

STATE OF MICHIGAN
DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENT

ORDER OF THE SUPERVISOR OF WELLS

IN THE MATTER OF

THE PETITION OF PETRO VEST, INC. FOR A SPECIAL)
SPACING ORDER FROM THE SUPERVISOR OF WELLS)
APPROVING AN EXCEPTION TO THE BOTTOM HOLE) ORDER NO. 10-2010
LOCATION REQUIREMENTS ESTABLISHED BY)
R 324.301(b)(ii) FOR DUNDEE LIMESTONE FORMATION)
WELLS IN PARTS OF ISABELLA COUNTY, MICHIGAN.)

OPINION AND ORDER

This case involves the Petition of Petro Vest, Inc. (Petitioner). The Petitioner proposes to drill and complete oil and gas development wells in the vicinity of the Isabella 35 Field, in the stratigraphic interval known as the Dundee Limestone Formation, with a completion interval location anywhere within the 40-acre drilling units, not less than 330 feet from the drilling unit boundary. Without a special spacing order, the bottom hole location or completion interval of development wells would have to be located in the same relative position in each drilling unit as that of a discovery well. The area sought to be spaced is in Isabella County, Michigan and consists of the following tracts of land:

Isabella Township, T15N; R4W

Section 15: S 1/2

Section 21: SE 1/4; SE 1/4 of SW 1/4 and S 1/2 of NE 1/4

Section 22: all.

Section 23: W 1/2 of W 1/2; SE 1/4 of SW 1/4.

Section 26: S 1/2 of NW 1/4; NE 1/4 of NW 1/4

Section 27: NW 1/4; E 1/2 of SW 1/4; N 1/2 of SE 1/4

Section 35: W 1/2 of E 1/2

Union Township, T14N, R4W

Section 2: NW 1/4 of SW 1/4; SE 1/4 of NW 1/4; S 1/2 of NE 1/4; N 1/2 of SE 1/4.

Jurisdiction

The development of oil and gas in this state is regulated under Part 615, Supervisor of Wells (Supervisor), of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended. MCL 324.61501 *et seq*. The purpose of Part 615 is to ensure the orderly development

and production of the oil and gas resources of this state. MCL 324.61502. To that end, the Supervisor may establish drilling units and well spacing MCL 324.61513(2) and (5). The spacing and location of Dundee Limestone Formation wells in Isabella County is subject to the general spacing rule. 1996 MR 9, R 324.301. Under that rule, the permitting of a bottom hole location that differs from that of the discovery well can only be approved after an evidentiary hearing. 1996 MR 9, R 324.302.

The evidentiary hearing is governed by the applicable provisions of the Administrative Procedures Act, 1969 PA 306, as amended, MCL 24.201 *et seq.* 1996 MR 9, R 324.1203. The evidentiary hearing in this matter was held June 9, 2010.

One answer was filed, by Summit Petroleum Corporation. However, on June 7, 2010, Summit withdrew its answer and withdrew its status as a party in this proceeding.

FINDINGS OF FACT

Petitioner specifically requests that the Supervisor issue a special spacing order that authorizes a bottom hole location anywhere within the 40-acre drilling units for wells drilled to the Dundee Limestone Formation in the vicinity of the Isabella 35 Field, provided the completion interval is not less than 330 feet from the drilling unit boundary. The Petitioner asked for such a spacing system only as to its acreage in and/or near the Isabella 35 Field, and certain nearby and adjoining acreage necessary to block together acreage into tracts consisting of at least 40 acres.

The Administrative Law Judge determined the Notice of Hearing was properly served and published. The Supervisor designated the hearing to be an evidentiary hearing pursuant to R 324.1205(1)(b) and directed substantive evidence be presented in the form of oral testimony.

In support of its case, the Petitioner offered the testimony of Mr. Timothy Hauck, Landman; Mr. Bryan L. Roth, Geologist and Geophysicist; and Mr. Timothy J. Brock, P. E., Reservoir Engineer. Messrs. Roth and Brock were recognized as experts in the areas of their expertise.

Mr. Hauck testified the legal description of the geographic area proposed to be spaced is as listed above on page one of this Order and in Exhibit 2. He stated Petitioner has a pending drilling permit application for the proposed Swindlehurst 1-27 well (Exhibit 3). The proposed well is not on pattern with the discovery well, the Gepford 1-35 well (Permit No. 59941), which is located within the northwest 10 acres of its 40-acre drilling unit. Mr. Hauck explained Petitioner's proposed well spacing plan would help it avoid interference with surface features and still drill economical wells.

Mr. Roth testified that, based on his seismic interpretations, the Isabella 35 Field is an anticlinal structure with the existing Gepford 1-35 and 2-35 (Permit No. 60030) on the crest of the

structure. In addition to its structural component, the field also has a stratigraphic component. Mr. Roth's interpretation of seismic over the field is that the reservoir conditions vary from tight limestone to dolomitized areas which represent reservoir rock. The dolomite appears to be present when faulting or fracturing has occurred. The seismic signature across the Dundee reservoir varies, and Mr. Roth attributes the differences to the likely presence or absence of hydrothermal dolomite. He picked the location for Petitioner's proposed Swindlehurst 1-27 well (Exhibit 3) and a second proposed well, the Swindlehurst 1-26, based on his seismic interpretation.

In Mr. Roth's opinion, Dundee Limestone Formation structures similar in nature to the Isabella 35 Field may exist throughout the proposed spaced area, and the locations of completion intervals will be selected based on seismic interpretation. He testified that locating wells consistent with the Rule 301(b)(ii) requirements, rather than based on seismic interpretation, will increase the likelihood of dry holes or marginal wells and will cause waste or the potential for waste. Mr. Roth recommended the formations to be spaced from the base of the Bell Shale to the top of the Detroit River Group. The seismic exhibits sponsored by Mr. Roth were retained by Petitioner.

Mr. Brock interpreted the Dundee Limestone Formation as a carbonate formation that contains oil and gas where it has been dolomitized and has structure to form a trap. In his opinion, the Isabella 35 Field has a water drive. He reviewed production and bottom hole pressure data for the reservoir (Exhibit 12). The Gepford 1-35 well went on line in early 2010 and had produced a total of 36,000 barrels of oil through April 13, 2010. The Gepford 2-35 had produced 15,500 barrels of oil through May 13, 2010. It is Mr. Brock's opinion that Petitioner's proposal should be adopted because a 10-acre drilling "window" is preferable to a 5/8ths-acre drilling window under Rule 301(b)(ii) (Exhibit 9). A 10-acre drilling window can accommodate a horizontal well or a directional redrill of a vertical well, whereas the Rule 301(b)(ii) well location rule cannot. Mr. Brock testified that, based on the reservoir characteristics, having two wells on adjoining drilling units no closer than 660 feet apart will not result in harmful interference or violate correlative rights. He agreed with Mr. Roth that the stratigraphic component of the reservoir is important to consider, but he also believes that the owners within a 40-acre drilling unit should be able to drill on the structurally highest location within the drilling unit not less than 330 feet from the unit line. This will enable an owner to recover that part of the hydrocarbons that underlies its land. Abiding by a rigid well spacing pattern will establish many drilling locations in the field at structurally low points on their unit, or actually off the structure (Exhibit 11). Drilling at those locations will block an owner's opportunity to recover its fair and equitable share of the hydrocarbons in the reservoir. Mr. Brock testified that drilling at such locations has the potential to cause waste and violate correlative rights.

I find as a matter of fact that a location of the completion interval anywhere within a 40-acre drilling unit for Dundee Limestone Formation wells, no less than 330 feet from the drilling unit boundary, allows for reasonable development, avoids waste and the potential for waste, and protects correlative rights.

CONCLUSIONS OF LAW

Based on the findings of fact, I conclude, as a matter of law.

1. An exception to the bottom hole location requirements established by R 324.301 is appropriate for the area proposed to be spaced. Exceptions to this rule may be granted by the Supervisor after notice and hearing.

2. The Supervisor has jurisdiction over the subject matter and the persons interested therein.

3. Due notice of the time, place, and purpose of the hearing was given as required by law and all interested persons were afforded an opportunity to be heard. 1996 MR 9, R 324.1204.

DETERMINATION AND ORDER

Based on the Findings of Fact and Conclusions of Law, the Supervisor determines that a special spacing order is necessary for designated acreage in and/or near the Isabella 35 Field covered by this proceeding to prevent waste and protect correlative rights.

NOW, THEREFORE, IT IS ORDERED:

1. The following portions of the Isabella 35 Dundee Limestone Formation Pool is subject to the provisions of this Order:

Isabella Township, T15N; R4W

Section 15: S 1/2

Section 21: SE 1/4; SE 1/4 of SW 1/4 and S 1/2 of NE 1/4

Section 22: all.

Section 23: W 1/2 of W 1/2; SE 1/4 of SW 1/4.

Section 26: S 1/2 of NW 1/4; NE 1/4 of NW 1/4.

Section 27: NW 1/4; E 1/2 of SW 1/4; N 1/2 of SE 1/4.

Section 35: W 1/2 of E 1/2.

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Section 2: NW 1/4 of SW 1/4; SE 1/4 of NW 1/4; S 1/2 of NE 1/4; N 1/2 of SE 1/4.

2. The spaced formation is described as the Dundee Limestone Formation. The Dundee Limestone Formation can also be described as those formations from the base of the Bell Shale to the top of the Detroit River Group.

3. A drilling unit shall continue to consist of a quarter-quarter section of land containing 40 acres, more or less, pursuant to R 324.301(1)(a)

4. A well may be drilled anywhere within a drilling unit in the spaced area so long as the completed interval in the well is at least 330 feet from the unit boundary.

5. The Supervisor retains jurisdiction in this matter.

4. This Order shall be effective immediately.

DATED: *Aug. 10, 2010*



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