



United States Department of the Interior



BUREAU OF LAND MANAGEMENT

Montana State Office
222 North 32nd Street
P.O. Box 36800

Billings, Montana 59107-6800

IN REPLY TO:

SDR-922-93-07
NDM 2284 ACQ
NDM 1484 ACQ
3165.3 (922.5)

July 12, 1993

CERTIFIED - RETURN RECEIPT REQUESTED

DECISION

Mr. Thomas M. Ellzey)
Enterprise Energy, Inc.)
P.O. Box 208) SDR No. 922-93-07
Huntsville, Texas 77342-0208)

AFFIRMED AS MODIFIED

Enterprise Energy, Inc. (EEI) requested a State Director Review (SDR) (Enclosure 1) on June 20, 1993, regarding the additional plugging requirements attached as Conditions of Approval to the Notices of Intent To Abandon (NIAs) for the following three wells:

| | | | |
|---------------------|--------|-----------------------------|----------------|
| Shell-Federal 24-12 | SW¼NW¼ | Sec. 24, T 148 N., R. 105 W | (NDM 2284 ACQ) |
| Federal 7-33 | NW¼SE¼ | Sec. 7, T 147 N., R. 104 W | (NDM 1484 ACQ) |
| Federal 23-43 | NW¼SW¼ | Sec. 23, T 148 N., R. 105 W | (NDM 1484 ACQ) |

The NIAs submitted by EEI on these wells were filed with the Dickinson District Office (DDO) on May 24, 1993, and approved on May 26, 1993. The June 20, 1993, SDR request stated supporting arguments would be provided to the Montana State Office (MSO). On June 28, 1993 (Enclosure 2), the MSO received a telefaxed copy of EEI's supporting arguments. The complete request for an SDR was timely received on June 28, 1993.

EEI has asked for relief on the two requirements attached to the NIAs as Conditions of Approval for the previous referenced wells. The following are the two requirements each followed by a discussion and final determination:

1. Leave a minimum of 25 sacks of cement on top of the retainer being placed above the perforations in the producing zone;

Onshore Oil and Gas Order No. 2 (OO#2), published November 18, 1988, page 46810, Section G., "Drilling Abandonment Requirements," under No. 2, "Cased Hole," specifies that when a bridge plug is used, it is capped with 50 feet of

cement, unless a bailer is used, then 35 feet of cement shall be sufficient. Even though these regulations do not address a retainer, the volume of cement being placed on a bridge plug is identical to that of a retainer. When 25 sacks of cement are placed on a retainer using 5½-inch-17#/foot production casing, it fills a volume of 220 feet, where 10 sacks as originally proposed by EEI, fills a volume of approximately 88 feet. The 25 sack requirement on top of the retainer is not justified and exceeds the requirement of 50 feet of cement as specified in OO#2.

Therefore, we hereby modify the DDO's Conditions of Approval attached to the NIAs on the previously referenced wells, and modify the requirement for the amount of cement being placed on the retainer(s) from 25 sacks to 10 sacks, as originally proposed by EEI. However, the amount of cement placed on the retainer must be at least 50 feet.

2. Instead of the proposed 20 sack balance plug from 5400-5500, the DDO required that EEI perforate the 5½-inch casing at 4900 feet and set a retainer at 50-100 feet above the perforations. A sufficient volume of cement would be squeezed to place 150 feet of cement in the annulus and a minimum of 25 sacks of cement would be placed on top of the retainer.

The DDO required that EEI perforate, set a retainer, and squeeze cement at the base of the Mowry shale. This requirement was due to the fact that the top of the cement did not extend into the Mowry shale and isolate the Dakota Group. The Dakota Group consists of the Mowry Shale, Newcastle sandstone, Skull Creek Shale, and Inyan Kara sandstone. The Newcastle and Inyan Kara sandstone of the Dakota Group have been approved as saltwater disposal zones. Currently, saltwater is being disposed of into the Inyan Kara sandstone. No disposal of saltwater has occurred into the Newcastle sandstone at this time; however, the sandstone has been approved by the EPA as a disposal zone.

With the difference in hydrostatic pressure from the Dakota Group to shallower formations, there is a potential for fluids within the Newcastle and Inyan Kara to migrate to shallower zones. We agree with EEI that perforating the casing, setting a retainer, and squeezing cement at the base of the Mowry shale will increase the cost of plugging the wells; however, if the upper zones become contaminated in the future from fluids migrating from the Dakota Group, the costs for re-entering and re-plugging the wells will far exceed the costs of perforating the casing, setting a retainer, and squeezing cement at the base of the Mowry shale. Also, because of the high salinity waters in the Dakota Group, it is critical to ensure that these fluids do not migrate uphole and contaminate other shallower zones; therefore, they must be contained within the Dakota Group. An additional concern is that once the well is permanently plugged and abandoned, it is not possible to monitor whether migration of fluids from the Dakota Group to shallower formations has occurred. The DDO's decision requiring EEI to perforate the casing, setting a retainer, and squeezing cement at the base of the Mowry shale is reasonable. Also, your original proposal of placing a 20-sack-balance plug within the production casing will not prevent migration of fluids outside of the production casing.

Therefore, we hereby affirm the Conditions of Approval attached to the NIAs on the previously referenced wells regarding the requirement to perforate, setting of a retainer, and squeezing cement at the base of the Mowry shale. Also, as we have previously stated, the requirement for the amount of cement being placed on the retainer is modified from 25 sacks to 10 sacks. However, the amount of cement placed on the retainer must be at least 50 feet.

These decisions may be appealed to the Board of Land Appeals, Office of the Secretary, in accordance with 43 CFR 3165.4, 4.411, 4.413 and Form 1842-1 (Enclosure 3). If an appeal is taken, a Notice of Appeal must be filed in the MSO at the above address within 30 days from receipt of this decision. A copy of the Notice of Appeal, and any statement of reasons, written arguments, or briefs must also be served on the Office of the Solicitor at the address shown on Form 1842-1. It is also requested that a copy of any statement of reasons, written arguments, or briefs be sent to this office. The appellant has the burden of showing that the decision appealed from is in error.



Thomas P. Lonnie
Deputy State Director
Division of Mineral Resources

3 Enclosures

- 1-Enterprise SDR, dated June 20, 1993 (1 pp)
- 2-Enterprise Supporting Documentation, dated June 26, 1993 (5 pp)
- 3-43 CFR 3165.4, 4.411, 4.413, and Form 1842-1 (4 pp)

cc:
DDO