

STATE OF MICHIGAN  
DEPARTMENT OF ENVIRONMENTAL QUALITY

ORDER OF THE SUPERVISOR OF WELLS

IN THE MATTER OF:

THE PETITIONS OF WARD LAKE ENERGY, FOR AN )  
ORDER FROM THE SUPERVISOR OF WELLS ) CAUSE NO. 24-2008  
ESTABLISHING TWO 40-ACRE DRILLING UNITS AS ) CAUSE NO. 25-2008  
EXCEPTIONS TO THE SPACING REQUIREMENTS OF )  
ORDER NO. (A) 14-9-94. )

OPINION AND ORDER

This case involves two Petitions of Ward Lake Energy (Petitioner). The Petitioner proposes to drill and complete two wells for oil and gas exploration (the Kitchen D2-3 (Cause 24-2008) well and the Kitchen D3-4 (Cause 25-2008) well) within 40-acre drilling units in the stratigraphic interval known as the Antrim Shale Formation. Under Order No. (A) 14-9-94, as amended, the drilling unit size for an Antrim Shale Formation well is 80 acres. Petitioner seeks an exception to Order No. (A) 14-9-94 for 40-acre drilling units for the Kitchen D2-3 and Kitchen D3-4 wells, located in Star Township, Antrim County, Michigan. The two Petitions have been consolidated for administrative efficiency.

JURISDICTION

The development of oil and gas in this State is regulated under Part 615, Supervisor of Wells, 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 in this State. MCL 324.61502. To that end, the Supervisor may establish drilling units. MCL 324.61513(2). The spacing of wells completed in the Antrim Shale Formation in Star Township, Antrim County is subject to Order (A) 14-9-94. Exceptions to the spacing requirements of Order (A) 14-9-94 can only be effectuated after an evidentiary hearing. The evidentiary hearing is governed by the applicable provisions of the Administrative Procedures Act, 1969 PA 306, as amended, MCL 24.201 *et seq.* See 1996 MR 9, 324.1203. The evidentiary hearing in these matters was held on January 27, 2009.

### FINDINGS OF FACT

Petitioner specifically requests that the Supervisor issue an Order that creates 40-acre Antrim Shale Formation drilling units for the proposed Kitchen D2-3 well, consisting of the SE 1/4 of SW 1/4 of Section 3; and the Kitchen D3-4 well, consisting of the SW 1/4 of the SE 1/4 of Section 4, T30N, R5W, Star Township, Antrim County, Michigan.

The Administrative Law Judge determined that the Notice of Hearing was properly served and published. Timely answers to the Petition were filed by BreitBurn Operating L.P. and Terra Energy LTD (BreitBurn/Terra) and White Pine Enterprises, LLC (White Pine). The Supervisor designated the hearing to be an evidentiary hearing pursuant to R 324 1205(1)(b) and directed evidence be presented in the form of oral testimony.

In support of its case, the Petitioner offered the testimony of Mr. Barry K. Lay, Vice President, Eastern Division, EnerVest Operating, LLC; and Jennifer Hendrickson, Michigan District Landman, EnerVest Operating, LLC. Mr. Lay was recognized as an expert in the field of petroleum engineering. White Pine offered the testimony of Mr. Robert W. Kitchen, Manager, White Pine Enterprises, LLC. BreitBurn/Terra offered the testimony of Nelson R. Fairchild, Eastern Regional Manager, BreitBurn Management, LLC. Mr. Fairchild was recognized as an expert in the field of petroleum and natural gas engineering.

### DRILLING UNIT

The spacing of wells targeting the Antrim Shale Formation is governed by Order No (A) 14-9-94, as amended. This Order establishes drilling units of 80 acres, more or less, consisting of two contiguous governmental surveyed quarter-quarter sections of land with one common boundary of approximately 1,320 feet, with allowances being made for the differences in the size and shape of sections.

Both Mr. Lay and Mr. Fairchild testified that there is very good fracturing in the area around the two proposed wells, which indicates the proposed drilling units would likely be productive. However, the two witnesses disagree as to the most efficient and economical way to produce the gas from the proposed units. Both witnesses did agree that the only way to really determine the density and/or orientation of fractures in the area is to drill a well.

Mr. Lay testified the two proposed 40-acre drilling units are surrounded by either existing drilling units or Uniform Spacing Plans (USPs) and are therefore stranded tracts. It is his ~~opinion that due to the close proximity of some wells to the borders of these tracts, there has~~ probably been drainage from the tracts, although without drilling a well, there is no way to

quantify what that drainage is. Mr. Lay stated the proposed wells should be drilled on 40-acre units to balance this probable drainage as well as to maximize the recovery of gas within the units. He testified that, based on the performance of Petitioner's D3-33 and D1-33 wells, he believes approximately 300 million cubic feet of gas would be left in the ground if the two proposed wells are not drilled. Mr. Lay testified that Petitioner plans on locating the wells and pipeline to have minimal impact to the surface owner and to prevent surface waste.

Mr. Lay testified the fracture portion of the gas has been depleted, leaving the area of the proposed 40-acre drilling units in the desorption phase and not able to sufficiently drain the reservoir without the additional wells. In Mr. Fairchild's opinion, sub-80-acre spacing is not warranted due to the Antrim Shale Formation in the area of the proposed 40-acre drilling units having above average permeability.

Mr. Fairchild testified there are currently eight producing wells in Section 3, T30N, R5W, Antrim County, a fractional 546-acre section, resulting in a well density of 68.29 acres per well. He stated Section 4, T30N, R5W, Antrim County, is also a fractional section, at 562.94 acres. There are currently 9 producing wells in Section 4, resulting in a well density of 60.7 acres per well. It is Mr. Fairchild's opinion that the wells currently producing in Sections 3 and 4 are sufficient to adequately and efficiently drain the area. In addition, Mr. Fairchild questioned whether the two proposed wells would be economic as gas production rates go down due to partial depletion occurring in the area.

Mr. Fairchild testified that BreitBurn/Terra's wells adjoining Petitioner's proposed wells were drilled prior to the development of Petitioner's wells in the area. Therefore, in his opinion, if Petitioner wanted to prevent drainage of its leased acreage, it could have either incorporated the 40-acre drilling units with other leased land to create 80-acre drilling units, or it could have located its existing wells closer to BreitBurn/Terra's properties.

While it is BreitBurn/Terra's opinion the Petition should be denied, Mr. Fairchild stated, should the Supervisor approve Petitioner's two 40-acre drilling units, MCL 61513(4) requires that production should be limited to a one-half allowable. Mr. Fairchild's recommendation was to use one-half of the average daily production for Petitioner's wells in the area as shown in Exhibit P-J.

Part 615 provides that a drilling unit is the maximum area that may be efficiently and economically drained by one well. MCL 324.61513(2). In Order No. (A) 14-9-94, as amended, ~~the Supervisor found that 40-acre drilling units cause waste and the drilling of unnecessary wells and that 80-acre spacing for Antrim Shale Formation wells would minimize both surface~~

and underground waste. However, this Order also allows for exceptions to the spacing and location requirements after notice and hearing. I find that Petitioner has not presented compelling evidence to show that the two proposed 40-acre drilling units are necessary to prevent waste or that 40 acres is the maximum area that can be efficiently and economically drained by one well in this area.

Part 615 states: "The owner of any tract that is smaller than the drilling unit established for the field shall not be deprived of the right to drill on and produce from that tract, if the drilling and production can be done without waste." MCL 324.61513(4). The two proposed 40-acre drilling units are not truly stranded tracts as Petitioner argues, but they are each part of a larger tract of land leased by Petitioner from the same mineral owners. Other options were and are available to Petitioner to protect its correlative rights and ensure adequate drainage of its acreage while maintaining the established well density. The proposed drilling units were only left undrilled by Petitioner's own development plan. I find that since Petitioner has other options available to it to produce from those tracts, the proposed Kitchen D2-3 and Kitchen D3-4 wells are unnecessary wells and as such will create waste.

### **CONCLUSIONS OF LAW**

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

1. To prevent the drilling of unnecessary wells, the supervisor may establish a drilling unit for each pool. A drilling unit is the maximum area that may be efficiently and economically drained by one well. MCL 324.61513(2).
2. The drilling unit for Antrim Shale Formation wells in Antrim County is 80 acres per well as established by Order No. (A) 14-9-94.
3. The Kitchen D2-3 and Kitchen D3-4 wells are unnecessary and would cause waste. MCL 324.61513(3).
4. The Supervisor has jurisdiction over the subject matter and the persons interested therein.

5. 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 AACRS, R 324.1204.

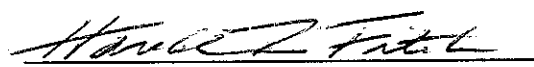
**DETERMINATION AND ORDER**

Based on the Findings of Fact and the Conclusions of Law, the Supervisor determines that drilling the Kitchen D2-3 and Kitchen D3-4 wells is not necessary to protect correlative rights and prevent waste.

**NOW, THEREFORE, IT IS ORDERED:**

1. Petitioner's request for an exception to Order No. (A) 14-9-94 for a 40-acre drilling unit for the Kitchen D2-3 well is denied.
2. Petitioner's request for an exception to Order No. (A) 14-9-94 for a 40-acre drilling unit for the Kitchen D3-4 well is denied.
3. The Supervisor retains jurisdiction in this matter.
4. This Order shall be effective immediately.

DATED: May 29, 2009

  
HAROLD R. FITCH  
ASSISTANT SUPERVISOR OF WELLS  
Office of Geological Survey  
P.O. Box 30256  
Lansing, MI 48909

STATE OF MICHIGAN  
DEPARTMENT OF ENVIRONMENTAL QUALITY  
SUPERVISOR OF WELLS

IN THE MATTER OF

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at a session of the Department of Environmental Quality held  
at Lansing, Michigan on December 15, 2008, Harold R. Fitch,  
Assistant Supervisor of Wells, Presiding

**SECOND ORDER OF ADJOURNMENT**

Ward Lake Energy has filed two Petitions requesting exceptions to the drilling unit size established for Antrim Shale Formation wells by Order No. 14-9-94 for the Kitchen D2-3 and Kitchen D3-4 wells. The proposed wells are located in Star Township, Antrim County, Michigan. The Supervisor of Wells hearing in this matter was scheduled for 9:00 a.m. on November 13, 2008.

Answers to the Petitions were filed on behalf of BreitBurn Operating L.P. (BreitBurn) and Terra Energy LTD (Terra) and White Pine Enterprises, LLC. A Motion To Adjourn was filed by Breitburn and Terra. Upon agreement of all parties, the hearing was adjourned to December 15, 2008.

On December 12, 2008, Petitioner filed a letter requesting a second adjournment, stating that after discussion with all parties to this matter, no parties object to an adjournment.

**NOW THEREFORE, IT IS ORDERED:**

1. The consolidated hearing on Cause Nos. 24-2008 and 25-2008, is hereby adjourned and rescheduled for January 27, 2009, at 9:00 a.m. in the Stephen Nisbet Hearing Room, Atrium Level, South Tower, Constitution Hall, 525 West Allegan Street, Lansing, Michigan.

Dated: Dec. 15, 2008

  
HAROLD R. FITCH  
ASSISTANT SUPERVISOR OF WELLS  
Office of Geological Survey  
P.O. Box 30256-7756  
Lansing, Michigan 48909

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Answers to the Petitions were filed on behalf of BreitBurn Operating L.P. (BreitBurn) and Terra Energy LTD (Terra) and White Pine Enterprises, LLC. A Motion To Adjourn was filed by Breitburn and Terra. The Supervisor of Wells has been informed that all parties have agreed to an adjournment of this matter.

**NOW THEREFORE, IT IS ORDERED:**

1. The consolidated hearing on Cause Nos. 24-2008 and 25-2008, is hereby adjourned and rescheduled for December 15, 2008, at 9:30 a.m. in the Stephen Nisbet Hearing Room, Atrium Level, South Tower, Constitution Hall, 525 West Allegan Street, Lansing, Michigan.
2. Witness lists and exhibits shall be exchanged between the parties and shall be received no later than December 8, 2008.

Dated: Nov. 12, 2008

  
HAROLD R. FITCH  
ASSISTANT SUPERVISOR OF WELLS  
Office of Geological Survey  
P.O. Box 30256-7756  
Lansing, Michigan 48909

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**NOTICE OF HEARING**

Take notice that a consolidated hearing will be held before the Supervisor of Wells (Supervisor) in the city of Lansing, Michigan, on the THIRTEENTH DAY OF NOVEMBER (NOVEMBER 13) 2008, BEGINNING AT 9:00 A.M., AT THE DEPARTMENT OF ENVIRONMENTAL QUALITY STEPHEN NISBET HEARING ROOM, ATRIUM LEVEL, SOUTH TOWER, CONSTITUTION HALL, 525 WEST ALLEGAN STREET, LANSING, MICHIGAN. The hearing will be conducted pursuant to Part 615, Supervisor of Wells, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (NREPA), MCL 324.61501 et seq.; the administrative rules, 1996 AACS, 2001 MR 2, 2002 MR 23, R 324.101 et seq.; and the Administrative Procedures Act, 1969 PA 306, as amended, MCL 24.201 et seq.; MSA 3.560(101) et seq.

The hearing is for the purpose of receiving testimony and evidence pertaining to the need or desirability of issuing an order in the matter of the petitions of Ward Lake Energy (Petitioner).

Petitioner seeks an order of the Supervisor as an exception to Order No. (A) 14-9-94, authorizing two 40-acre drilling units for the Kitchen D2-3 and Kitchen D3-4 Antrim Shale Formation wells. The proposed Kitchen D2-3 drilling unit consists of the SE 1/4 of SW 1/4 of Section 3, T30N, R5W, Star Township, Antrim County, Michigan. The proposed Kitchen D3-4 drilling unit consists of the SW 1/4 of SE 1/4 of Section 4, T30N, R5W, Star Township, Antrim County, Michigan.


You can obtain a copy of the written petitions by requesting them in writing from Ms. Jennifer Hendrickson, 685 East M-32, P.O. Box 1663, Gaylord, Michigan, 49734, telephone number 989-732-8499.

Take note that if you wish to participate as a party in the hearing by presenting evidence or cross-examining witnesses, you shall prepare and mail or otherwise deliver to the Petitioner and Supervisor, not less than 5 days before the hearing date, an answer to the petition in the manner set forth in R 324.1204(6). Proof of mailing or delivering the answer shall be filed with the Supervisor on or before the date of the hearing. The answer shall state with specificity the interested person's position with

regard to the petition. Failure to prepare and serve an answer in a timely manner shall preclude you from presenting evidence or cross-examining witnesses at the hearing. If an answer to the petition is not filed, the Supervisor may elect to consider the petition and enter an order without oral hearing. Mail the answer to the petition to Ms. Jennifer Hendrickson at the above address, and to the Supervisor in care of the Assistant Supervisor of Wells, Mr. Harold R. Fitch, Office of Geological Survey (OGS), P.O. Box 30256, Lansing, Michigan 48909-7756.

Questions regarding the Notice of Hearing should be directed to Ms. Susan Maul, OGS, Michigan Department of Environmental Quality, P.O. Box 30256, Lansing, Michigan 48909-7756, phone 517-241-1552. Persons with disabilities needing accommodations for effective participation in this hearing should call or write Ms. Maul at least a week in advance of the hearing date to request mobility, visual, hearing, or other assistance.

Dated: *Sept. 30, 2008*

  
HAROLD R. FITCH  
ASSISTANT SUPERVISOR OF WELLS  
Office of Geological Survey  
P O. Box 30256  
Lansing, MI 48909-7756