

BEFORE THE STATE OIL AND GAS BOARD OF MISSISSIPPI

RE: PETITION OF DENBURY ONSHORE, LLC TO  
AMEND THE SPECIAL FIELD RULES FOR THE  
SOSO FIELD, JASPER, JONES, AND SMITH  
COUNTIES, MISSISSIPPI

FILED FOR RECORD

JUN 15 2005

STATE OIL AND GAS BOARD  
WALTER BOONE, SUPERVISOR

DOCKET NO. 73-2005-16

ORDER NO. 149-2005

**ORDER**

THIS CAUSE came to be heard on the Petition of Denbury Onshore, LLC ("Petitioner") requesting the Board to amend the Special Field Rules for the SoSo Field in Jasper, Jones, and Smith Counties, Mississippi; and

WHEREAS, the Board finds that due, proper, and legal notice of the meeting of the Board for the purpose of considering and taking action with respect to such matter was given in the manner required by the rules and regulations of the Board; that due, legal, and sufficient proofs of publication and service are on file with the Board; and that the Board has full jurisdiction of the subject matter to hear and determine same; and

WHEREAS, pursuant to said Notice, a public hearing was held by said Board in the Hearing Room, Suite E, 500 Greymont Avenue, Jackson, Mississippi, commencing on May 18, 2005, at 9:30 o'clock a.m. at which hearing all persons present who desired to be heard on said matter were heard and all testimony and the evidence were duly considered by those present at said meeting; and

WHEREAS, the Board has fully considered said matter and the evidence and recommendations made in said hearing and finds as follows:

1.

Petitioner is the current operator of the Field. Special Field Rules for the Field were last adopted or amended in Docket No. 357-98-16, Order No. 557-98.

2.

The Field contains several unitized pools. The crude oil in those pools is very similar

with the gravity. Petitioner plans to install and undertake a CO<sub>2</sub> tertiary oil recovery program in the Field. The tertiary oil recovery program will require that the crude oil be commingled from the various pools because of the common facility necessary to inject CO<sub>2</sub> into the ground and separate the crude oil, CO<sub>2</sub>, water, and natural gas produced from each formation. Finally, Petitioner will use a central tank battery from which all oil sales will be made.

3.

Petitioner seeks authority to commingle production from all wells at one facility and prorate the production to each well based on individual well tests which will be performed not less than once per month. Further, Petitioner seeks to raise the production allowable for the unitized pools as set forth in Exhibit "A" to the Petition based upon the effect of tertiary oil recovery.

4.

The amendment to the Special Field Rules will promote conservation, protect the equal and correlative rights of all owners in interest, avoid the drilling of unnecessary wells and permit oil and gas to be produced which would not otherwise be recoverable.

**IT IS, THEREFORE, ORDERED AND ADJUDGED** by the State Oil and Gas Board of Mississippi that the Special Field Rules for the SoSo Field shall be and hereby are amended as follows:

**SPECIAL FIELD RULES  
SOSO FIELD  
JASPER, JONES, AND SMITH COUNTIES MISSISSIPPI**

A. The Soso Field, as used herein, is that area in Sections 25, 26, 27, 28, 29, 30, 32, 33, 34, 35 and 36, Township 10 North, Range 13 West, Jasper, Jones and Smith Counties; Sections 19, 20, 21 and 22, Township 10 North, Range 13 West, Smith and Jasper Counties, Sections 30 and 31, Township 10 North, Range 12 West, Jasper and Jones Counties, and Section 24, Township 10 North, Range 14 West, Smith County in the State of Mississippi, including all productive extensions thereof, that is underlain by hydrocarbons and by any one or more of the following pools. (Order No. 82-57)

B. (1) The Stanley Gas Producing Pool, as used herein, shall be construed to

mean those strata of the Eutaw (Eagle-Ford) formation productive of gas from the depths of 6,100 feet subsea to 6,200 feet subsea. (Order No. 82-57).

(2) The Christmas Gas Producing Pool, as used herein, shall be construed to mean those strata of the Eutaw (Eagle-Ford) formation productive of gas from depths of 6,275 feet subsea to 6,450 feet subsea. (Order No. 82-57).

(3) The Zone "A" Oil Sand is defined as those oil bearing sands that are indicated by the electric log of the Soso Fieldwide Unit 28-3 Well No. 1 between the depths of 7,910 feet and 12,272 feet, and those oil-bearing sands which can be correlated with this horizon. This Zone "A" Oil Sand shall include the pools previously defined as B(3) and B(4), B(7) through B(18), B(21), B(27) through B(29) below the Eutaw formation with respect to which the Soso Field Unit has been created by voluntary agreement and Board Order No. 82-57, effective April 17, 1957. (Order No. 108-84).

(4) The Zone "A" Gas Sand is defined as those gas-bearing sands which are indicated by the electric log of the Soso Fieldwide Unit 28-1 Well No. 1 between the depths of 9,704 feet and 9,770 feet, and those gas-bearing sands which can be correlated with this horizon. This Zone "A" Gas Sand shall include the pools previously defined as B(5) and B(6) below the Eutaw formation with respect to which the Soso Field Unit has been created by voluntary agreement and Board Order No. 82-57, effective April 17, 1957. (Order No. 108-84).

(5) The Zone "B" Oil Sand is defined as those oil-bearing sands that are indicated by the electric log of the Soso Fieldwide Unit 28-7 Well No. 1-ZB between the depths of 12,321 feet and 15,256 feet, and those oil-bearing sands which can be correlated with this horizon. This Zone "B" Oil Sand shall include the pools previously defined as B(19) and B(20), B(22) through B(26), B(30) and B(31) below the Eutaw formation with respect to which the Soso Field Unit has been created by voluntary agreement and Board Order No. 82-57, effective April 17, 1957. (Order No. 108-84).

(C) The area defined as lying within the Soso Field consists of regular governmental sections with each one-half section thereof containing approximately 320 acres approximately in the form of a rectangle. The characteristics of the gas pools defined above as B(1) and B(2) are such that one well drilled on each 320 acre unit will efficiently drain and produce the recoverable gas from such unit in said pool or pools without avoidable waste. The pools hereinabove defined as B(3) through B(5) are oil and gas pools found at depths below the Eutaw formation with respect to which the Soso Field Unit has been created by voluntary agreement of more than 99 percent of all of operating owners and more than 95 percent of the royalty owners, with respect to which it is proper and necessary for the promotion of conservation to consider and treat the unit area in said pools as a single drilling and producing unit as to all tracts therein contained, subject only to such limitations as may be required to protect, the co-equal and correlative rights of all those owners in those tracts who have not by voluntary consent joined in the Soso Field Unit. As to said pools the rules hereinafter provided applicable to them will enable the said pools efficiently to be drilled and to produce the recoverable oil and gas therein contained with full protection of the co-equal and correlative rights of all and without avoidable waste. (Order No. 108-84).

**RULE 1:**

**A. SPACING NON-UNITIZED GAS WELLS:**

(a) A drilling unit is hereby established for each and all gas wells drilled and either singly completed or dually completed in the Stanley Pool and the Christmas Pool as an area consisting of a governmental one-half section or 8 contiguous governmental quarter-quarter sections of approximately 320 contiguous surface acres conforming to a rectangular unit which shall contain not less than 300 acres. The Board reserves the right, upon notice and hearing, to grant exceptions to this rule both for drilling units consisting of less than one-half governmental sections or eight governmental quarter-quarter sections with the allowable reduced proportionately and drilling units in irregular shapes consisting of approximately 320

surface contiguous acres with no reduction in the allowable for said drilling unit. (Order No. 59-71)

(b) The patterns of drilling units of governmental half sections or of 8 governmental quarter-quarter sections for the Stanley Gas Producing Pool and the Christmas Gas Producing Pool shall be either the East or West half or North or South half of a governmental section. (Order No. 82-57).

(c) Every well drilled as a gas well to either the Stanley or Christmas Gas Producing Pools shall be located not less than 330 feet from any exterior boundary of the unit, and located at least 660 feet from every other drilling or producing well in the same pool provided, however, that exceptions may be granted by the Board after notice and hearing and on such conditions as set out by the Board. (Order No. 82-57).

(d) Said pools and further extensions thereof shall be divided into 320 acre allowable units for each of the Stanley and Christmas Gas Producing Pools. Each producing 320 acre tract shall be an allowable unit for each pool and each producing tract containing less than 300 acres in each pool shall be a fractional allowable unit for that pool. (Order No. 82-57). Any drilling unit formed hereunder shall be completely encompassed by the perimeter of a rectangle 3735 feet by 5380 feet.

## **B. SPACING UNITIZED OIL AND GAS WELLS**

(a) 1. A drilling unit is hereby established for each and all oil or gas wells drilled and either singly or dually completed in the oil or gas pools hereinabove defined as B(3) through B(5), as consisting of the entirety of the area underlain by such pools within the unit area affected by the Soso Field Unit Agreements; except that portion thereof included in Units as defined in Subsection 2 hereof. (Order No. 108-84).

2. Each oil or gas drilling unit heretofore or hereafter established under the provisions of Statewide Rules and with respect to which any ownership of an operating or royalty interest has not been made subject to the Unitization Agreement creating the Soso

Field Unit shall maintain its status as a drilling unit. (Order No. 82-57).

(b) When used in these rules, the words "Individual Drilling Unit" shall mean as to each pool defined herein a developed drilling unit now or hereafter existing in the unit area created in accordance with Statewide Rules wherein any ownership of an operating or royalty interest has not been made subject to the Unitization Agreement creating the Soso Field Unit; and the words "Fieldwide Unit" shall mean as to each pool defined herein the entire portion of the Soso Field Unit area underlain by such pool, exclusive of that portion thereof included in any individual drilling unit and also exclusive of the net acreage therein which is attributable to any operating or royalty interest not subject to said Unitization Agreement. (Order No. 82-57).

(c) 1. The location of wells upon the Fieldwide Unit shall be governed by standards of geology and petroleum engineering designed to promote the greatest ultimate recovery of hydrocarbons remaining in the Fieldwide Unit. However, no well in said Fieldwide Unit may be drilled nearer than 330 feet from any boundary of the Fieldwide Unit or from any boundary of an Individual Drilling Unit except upon permit issued by the Board, after notice and hearing.

2. The location of wells upon any Individual Drilling Unit shall be covered by applicable Statewide Rules promulgated by this Board.

(d) The allowable for the SoSo Field Unit (Zone "A" and Zone "B" as defined by the SoSo Field Unitization Agreement) is hereby granted an allowable of 10,000 barrels of oil per day unless otherwise changed by the Board. The allowable production of said fieldwide unit may be produced by any well or wells on said fieldwide unit; provided, however, that no well shall be operated in such a manner as to call waste as defined by the laws of the State of Mississippi.

**RULE 2 - MEASUREMENT OF PRODUCTION:**

(a) The operator of each singly producing well or each multiply completed

producing well may maintain and use oil meters and such connections thereto as will permit the adequate testing of each such well under usual operating conditions without the necessity of closing in any other well or zone. Where meters are used for testing they shall be of a design and installed in conformance with recognized metering practices on the outlet of each separator or heater treater serving an individual Drilling Unit or the Fieldwide Unit in Soso Field for the adequate measurement of the oil produced from any such wells or oil produced from separate pools in a multiply completed well in the following manner: (Order No. 108-84).

All meters and equipment affecting meter accuracy shall be kept in good working order and each meter shall be calibrated once a month by means of a calibrated tank, a calibrated meter prover, or a master meter.

When a meter is found to deviate in its recording by more than 2%, it must be adjusted to conform to a tolerance limitation of 2% or the meter calibration factor corrected.

(b) Lease Automatic Custody Transfer Systems may be utilized in conjunction with Rule 2(a) to effect transfer from the operator to the transporter or purchaser. (Order No. 55-67).

(c) The Operator of the SoSo Field Unit shall be permitted to commingle production at the surface from all fieldwide and individual units for collection and sale at a central tank battery as part of its secondary and tertiary oil recovery projects. This includes a central tank battery and a central facility for oil, water, and CO<sub>2</sub> production, cycling and injection operations. The oil and gas production from the Fields may be commingled in a common storage system. The Operator shall install a flowline, header and measurement system that allows each well to be separately and individually tested on a periodic basis, not less than once each month. If, upon a sale therefrom, a variance exists between the measurement from the common storage system and the measurement from the production of all the wells commingled in such common storage system, then such variance shall be

allocated back to each of the wells producing into the common storage system proportionately to the production measured from each of the wells on the basis of the periodic tests.

(d) Each producing well shall be so equipped that gas/oil ratio and bottomhole or other pressure test may be made.

(e) Each producing well shall be connected to a metering system as will permit the adequate testing of each individual well under usual operating conditions without the necessity of closing in any other well. Each well shall be tested not less than once per month for allocation of fieldwide production and between individual units. Separators, stock tanks or measuring devices and connections thereto shall be subject to approval by the Supervisor.

### **RULE 3 - HORIZONTALLY & DIRECTIONALLY DRILLED WELLS AND DIRECTIONAL SURVEY**

A. Operator is authorized to conduct horizontal and/or directional drilling and completion or recompletion of wells within the unitized zones of the Soso Field Unit (Zone "A" and Zone "B" as defined by the Soso Field Unit Unitization Agreement) on administrative permit without notice and public hearing. Such horizontally and/or directionally drilled and completed or recompleted well(s) shall be confined to the geographic limits of the Soso Field Unit and the unitized zones (Zone "A" and Zone "B") thereof as those terms are defined in said unitization agreement.

B. For the purposes of these Special Field Rules, a horizontal well is defined as a high angle directional well which results in a wellbore with 100 to 3000 feet of lateral penetration. Directional wells are wells which are deviated from the vertical but which do not otherwise satisfy the conditions of a horizontal well.

C. Operator shall file on a Form 3 a record of all deviation tests taken.

D. Spacing for horizontally and/or directionally drilled and completed or recompleted wells within the unitized zones (Zone "A" and Zone "B") of the Soso Field Unit



shall comply with the spacing and other requirements provided for in Rule 1(B) above.

E. For any horizontal and/or directional well(s) drilled and completed or recompleted outside the unitized zones (Zone "A" and Zone "B") of the Soso Field Unit, the conditions and requirements of this rule shall not apply but such well(s) will be controlled by the appropriate Statewide Rule.

F. When a well is drilled as a horizontal or deviated well, or is directionally deviated from its normal course for any reason, a complete angular deviation and directional survey of the finished hole shall be made at the expense of the operator and a certified copy of such survey shall be filed with the Board within thirty (30) days thereof.

G. The Board shall have the right to make or require the operator to make a directional survey of any hole at such operator's expense. The Board shall also have the right to require the operator to make a directional survey of any hole at the request of an offset operator, if, in the Board's opinion, such is necessary, but at the expense and risk of said offset operator unless it is found that such well is completed at a point outside the operator's drilling unit.

H. If Operator drills and completes or recompletes any horizontal and/or directional well(s) within any producing pool(s) of the Soso Field Unit not otherwise defined, Operator shall without delay seek Board approval to amend these Special Field Rules to properly define such pool(s).

#### **RULE 4. SECONDARY RECOVERY AND PRESSURE MAINTENANCE OPERATIONS**

The Operator of the Soso Field Unit is authorized to implement secondary recovery and/or pressure maintenance operations in the Soso Field Unit utilizing for injection purposes injection wells drilled on said fieldwide unit or existing wells which may be converted to injection wells. Any wells drilled as injection wells or existing wells converted to injection wells by the Operator of the Soso Field Unit as a part of pressure maintenance or secondary recovery operations, or converted from injection wells to fieldwide unit oil or gas producing

wells, may be approved by the Mississippi State Oil and Gas Board on administrative permit, without notice and hearing, upon the Operator filing with the Board a duly executed FORM 2, the required permit fee for each such well, a location plat depicting the location of the well on the fieldwide unit, and all evidence and information required by Statewide Rule 63 or such other evidence or information as the Board may require.

#### **RULE 5 - TERTIARY ENHANCED OIL RECOVERY METHODS**

The Operator of the Soso Field Unit is further authorized to implement tertiary enhanced oil recovery methods and/or pressure maintenance operations within the unitized intervals of the Soso Field Unit including microbial enhanced oil recovery methods and such other tertiary enhanced oil recovery methods as may be approved and permitted by the Mississippi State Oil and Gas Board. In conjunction with such tertiary enhanced oil recovery operations the Operator may use for injection purposes existing wells located on the Soso Field Unit which may be converted to injection wells or wells may be drilled on said fieldwide unit for such purposes. Any such wells drilled as injection wells or converted to injection wells by the Operator on the fieldwide unit, as a part of tertiary enhanced oil recovery operations, may be approved by the Mississippi State Oil and Gas Board upon administrative permit, without hearing, upon the Operator filing with the Board a duly executed FORM 2. The required permit fee for each such well, and all evidence and information required by Statewide Rule 63 and upon not less than twenty (20) days publication notice. In addition, existing fieldwide unit injection wells may be converted to fieldwide unit producing wells on administrative permit, without notice and hearing, upon the Operator filing with the Board a duly executed FORM 2, the required permit fee for each such well, and all other evidence and information the Board may require.

#### **RULE 6 - APPLICABILITY OF STATEWIDE RULES**

(a) All rules and regulations contained in Statewide Order No. 201-51 and amendments thereto not specifically covered by the foregoing rules are hereby adopted and

shall apply to said field. (Order No. 4-67).

(b) The Board expressly reserves the right, after notice and hearing, to alter, amend or repeal any and all of the above and foregoing rules and regulations. (Order No. 4-67 ).


**\*\*\* End of Special Field Rules \*\*\***

**IT IS FURTHER ORDERED AND ADJUDGED** that this Order shall be in force and effect from and after May 18, 2005.

**IT IS FURTHER ORDERED AND ADJUDGED** that Petitioner shall acquire any other permits, if any, required by any other permitting authority.

**ORDERED AND ADJUDGED** this 15<sup>th</sup> day of June, 2005.

**STATE OIL AND GAS BOARD OF  
MISSISSIPPI**

  
VICE CHAIRMAN  
(Acting Chairman)

**Prepared By:**

William F. Blair  
BLAIR & BONDURANT, P.A.  
Post Office Box 321423  
Jackson, MS 39232  
(601) 992-4477 - Telephone  
(601) 992-9189 - Telecopier