

IN THE STATE OIL AND GAS BOARD OF MISSISSIPPI

FILED FOR RECORD

RE: PETITION OF TOMLINSON INTERESTS,  
INC. TO ESTABLISH SPECIAL FIELD  
RULES FOR JOHNS FIELD, RANKIN  
COUNTY, MISSISSIPPI.

APR 20 1982

STATE OIL AND GAS BOARD  
Robert B. Wilson, Acting Supervisor

DOCKET NO. 37-82-529

ORDER NO. 106-82

O R D E R

THIS DAY this matter came on for hearing before the State Oil and Gas Board on the Petition of Tomlinson Interests, Inc. to establish Special Field Rules for Johns Field, such hearing being called for such purpose; and

The Board finding 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 and way provided by law and the rules and regulations of the Board, and that due, legal and sufficient proofs of publication are on file with the Board, and that the Board has full jurisdiction of the subject matter to hear and determine same, pursuant to Sections 53-1-1 thru 47 and 53-3-1 thru 23, Miss. Code Ann. (1972); and

WHEREAS, pursuant to said notice given, this matter was first brought for hearing at the regular January 20, 1982 meeting of this Board at which time this matter was continued to the regular February meeting of this Board on the motion of several objectors; and

WHEREAS, public hearing was then held by this Board in the Second Floor Auditorium of the Woolfolk State Office Building, North West Street, Jackson, Mississippi at the regular February meeting of this Board commencing on February 17, 1982, at which hearing all persons present who desired to be heard on said matter were heard and all testimony and evidence were duly considered by those present at said meeting; and

WHEREAS, this matter was taken under advisement by this Board at the conclusion of said hearing; and

WHEREAS, the Board now having fully considered this matter and the evidence and recommendations made in said meeting, finds as follows:

1. Johns Field has been developed on 640 acre governmental survey units in conformance with statewide rules. In September, 1980, Tomlinson Interests, Inc. completed its Caley T. Jones Unit 33-10 Well No. 1 in the Smackover Formation as a commercial gas well. This well discovered a new sour gas pool in an area of Rankin County not associated with any known producing fields. Tomlinson Interests, Inc. has since drilled three offset wells and has staked location on another offset well, now permitted in Section 34, Township 4 North, Range 5 East, Rankin County, Mississippi.

2. The evidence shows that the Smackover Gas Pool, as discovered in the C. T. Jones Well, appears to be confined to Sections 32, 33, and 34, Township 4 North, Range 5 East, and Section 3, Township 3 North, Range 5 East, Rankin County, Mississippi.

3. The raw gas from the Smackover Gas Pool contains amounts of carbon dioxide (CO<sub>2</sub>) and hydrogen sulfide (H<sub>2</sub>S) which make this gas unmarketable in its natural state. This gas must be processed to extract almost all of these elements from the gas stream in order to be able to produce and sell it. In order to process this gas, Petitioner and other working interest owners in Johns Field have designed and are in the process of constructing extensive processing facilities to make the gas marketable.

4. Because of the long time involved in ordering specially made parts and to construct the processing facility, this plant was designed to process up to 50 million cubic feet of gas a day (50 MMCFGD). This capacity was selected based on estimated reserves in the field shortly after the completion of the discovery well and the then known production characteristics

of wells producing in the surrounding Smackover Gas Fields. The subsequent development wells in this field have now shown that the size of this reservoir is smaller than originally projected and that, under Statewide Rules, the Smackover Gas Pool of Johns Field will not be able to provide enough raw gas to load the processing plant to capacity as planned.

5. The evidence presented shows that the processing facility at Johns Field appears to have been designed to satisfy governmental safety and environmental requirements and to incorporate the latest, state-of-the-art features for such facilities. However, the plant must run close to maximum capacity to avoid the consumption of substantial amounts of gas from the field in processing operations which would otherwise be sold. The evidence shows that running this plant at less than full capacity will result in waste of natural resources from Johns Field.

6. The evidence shows that an additional well on Sections 32, 33 and 34, Township 4 North, Range 5 East, appear to be geologically feasible at this time. The evidence also shows that wells drilled no closer than 1,980 feet from each other will not cause any undue interference among wells, damage the reservoir, or result in the loss of productive reserves. The additional wells should increase the total production from this pool.

7. The evidence presented further shows that wells drilled at locations no closer than 990 feet from unit boundaries will adequately protect the offset units from drainage which cannot be compensated for by counter-drainage. This spacing rule appears necessary to provide the operator with the flexibility necessary to maximize the number of additional wells that can be drilled into this pool.

8. The Board finds that one additional well drilled into each of the existing units, to the extent geologically feasible, are necessary to effectively and efficiently develop and deplete the Smackover Gas Pool in a reasonable length of time so as to prevent possible premature abandonment due to excessive

processing costs and to reduce, to the extent possible, the amount of reserves from this field which must be used to fuel the gas processing facilities.

9. The 640 acre units which have already been established for this field cannot be changed or reformed at this time without substantially diluting the rights of all parties with <sup>a vested interest</sup> ~~an~~ interest in this pool and, thereby, deprive them of their fair and equitable share of the gas which can be produced from this field.

10. The Board also finds that Rule 2, as provided herein, will adequately promote and require the continuous development reasonably and prudently necessary in this field to avoid possible drainage which cannot be offset by counter-drainage, while allowing the increased production from this field necessary to prevent avoidable waste.

11. By allowing up to two wells to be drilled on each existing unit, under the rules set forth herein, the Board finds that it is promoting prudent and efficient development of this field, preventing avoidable waste, and protecting the coequal and correlative rights of all parties with an interest in this field and pool such that they may receive their just and equitable share of productive gas from this field.

IT IS, THEREFORE, ORDERED AND ADJUDGED that Special Field Rules for Johns Field be and are hereby established as follows:

SPECIAL FIELD RULES FOR JOHNS FIELD,  
RANKIN COUNTY, MISSISSIPPI

A. Johns Field, as used herein, is that area consisting of the following described lands as are underlain by the Smackover Gas Pool and all productive extensions thereof, to-wit:

Section 32, 33 and 34, Township 4  
North, Range 5 East; and

Section 3, Township 3 North, Range  
5 East,

Rankin County, Mississippi.

B. The Smackover Gas Pool in the Johns Field shall be construed to mean that strata productive of gas and condensate in the interval between the depths of 18,744' and 19,168' as indicated on the Compensated Neutron Density Log of the Tomlinson Interests, Inc.-Caley T. Jones 33-10 Well No. 1 located in the Northwest Quarter of the Southeast Quarter (NW 1/4 SE 1/4) of Section 33, Township 4 North, Range 5 East, Rankin County, Mississippi, and all correlative intervals in communication therewith.

**RULE 1: SPACING OF GAS WELLS**

With respect to the Smackover Gas Pool, every gas well:

(a) shall be located on a drilling unit consisting of a governmental survey section containing not less than 600 acres or more than 680 acres. In any case, no more than two wells producing from the Smackover Gas Pool may be located within the same unit;

(b) each well shall be located no closer than 1980 feet from every other drilling well or well completed in or producing from the same pool and located in conformity with this rule;

(c) each well shall be located not less than 990 feet from every exterior boundary of the drilling unit.

**RULE 2: RATE OF GAS PRODUCTION**

(a) The maximum allowable withdrawal rate for each gas well completed in the Smackover Gas Pool shall be established pursuant to Statewide Rules 34B and 41(a). The maximum allowable gas withdrawal rate for each drilling unit shall be no more than the total of the maximum deliverability for the well or wells completed therein. No well shall produce at a rate higher than its maximum efficient rate of production. Allowables less than the maximum deliverability may be assigned where, upon notice and hearing, the State Oil and Gas Board finds it is necessary to prevent waste and/or protect the coequal and correlative rights

of owners underlain by said pool. The daily gas allowable allocated to a gas producing unit may not be transferred to another gas producing unit. In the event a well does not have the capacity to produce its total allowable, then it may produce such amount of gas less than its allowable that it is able to produce.

(b) If, after six (6) months from commencement of simultaneous production from two wells on a drilling unit (two-well unit), a second well on each direct offset unit presently established for this field has not been drilled or is not being drilled to sufficiently evaluate the Smackover Gas Pool as defined herein, then production from the two-well unit must be reduced so that the two wells cumulatively do not produce in excess of the highest allowable for any single well on said two-well unit. Provided, however, this production restriction, if placed into effect, would only remain in effect until the second well on each such offset unit is drilled and completed as capable of commercial production or abandoned as commercially non-productive. Further provided, however, this provision (Rule 2(b)) shall not be applicable to the extent that the direct offset unit is the unit consisting of Section 3, Township 3 North, Range 5 East. Exceptions to this provision may be made for good cause after notice and hearing.

(c) In the event that the total deliverability from all wells completed in the Smackover Gas Pool as defined herein is greater than ~~the processing capacity available for gas produced from this field,~~ <sup>FIFTY MILLION CUBIC FEET OF GAS PER DAY (50 MMCFGD),</sup> then the allowables <sup>EACH PRODUCING WELL IN</sup> for all two-well units shall be <sup>PROPORTIONATLY</sup> ~~equally~~ reduced by the difference between the field deliverability and <sup>50 MMCFGD.</sup> ~~processing capacity.~~

Dr. F. S.

RULE 3: SAFETY REGULATIONS - DRILLING

A. Casing. In addition to the surface casing and production casing required by Statewide Rules 11 and 12, an intermediate casing string shall be required. This string of casing shall be set at a depth at least into the top of the Cotton Valley Formation in the Johns Field. A quantity of cement sufficient to bring the cement column to within 11,000 feet of the surface

shall be used. All casing exposed to production shall be suitable for sour gas service.

Protective Casing. This string of casing shall be set into the Lower Buckner or top of the Smackover Formation. A quantity of cement sufficient to bring the cement column to the base of the next larger casing shall be used. If a liner is used as the protective string, the cement shall be tested by a fluid entry or pressure test to determine whether a seal between the top of the liner and the next larger string of casing has been achieved. When such liner is used as production casing, it shall also be extended back to the surface to avoid the intermediate casing string being utilized as production casing.

(1) After cementing any of the above strings of casing, drilling shall not be commenced until a time lapse of at least 24 hours, or 12 hours under continuous pressure.

(2) Before drilling the cement plug in any of the above strings of casing, the casing shall be tested at a pressure in pounds per square inch calculated by multiplying the total casing length in feet by two-tenths (.2). If the pressure declines more than ten percent (10%) in 30 minutes, or if there is other indication of a leak, the casing shall be recemented and repaired or an additional casing string run and the casing tested again in the same manner.

B. Blowout Prevention Equipment and Choke Manifold. Blowout preventers and related well control equipment used while drilling any well in the Johns Field shall be installed, used and tested in a manner necessary to prevent blowouts. Blowout prevention equipment shall consist of a minimum of four remotely controlled hydraulic-operated blowout preventers, treated for sour gas service with a working pressure which exceeds the maximum anticipated surface pressure. This equipment shall include a bag type, or

annular blowout preventer; a blowout preventer with blind rams; and blowout preventers with pipe rams for every drill pipe size in use; a choke manifold, a kill line and a fill-up line. The choke manifold shall be trimmed for sour gas service. Accumulators for activating blowout preventers shall be of sufficient size as to maintain a pressure reserve capacity at all times to open and close each and every hydraulic blowout preventer without recharging. Accumulators shall be equipped with both an electric and air-operated pump. The accumulator system shall be located a safe distance from the rig and in a different direction from the choke lines. In addition to the accumulator station, the blowout preventers and choke equipment must be capable of being operated from the rig floor and additionally from a remote control area located away from the rig.

C. Testing of Blowout Prevention Equipment. The ram-type blowout preventers and related control equipment shall be tested with water at least three-fourths ( $3/4$ ) the rated working pressures, or two-thirds ( $2/3$ ) the working pressure of the casing, whichever is the lesser when installed, before drilling out after each string of casing is set, and not less than once each month while drilling and also following all repairs that require disconnecting a pressure seal in the assembly. The bag-type or annular preventer shall be tested to one-third ( $1/3$ ) of its rated working pressure at similar times. The Operator shall notify the State Oil and Gas Board four (4) hours in advance of such tests in order that a representative of the Board may be present, except in emergencies. While the drill pipe is in use, and while drilling below the protective casing, the ram-type preventers shall be actuated once each trip but in no event less frequently than daily to test proper functioning. Blowout prevention drills shall be conducted weekly for each drilling crew to insure that all equipment is operational and that drilling crews are properly trained to carry out emergency duties.



D. Other Equipment. When drilling in the Buckner and deeper formations, the following additional safety equipment is required:

(1) inside blowout preventer adaptable to each type of connection in use with the drilling string shall be maintained on the floor at all times. A Kelly cock (or valve) shall be installed both below the swivel and another full opening Kelly cock (or valve) shall be installed at the bottom of the Kelly of such design that it can be run through the blowout preventers and into the casing;

(2) pit level recorder and mud flow indicator must be installed in such a manner that graphs of the readings may be readily read and observed by the driller;

(3) special trip tank will be used with the mud flow diverted therein on all trips. The trip tank must be sufficiently accurate to detect the gain or loss of one barrel of mud or less over normal trip displacement; and

(4) electric power will be separated from the rig structure so that it may be used under emergency conditions when it otherwise would be shut down.

E. Rig Layout.

(1) When feasible, the drilling rig shall be situated on a location so that the anticipated prevailing winds, while drilling in the Buckner and Smackover, blow across the rig and toward the reserve pits.

(2) Mud tanks are to be located at least 90 feet from the well bore.

(3) A mud logging trailer or similar device will be used below the top of the Buckner Formation and equipped with an automatic H<sub>2</sub>S monitor with its detector stationed at the shale shaker. At least one other H<sub>2</sub>S

detector will be positioned on the rig floor with a monitor located in the mud logging trailer.

(4) An emergency equipment trailer will be on location at all times and positioned in a safe normally up-wind area. Said trailer will be equipped with sufficient gas masks, self-contained breathing units, resuscitators, H<sub>2</sub>S and CO<sub>2</sub> detectors and auxiliary equipment for use in an emergency.

(5) A sufficient sized electric fan with an explosion-proof motor will be positioned on the rig floor and another fan under the rig floor so that when used, same shall be sufficient to clear any accumulated gas from the substructure and away from the stairway.

F. Directional Surveys. Directional Surveys will be made from the surface to the top of the Buckner Formation and an additional survey from the Buckner to total depth, or as deep as mechanically possible. Surveys may either be gyroscopic or magnetic-type but will not be calculated from a dipmeter.

G. Accident and Contingency Plan. An accident and contingency plan shall be developed and diled prior to drilling. The plan shall include a plot of the well site upon a map having a radius of at least three miles around the well, upon which shall be shown all good roads, the residences of all occupants in the area (with homes, telephone numbers, names and number of residents listed). Churches and public areas shall also be shown on said map. The Emergency Plan shall also be accompanied by exhibits as follows:

(1) An emergency evacuation plan.

(2) A list of medical personnel and facilities that are prepared to treat personnel exposed to toxic gas showing addresses and telephone numbers.

(3) Agencies to be notified in case of emergency with addresses and telephone numbers.

Supervisor personnel must be familiar with all roads to the subject residences and be trained in removal of personnel in the event of an evacuation. Those persons residing in places in low elevations within a one-mile radius of the well bore shall be given priority in evacuation.

H. Blowouts. In case of a blowout, the well must be ignited in a situation where it is clear that human life is endangered or there is no hope of controlling the blowout under the prevailing conditions of the well. Equipment must be kept on location at all times capable of igniting the well.

**RULE 4: SAFETY REGULATIONS - TESTING, PRODUCING AND GATHERING**

A. Before testing any well and before conducting workover operations involving bleeding fluid from well, the State Oil and Gas Board shall be notified at least four (4) hours in advance. In emergency situations where applicable air standards are exceeded, the State Oil and Gas Board and the Pollution Control Commission - Department of Natural Resources shall be given immediate notification by telephone.

(1) Tubing and Flowlines. All tubing and flowlines shall be suitable for sour gas service and the tubing may have a diameter of at least 4-1/2 inches in order that a kill string may be installed inside of the tubing upon completion of the well. Inhibitor oil or other fluid shall be continually injected into the well so that the tubing and flowlines shall be additionally protected from corrosion.

(2) Wellhead Equipment. All completed wells shall be equipped with casingheads, wellhead fittings, valves and connections with a rated working pressure equal to or greater than the surface shut-in pressure of the well and all such fittings shall be suitable for sour gas service. Shut-off devices in connection with the wellhead assembly shall include a manually

operated shut-off valve, a stand-by (reserve) manually operated shut-off valve and a self-operating (automatic) safety shut-off valve that automatically closes in the well if flowline pressure drops indicating a rupture in the flowline.

(3) Equipment for a production test shall include a flare stack designed to meet applicable air standards, flare knockout drum and automatic hydrogen sulfide monitor.

(4) The wellhead shall have tubing and casing pressure recorders installed and operative during all testing operations. Recorders shall be deadweight tested for accuracy prior to start of operations.

(5) A control center with adequate communications will be provided at the well site and located so that an unobstructed view of the wellhead is available throughout the operation. The automatic hydrogen sulfide monitor will be positioned in the control center with its detectors located at suitable locations.

(6) Pits used in conjunction with testing or workover operations shall be used to retain only mud or other liquid. When testing or bleeding a well during workover mud, oil, water and other liquids may be diverted directly to the pit until the presence of gas is determined by on-site detectors. Thereafter, gas or gas liquid mixtures must be processed through a flare knockout drum and a flare stack. The pits shall have several pilots extending over them. The flare stack pilot shall be equipped with an auxiliary fuel source and automatic igniter. The flare stack ignition system shall have a suitable backup ignition system.

(7) All producing wells shall be equipped with monitoring devices that may be read from a central location to monitor whether the well is shut-in, flaring to

the flare stack or producing. In addition, each well site will be equipped with a hydrogen sulfide detector which can be monitored from a central location.

(8) A mud system for all wells in the field containing mud of sufficient weight and volume to offset the hydrostatic pressure of the productive interval will be maintained. The system will have means to condition the mud and will be checked at least monthly by a competent mud engineer for weight (pounds per gallon) yield point and plastic viscosity.

**RULE 5: VISIBLE WARNING SYSTEM**

A. Wind indicators shall be installed at prominent locations in order that all personnel can readily determine wind direction at all times. These wind indicators will aid personnel in determining safe upwind areas in the event H<sub>2</sub>S or CO<sub>2</sub> is present in the atmosphere.

B. Operational flags shall be displayed from high points visible to all personnel. These flags are to indicate the following operational conditions:

(1) YELLOW FLAG WITH NUMERAL 1 IN CENTER:  
POTENTIAL DANGER . . . while drilling in known H<sub>2</sub>S zones or when H<sub>2</sub>S has been detected in the drilling fluid or atmosphere. Protective equipment shall be inspected and all working personnel shall be ready to use this equipment.

(2) ORANGE FLAG WITH NUMERAL 2 IN CENTER:  
MODERATE DANGER . . . when the threshold limit value of H<sub>2</sub>S (10 ppm) or of CO<sub>2</sub> (5 ppm) is reached. If the concentration of H<sub>2</sub>S or CO<sub>2</sub> reaches 20 ppm, protective equipment must be worn by all personnel and all nonworking personnel shall proceed to the safe briefing areas.

(3) RED FLAG WITH NUMERAL 3 IN CENTER: EXTREME  
DANGER . . . when H<sub>2</sub>S or CO<sub>2</sub> is determined to have

reached the injurious level, immediately evacuate all nonessential personnel.

C. Signs shall be posted on or by each gate at well site, as follows:

- |               |  |
|---------------|--|
| (1) 14" x 20" | DANGER<br>RESTRICTED AREA<br><u>KEEP OUT</u>     |
| (2) 8" x 12"  | CAUTION<br>POISON MAY BE PRESENT<br>AT THIS SITE |
| (3) 14" x 20" | DANGER<br>NO SMOKING BEYOND THIS<br>POINT        |

D. Pipeline crossing of county or state road shall have signs on each side of road as follows:

- |           |   |
|-----------|---|
| 14" x 20" | CAUTION<br>HIGH PRESSURE GAS LINE<br>(COMPANY NAME)<br>(TELEPHONE NUMBER) |
|-----------|---|

**RULE 6: APPLICABILITY OF STATEWIDE RULES**

A. All rules and regulations contained in Statewide Order No. 201-51, and amendments thereto, not in conflict with the foregoing Special Field Rules, are hereby adopted and shall apply in said field.

B. The Board expressly reserves the right, <sup>J.R.F.</sup> *ON ITS' OWN MOTION, OR OTHERWISE,* after notice and hearing, to alter, amend or repeal any and all of the above and foregoing rules and regulations.

ORDERED AND ADJUDGED this 18<sup>TH</sup> day of March, 1982.

MISSISSIPPI STATE OIL AND GAS BOARD

By: Joe R. Sanchez, Jr.  
CHAIRMAN