioners: Thomas L. Compton - Chairman, Richard Alward, John H. Benton, DeAnn Craig,
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John W. Hickenlooper, Governor | Mike King, Executive Director, DNR | Matthew J. Lepore, Director



a nested well or two separate offset wells. One well should be screened in the Fox Hills Formation and the other well should be screened in the previously identified water bearing zone above the Fox Hills Formation.

- Evaluate the geophysical log of the monitoring well, surrounding production wells, and evaluate other available geologic information to create a structure map of the Fox Hills Formation to aid in evaluating potential methane migration route(s).
- Evaluate surrounding oil and gas wells (including plugged and abandoned) within a three-quarter (3/4) mile radius as potential sources of gas. Review wells for adequate surface casing coverage, pressure or production anomaly, identify wells for gas sampling. Work with COGCC Engineering to determine the need for bradenhead testing, Mechanical Integrity Testing, and any additional sampling or repair of production wells.
- Propose an estimated timeframe for completing the above activities.

Please contact me at 970-461-2970 or Greg Deranleau, COGCC Environmental Manager at 303-894-2100 ext. 5153, if you have any questions regarding this request.

Sincerely,



Richard R. Allison, P.G.
Environmental Protection Specialist, Northeast Colorado

- c. Greg Deranleau, COGCC Environmental Manager
Matthew J. Lepore, COGCC Director