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Dear Operator,

Recently, several domestic water wells within the Ignacio-Blanco Field have been tested positive for methane contamination. The source and degree of contamination is not absolutely known. Public concern over this phenomena has prompted Federal, State, local governments and industry groups to address this problem. During this review, the San Juan Resource Area required site specific bradenhead testing on all wells directly offsetting active coal bed methane development. This type of selective testing has proven to be beneficial in assessing wellbore mechanical integrity. These procedures were developed through the efforts of the San Juan Basin Oil and Gas Coordination Committee. On December 31, 1990, the Colorado Oil and Gas Commission promulgated similar rules which require annual bradenhead testing on all State and fee wells within the Ignacio-Blanco Field.

This NTL should prevent and mitigate potential impacts to groundwater resources within the Ignacio-Blanco Field, promote consistency of operations within the field and maintain consistency between Federal and State agencies. Inquiries related to this NTL should be directed to the San Juan Resource Area, 701 Camino del Rio, Durango, CO 81301 or telephone 303-247-4082.

Enclosure

cc: ✓ CSO (CO-922)
BIA - Ignacio
Southern Ute Tribe
San Juan National Forest



United States Department of the Interior

BUREAU OF LAND MANAGEMENT
San Juan Resource Area Office
701 Camino Del Rio
Durango, Colorado 81301

IN REPLY REFER TO:

Notice to Lessees (NTL) and Operators of Federal and Indian Oil and Gas Leases within the Ignacio-Blanco Field NTL MDO-91-1, Change 1

April 15, 1998

This change notice is issued pursuant to the authority delegated to the Authorized Officer (AO) under 43 CFR 3161.2 and 43 CFR 3164.2 to implement oil and gas operating regulations pursuant to 43 CFR 3160 and the terms, conditions, and attached stipulations of the Federal and Indian oil and gas leases. In accordance with the regulatory guidelines referenced above, lessees and operators shall conduct operations in a manner which protects the health, safety, and welfare of the public in addition to protecting natural resources and the environment. Operations shall also be conducted in a manner which results in maximum economic recovery of the oil and gas resources with a minimum amount of waste.

I. Background

On July 23, 1991, the Bureau of Land Management (BLM) issued NTL-MDO-91-1 (Bradenhead Testing). That notice was issued in response to evidence of methane contamination in groundwater as documented in water quality analyses of domestic water wells. Since 1991, the BLM has aggressively implemented the terms and conditions of NTL MDO-91-1. The Colorado Oil and Gas Conservation Commission (COGCC) has also implemented and enforced similar requirements for gas wells on state and fee lands.

As a result, the extent and magnitude of gas wells exhibiting mechanical integrity problems identifiable by this process has been ascertained. Concurrent with the bradenhead testing effort, water well testing has been conducted to identify the presence of entrained methane contamination. These combined efforts have helped the BLM delineate "Critical Areas" where methane contaminated water wells exist.

Bradenhead testing has helped the BLM and the COGCC identify gas wells requiring remediation. Well remediation efforts have reduced the potential for contamination of shallow groundwater aquifers and losses of hydrocarbon resources associated with natural gas production. The overall number of gas wells

exhibiting bradenhead pressure above the established threshold of 25 psig (2 psig in the Critical areas) have been significantly reduced.

Test data suggests that a less frequent level of monitoring can be implemented while providing an effective level of control to assess potential changes in wellbore integrity. On the basis of seven years of bradenhead testing, the BLM has determined that methane contamination and loss of the hydrocarbon resource is more likely to occur at older conventional gas wells than in newer Fruitland Formation coal gas wells. This fact is a function of improved primary cementing requirements including circulation of cement through well-bore annuli from the producing horizon to the surface, thereby maximizing the potential for zonal isolation between the gas producing horizon and shallow aquifers.

II. Definitions

As used in this notice, terms are defined as follows:

- A. "Authorized officer" (AO)- shall mean the San Juan Resource Area Manager.
- B. "Conventional Well" - A well completed in any sandstone reservoir namely the sands of the Dakota, Mesaverde, and Pictured Cliff Formations.
- C. "Fruitland Formation Coal Gas Well" - A well completed in the coal seams of the Fruitland Formation.
- D. "Critical Area" - Areas around domestic water wells which exhibit greater than 1 mg/L entrained methane (See attached map)

III. Requirements

This NTL modifies NTL MDO-91-1, by revising both the frequency of required bradenhead testing and adding new gas analysis requirements based on pressure, volume, and well location. Requirements are applicable only to the Ignacio-Blanco Field in Southwest Colorado and are as follows:

- 1) Annual bradenhead testing requirements, in accordance with NTL MDO-91-1, for all conventional gas wells and all conventional gas wells recompleted as Fruitland Formation coal gas wells.
- 2) Biennial bradenhead testing will now be required on Fruitland Formation Coal Gas Wells completed in the Fruitland Coal prior to 1998.

Biennial testing will be required on odd numbered years, beginning in 1999, (eg., gas wells meeting the above criteria for biennial testing will not need to be tested in 1998). Fruitland Formation Coal Gas wells drilled in 1998 and beyond will have no history of bradenhead testing. Therefore, these gas wells will be required to have an initial test conducted upon completion followed with biennial testing thereafter.

- 3) All gas wells having approved Notices of Intent to remediate excessive bradenhead pressure by implementing bradenhead venting and/or wellbore/well head repairs are governed by their attached Conditions of Approval which overrule items #1 and #2 above.
- 4) Bradenhead gas analysis is required only when gas volume is sufficient to allow a minimum of 10 purges of the collection cylinder, and when pressures exceed 2 psig in designated critical areas or 25 psig outside of designated critical areas.

In 1998, intermediate casing gas samples will be required only when specifically requested by the BLM.

IV. Conformance with NTL MDO-91-1

NTL MDO-91-1, remains in full force and effect except where modified by this NTL.

4-14-98

Date

Kent Hothe

Acting

Area Manager, San Juan Resource Area