

BEFORE THE CORPORATION COMMISSION OF THE STATE OF OKLAHOMA

IN THE MATTER OF THE APPLICATION OF SINGER OIL)
OPERATING COMPANY TO AMEND ORDER NO. 44297 CREATING)
GENERAL RULES AND REGULATIONS GOVERNING THE DRILLING)
OF OIL AND GAS WELLS AND THE PRODUCTION THEREFROM) CAUSE CD NO. 19034
IN THE STATE OF OKLAHOMA, SO AS TO PERMIT THE USE OF)
A CHOKE ASSEMBLY IN DUAL AND MULTIPLE COMPLETION)

REPORT OF THE TRIAL EXAMINER

This cause came on for hearing before the Corporation Commission of Oklahoma on the 25th day of October, 1963, and when said cause was called the same was referred to Ralph L. Wampler, Trial Examiner, for the purpose of taking testimony and reporting to the Commission.

At the time said cause was heard, Russell Thompson, Attorney, appeared for the applicant, Singer Oil Operating Company; Michael B. Silva, Attorney, appeared for Phillips Petroleum Company; Joe A. Owens appeared for Sun Oil Company; William A. Dow appeared for Cities Service Oil Company; James R. Marty appeared for Amerada Petroleum Corporation; Karl Tunstall appeared for Otis Engineering Corp.; and A. J. McCreedy appeared for Socony Mobil Oil Company.

The Trial Examiner proceeded to hear said cause and reports the following:

F I N D I N G S

1. That this is the application of Singer Oil Company for an order amending the Commission's General Rules as set out in Order No. 44297 so as to permit the use of a choke assembly dual and multiple completions.
2. That the Commission has jurisdiction over the subject matter herein; that notice has been given in all respects as required by law and no protests have been entered to the granting of the application.
3. That the applicant has an interest in the production of oil and gas in Oklahoma and proposes to use the Otis Choke Assembly in Oklahoma, if authorized to do so. The subject of this hearing is a new choke assembly whereby the production from each zone in a given well is calculated by providing individual chokes for each zone. Each producing zone is tested individually in order to determine the correct orifice for each zone, then the production from each zone is commingled in the well bore. When the hydrocarbons reach the surface, each producing zone is allocated a portion of the production, which is based on tests conducted on each zone prior to the commingling. Rather than run separate tubing to each zone, the hydrocarbons are commingled and the production from each zone is calculated and assigned accordingly.
4. To permit the use of this choke assembly would require the amendment of Sections 310 and 311 of Order No. 44297. Section 310 specifically prohibits the commingling of the production in the well and sets out how the production from each zone shall be measured. Section 311 provides that gas may be used for the artificial lifting of oil where all such gas returned to the surface with the oil is lawfully used, but where the returned gas is not to be so utilized, the use of gas for artificial lifting of oil is prohibited unless otherwise ordered by the Commission. The commingling of the production in the well would possibly result in the gas from one zone lifting the production of oil from the other zone and therefore an exception would need to be made which would permit this use of the gas even though there is no market for the gas.
5. The use of this choke assembly would result in substantial savings in that it would save the running of separate tubings to each of the producing formations. The amount of the savings would vary, depending on, among other things, the depth of the productive formations.

6. All the companies at the hearing supported this application with the exception of Socony Mobil, who had no comment and Cities Service who filed a statement which, in general, stated that the Otis Choke Assembly may be beneficial but had definite limitations and thought that a hearing should be held in each case if the Commission authorized its use.

7. It appears that whether or not this choke assembly should be used, would depend primarily on its accuracy. Nothing in this record would show anything but that the apparatus is very accurate. Any inaccuracy would come from the calculations made by the personnel allocating the production to each zone from the commingled production from the zones. There is little question but what the production from a weak zone could easily be boosted by the production from a stronger zone by merely adjusting the allocation figures, or any number of other ways. It is presumed, however, that all operators make a sincere and honest report of production. The use of the choke assembly will not change the honesty or dishonesty of anyone.

8. So, after consideration of all the facts, evidence and circumstances in this case, it is therefore recommended that the Commission enter its order granting the application and that the Commission amend Sections 310 and 311 of Order No. 44297 as set out in Exhibit "A" attached hereto; that the Commission further require operators to test the choke assembly in accordance with the procedures as set out on Exhibit "B" attached hereto; further, that the operators be required to file the results of such tests with the Director of Conservation upon completion of same.

DATED this 4th day of December, 1963.



Ralph L. Wampler, Trial Examiner

RLW/b

310. CONTROL OF MULTIPLE COMPLETED WELLS

(a) Every multiple completed well shall be equipped, operated, produced and maintained so that there will be no commingling of the production from said formations in the well except as hereafter provided, and the production from each of said formations shall be either measured by a positive displacement dump-type continuous-flow measuring device or a measuring device authorized by the Commission after notice and hearing, and separately reported as required by the Commission, or shall be separately stored and measured on the lease in such a manner that the pipe line company or purchaser can separately identify the production from each of said formations and separately report the same to the Conservation Department of the Commission.

(b) Where permitted by the Commission upon notice and hearing for each individual well, the production from each formation may be produced through a multiple choke assembly so designed and located in the well bore as to segregate the formations, preventing commingling within the formations, but permitting commingling in the tubing string through individual choke orifices. The commingled production shall be separately measured at the surface and allocated to each formation on the basis of tests using the orifice principle of measurement.

(c) Upon request by the Director of Conservation, any multiple completed well shall be tested at any time to demonstrate the effectiveness of the separation of sources of supply, such tests to be witnessed by representatives of the Commission and by offset operators if desired.

311. USE OF GAS FOR ARTIFICIAL LIFTING

(a) Gas may be used for the artificial lifting of oil where all such gas returned to the surface with the oil is lawfully used. Where the returned gas is not to be so utilized, the use of gas for artificial lifting of oil is prohibited, unless otherwise specifically ordered by the Commission upon hearing.

(b) The use of production from one common source of supply to assist in lifting the production from another common source of supply by commingling the production from both common sources of supply in the tubing string shall be permitted in those instances in which the operator is otherwise authorized to so commingle the production in the tubing.

**TESTING PROCEDURE FOR USE WITH A MULTIPLE FLOW
CHOKE ASSEMBLY**

1. Procure the necessary information to calculate the correct size of the flow bean for each orifice in the assembly.
2. Install the orifice assembly with one side blanked off and the other side with a flow bean of the calculated size.
3. Run a production test for 24 hours at stabilized rate of flow measuring all fluids and gasses produced.
4. Pull the choke assembly and place the correct size orifices in both sides and replace choke assembly.
5. Run a production test at a stabilized rate for 24 hours.
6. Calculate production from each zone on the basis of production from both zones less production from the individual zone.
7. At six month intervals repeat the testing procedure and run bottom hole pressures by:
 - (1) Removing the orifice assembly and blanking one side and taking a 24 hour bottom hole pressure test.
 - (2) Remove the assembly, blank the other side and take the 24 hour bottom hole pressure test.
8. Orifices will be sized so that the well will not produce at a rate in excess of 1.3 times the current allowables.
9. Orifices will be sized so that no zone will produce in excess of established field gas oil ratios.
10. Data will be furnished the Commission on forms approved by the Commission.

RAY C. JONES
Chairman

HAROLD FREEMAN
Vice-Chairman

WILBURN CARTWRIGHT
Member

DAN R. DUNNETT
Director Of Conservation

D. L. JONES
Assistant Director

W. H. SOLLERS
Trial Examiner

CARL B. MITCHELL
Secretary

FERRILL H. ROGERS
Conservation Attorney

STANLEY ROGERS
Assistant Director

RALPH L. WAMPLER
Asst. Conservation Atty.

W. J. MARSHALL
Assistant Director

NELL RHODES FISHER
Asst. Conservation Atty.

OKLAHOMA

Corporation Commission

OKLAHOMA CITY - - - OKLAHOMA



OIL AND GAS
CONSERVATION
DEPARTMENT

January 7, 1964

Mr. Russell Thompson, Att'y
1719 First National Bldg.
Oklahoma City, Oklahoma

Mr. James R. Marty
Amerada Petroleum Corp.
2703 Liberty Bank Bldg.
Oklahoma City, Okla.

Mr. Michael B. Silva, Att'y
Phillips Petroleum Company
Oklahoma Mortgage Building
Oklahoma City, Oklahoma

Mr. Karl Tunstall
Otis Engineering Corp.
301 S. E. 29th
Okla. City, Okla.

Mr. Joe A. Owens
Sun Oil Company
Box 2831, Beaumont, Texas

Mr. A. J. McCreedy
Socony Mobil Oil Co.
Petroleum Club Bldg.
Oklahoma City, Oklahoma

Mr. Wm. A. Dow
Cities Service Oil Co.
Box 4577, Okla. City, Okla.

Dear Sir:

Re: Cause CD No. 19034

Enclosed please find copy of Order No. 53749
entered by the Corporation Commission of Oklahoma.

Cordially yours,

FERRILL H. ROGERS,
Conservation Attorney

FHR:fls

BEFORE THE CORPORATION COMMISSION OF THE STATE OF OKLAHOMA

ON THE MOTION OF THE APPLICATION OF SINGER OIL
OPERATING COMPANY TO AMEND ORDER NO. 44297 CREATING
A CHOKO ASSEMBLY AND REGULATIONS GOVERNING THE DRILLING
OF OIL AND GAS WELLS AND THE PRODUCTION THEREFROM
IN THE STATE OF OKLAHOMA, SO AS TO PERMIT THE USE OF
A CHOKO ASSEMBLY IN DUAL AND MULTIPLE COMPLETION

CAUSE CD NO. 19034

ORDER NO. 53749

REPORT OF THE COMMISSION

This cause came on for hearing before the Corporation Commission of Oklahoma on the 18th day of October, 1941 at 10:00 o'clock a.m., in the Commission's Court Room, Capitol Office Building, Oklahoma City, Oklahoma; the Honorable Roy C. Jones, Chairman, Harold Freeman, Vice-Chairman, and Wilburn Cartwright, Commissioner, sitting.

Russell Thompson, Attorney, appeared for the applicant, Singer Oil Operating Company; Michael D. Silva, Attorney, appeared for Phillips Petroleum Company; Joe A. Owens appeared for Sun Oil Company; William A. Dow appeared for Cities Service Oil Company; James M. Hovey appeared for Amoco Petroleum Corporation; Earl Tunstall appeared for Oils Engineering Corporation; A. J. McCready appeared for Socony Mobil Oil Company; Merrill E. Rogers, Conservation Attorney, and Nell Rhodes Fisher, Assistant Conservation Attorney, appeared for the Commission.

The case was called and referred to Ralph L. Wampler, Trial Examiner, for the purpose of taking testimony and reporting to the Commission.

The Trial Examiner proceeded to hear said cause and filed his report recommending that the application be granted; that time was allowed within which exception might be filed to said report, and none having been filed, the report is hereby adopted and the Commission therefore finds as follows:

FINDINGS

1. That this is the application of Singer Oil Company for an order amending the Commission's General Rules as set out in Order No. 44297 so as to permit the use of a choke assembly dual and multiple completions.
2. That the Commission has jurisdiction over the subject matter herein; that notice has been given in all respects as required by law and no protests have been entered to the granting of the application.
3. That the applicant has an interest in the production of oil and gas in Oklahoma and proposes to use the Choke Check Assembly in Oklahoma, if authorized to do so. The subject of this hearing is a new choke assembly whereby the production from each zone in a given well is calculated by providing individual chokes for each zone. Each producing zone is tested individually in order to determine the correct orifice for each zone, then the production from each zone is commingled in the well bore. When the hydrocarbons reach the surface, each producing zone is allocated a portion of the production, which is based on tests conducted on each zone prior to the commingling. Instead of running separate tubing to each zone, the hydrocarbons are commingled and the production from each zone is calculated and assigned accordingly.
4. To permit the use of this choke assembly would require the amendment of Sections 310 and 311 of Order No. 44297. Section 310 specifically prohibits the commingling of the production in the well and sets out how the production from each zone shall be measured. Section 311 provides that gas may be used for the artificial lifting of oil where all such gas returned to the surface with the oil is lawfully used, but where the returned gas is not to be so utilized, the use of gas for artificial lifting of oil is prohibited unless otherwise ordered by the Commission. The commingling of the production in the well could possibly result in the gas from one zone lifting the production of oil from the other zone and therefore an exception would need to be made which would permit this use of the gas even though there is no market for the gas.
5. The use of this choke assembly would result in substantial savings in that it would save the running of separate tubings to each of the producing formations. The amount of the savings would vary, depending on, among other things, the depth of the

6. All the companies at the hearing supported this application with the exception of Soccony Mobil, who had no comment and Cities Service who filed a statement which, in general, stated that the Otis Choke Assembly may be beneficial but had definite limitations and thought that a hearing should be held in each case if the Commission authorized its use.

7. It appears that whether or not this choke assembly should be used, would depend primarily on its accuracy. Nothing in this record would show anything but that the apparatus is very accurate. Any inaccuracy would come from the calculations made by the personnel allocating the production to each zone from the commingled production from the zones. There is little question but what the production from a weak zone could easily be boosted by the production from a stronger zone by merely adjusting the allocation figures, or any number of other ways. It is presumed, however, that all operators make a sincere and honest report of production. The use of the choke assembly will not change the honesty or dishonesty of anyone.

8. That in the interest of securing the greatest ultimate recovery of oil and gas from the pool, the prevention of waste and the protection of correlative rights, this application should be granted.

O R D E R

IT IS THEREFORE ORDERED by the Corporation Commission of Oklahoma that Section 310 of Order No. 44297 be amended so as to read as follows:

"310. CONTROL OF MULTIPLE COMPLETED WELLS

(a) Every multiple completed well shall be equipped, operated, produced and maintained so that there will be no commingling of the production from said formations in the well except as hereafter provided, and the production from each of said formations shall be either measured by a positive displacement dump-type continuous-flow measuring device or a measuring device authorized by the Commission after notice and hearing, and separately reported as required by the Commission, or shall be separately stored and measured on the lease in such a manner that the pipe line company or purchaser can separately identify the production from each of said formations and separately report the same to the Conservation Department of the Commission.

(b) Where permitted by the Commission upon notice and hearing for each individual well, the production from each formation may be produced through a multiple choke assembly so designed and located in the well bore as to segregate the formations, preventing commingling within the formations, but permitting commingling in the tubing string through individual choke orifices. The commingled production shall be separately measured at the surface and allocated to each formation on the basis of tests using the orifice principle of measurement.

(c) Upon request by the Director of Conservation, any multiple completed well shall be tested at any time to demonstrate the effectiveness of the separation of sources of supply, such tests to be witnessed by representatives of the Commission and by offset operators if desired."

IT IS FURTHER ORDERED that Section 311 of Order No. 44297 be amended so as to read as follows:

"311. USE OF GAS OR ARTIFICIAL LIFTING

(a) Gas may be used for the artificial lifting of oil where all such gas returned to the surface with the oil is lawfully used. Where the returned gas is not to be so utilized, the use of gas for artificial lifting of oil is prohibited, unless otherwise specifically ordered by the Commission upon hearing.

(b) The use of production from one common source of supply to assist in lifting the production from another common source of supply by commingling the production from both common sources of supply in the tubing string shall be permitted in those instances in which the operator is otherwise authorized to so commingle the production in the tubing."

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IT IS FURTHER ORDERED that the following testing procedure be followed in all cases where the multi flow choke assembly is used:

- "1. Procure the necessary information to calculate the correct size of the flow beam for each orifice in the assembly.
2. Install the orifice assembly with one side blanked off and the other side with a flow beam of the calculated size.
3. Run a production test for 24 hours at stabilized rate of flow measuring all fluids and gases produced.
4. Pull the choke assembly and place the correct size orifices in both sides and replace choke assembly.
5. Run a production test at a stabilized rate for 24 hours.
6. Calculate production from each zone on the basis of production from both zones less production from the individual zone.
7. At six month intervals repeat the testing procedure and run bottom hole pressures by:
 - (1) Removing the orifice assembly and blanking one side and taking a 24 hour bottom hole pressure test.
 - (2) Remove the assembly, blank the other side and take the 24 hour bottom hole pressure test.
8. Orifices will be sized so that the well will not produce at a rate in excess of 1.3 times the current allowables.
9. Orifices will be sized so that no zone will produce in excess of established field gas oil ratios.
10. Data will be furnished the Commission on forms approved by the Commission."

DONE AND PERFORMED this 3rd day of JANUARY, 19 64.

CORPORATION COMMISSION OF OKLAHOMA

Ray C. Jones

Ray C. Jones, Chairman

Harold Freeman, Vice-Chairman

Wilburn Cartwright

Wilburn Cartwright, Commissioner

ATTEST: *L. H. Mitchell*

Secretary

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STATE OF LOUISIANA
DEPARTMENT OF CONSERVATION
BATON ROUGE, LOUISIANA

June 20, 1961

ORDER NO. 541-1

Order concerning the application of Sun Oil Company
for an exception to the provisions of Department of
Conservation Statewide Order No. 29-B, dated July 19,
1943, in the Kinder Field, Allen Parish, Louisiana.

Pursuant to power delegated under the laws of the State of Louisiana, and particularly Title 30 of Louisiana Revised Statutes of 1950, and after public hearing held under Docket No. 61-192 in Baton Rouge, Louisiana, on May 25, 1961, upon the application of Sun Oil Company, following legal publication of notice and notice by mail to all known interested parties in accordance with the rules prescribed by the Commissioner of Conservation, the following order is issued and promulgated by the Commissioner of Conservation as being reasonably necessary to conserve the oil and gas resources of the State, to prevent waste as defined by law, to avoid the drilling of unnecessary wells, and otherwise to carry out the provisions of the laws of this State.

FINDINGS

The Commissioner of Conservation finds as follows:

1. That a reasonable interpretation of all available engineering data indicates that the use of a multiple completion choke assembly will permit the production of gaseous and/or liquid hydrocarbons from two separate reservoirs simultaneously through the same tubing without communication existing between such zones of production utilizing energy dissipated in producing production from one zone to lift production from another zone.

2. That a reasonable interpretation of all engineering data indicates that the use of the multiple completion choke assembly should permit a definite measurement of production from two separate reservoirs and the resulting proper allocation of both gaseous and/or liquid hydrocarbons.

3. That the use of the multiple completion choke assembly will permit a greater ultimate recovery from the producing zones, thereby preventing waste and increasing the just and equitable share of recoverable hydrocarbons and the resulting greater income to each owner of an interest in said producing zones.

4. That an exception to Statewide Order No. 29-B, and in particular Section X, Paragraph E, sub-paragraph 1, and Section XI, Paragraph B, sub-paragraph 4, should be granted to permit the use of such multiple completion choke assembly in the following wells situated in the Kinder Field, Allen Parish, Louisiana, to-wit: Unkel Well No. 1-D and Vicksburg Unit Well No. 3; Vicksburg Unit Well No. 1 and Lawrence-Chachere Unit Well No. 1-D; Vicksburg Unit Well No. 2 and Chachere Unit B, Well No. 1-D; Vicksburg Unit No. 4 and Kinder Canal Co. "A" Well No. 2-D; and Vicksburg Unit No. 5 and Sherman M. Houston Well No. 3-D.

5. That permission to use the multiple completion choke assembly in wells dually completed by Sun Oil Company in the Kinder Field, Allen Parish, Louisiana, subsequent to this Order can be granted, without the necessity of a public hearing, under the provisions of this Order and applicable provisions of Statewide Order No. 29-D, as amended and supplemented, following proper notice to all parties at interest who were not parties to this hearing.

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ORDER

NOW, THEREFORE, IT IS ORDERED THAT:

1. The Applicant, Sun Oil Company, be and is hereby granted an exception to Statewide Order No. 29-B, and particularly Section X, Paragraph E, sub-paragraph 1, and Section XI, Paragraph B, sub-paragraph 4, to permit the continued use of the multiple completion choke assembly in the Unkel Well No. 1-D and Vicksburg Unit Well No. 3.

2. The Applicant, Sun Oil Company, is further hereby granted an exception to Statewide Order No. 29-B, and particularly Section X, Paragraph E, sub-paragraph 1, and Section XI, Paragraph B, sub-paragraph 4, to permit, install and use the multiple completion choke assembly in producing Vicksburg Unit Well No. 1 and Lawrence-Chachere Unit Well No. 1-D, Vicksburg Unit Well No. 2 and Chachere Unit B, Well No. 1-D; Vicksburg Unit No. 4 and Kinder Canal Co. "A" Well No. 2-D; and Vicksburg Unit No. 5 and Sherman M. Houston Well No. 3-D, when such wells are dually completed in accordance with applicable rules and regulations.

3. The Applicant, Sun Oil Company, is hereby granted permission to commingle gaseous and/or liquid hydrocarbons from two separate reservoirs in the same tubing through the use of the multiple completion choke assembly and to subsequently measure such production and properly allocate both gaseous and/or liquid hydrocarbons to each separate reservoir. The rate of production of both gaseous and/or liquid hydrocarbons from each separate reservoir through the use of such multiple completion choke assembly shall be established by the following procedure:


- A. Pull the orifice head assembly of the multiple completion choke.
- B. Install a blank choke bean in the orifice head assembly to close in the zone with the lower pressure.
- C. Run the orifice head assembly.
- D. Allow the higher pressure well to flow until the rate of flow is stabilized. Obtain twenty-four-hour measurement of gaseous and/or liquid hydrocarbons by means of tank gauges and orifice meter.
- E. Pull the orifice head assembly.
- F. Replace the blank choke bean with a choke bean sized to regulate the production from the weaker zone to its allowed rate. The choke used during the preceding test to control the rate from the higher pressure zone remains in the orifice head.
- G. Re-run the orifice head assembly.
- H. Measure the total gaseous and the total liquid hydrocarbons using tank gauges and orifice meter.
- I. Deduct from the quantities determined by (H) the gaseous and/or liquid hydrocarbons previously determined by test of the higher pressure zone. The difference is that produced by the weaker zone.

Production tests shall be made and reported to the District Manager in accordance with the provisions of Statewide Order 29-B, Section XI, Paragraph D. Applicant will provide individual separating and measurement facilities for each dual completion.

4. The Applicant, Sun Oil Company, shall be granted permission, without the necessity of a public hearing, to use the multiple completion choke assembly in wells completed from two separate reservoirs in the Kinder Field, Allen Parish, Louisiana, under the applicable provisions of this order, and compliance with the applicable provisions of Statewide Order No. 29-D, as amended and supplemented, and following proper notice to all parties at interest who were not parties to the hearing for which this order is issued.

This Order shall be effective on and after June 1, 1961.

DEPARTMENT OF CONSERVATION
OF THE STATE OF LOUISIANA



JAMES H. GILL
COMMISSIONER OF CONSERVATION

CVH/lwh-6/20/61

STATE OF LOUISIANA
DEPARTMENT OF CONSERVATION
BATON ROUGE, LOUISIANA

April 17, 1963

ORDER NO. 576-1

Order concerning the application of Sun Oil Company
for an exception to the provisions of Department of
Conservation Statewide Order No. 29-B, dated July 19,
1943, in the Belle Isle Field, St. Mary Parish, Louisiana.

Pursuant to power delegated under the laws of the State of Louisiana, and particularly Title 30 of Louisiana Revised Statutes of 1950, and after public hearing held under Docket No. 63-90 in New Orleans, Louisiana, on March 8, 1963, upon the application of Sun Oil Company, following legal publication of notice and notice by mail to all known interested parties in accordance with the rules prescribed by the Commissioner of Conservation, the following order is issued and promulgated by the Commissioner of Conservation as being reasonably necessary to conserve the oil and gas resources of the State, to prevent waste as defined by law, to avoid the drilling of unnecessary wells, and otherwise to carry out the provisions of the laws of this State.

F I N D I N G S

The Commissioner of Conservation finds as follows:

1. That a reasonable interpretation of all available engineering data indicates that the use of a multiple completion choke assembly will permit the production of gaseous and/or liquid hydrocarbons from two separate reservoirs simultaneously through the same tubing without communication existing between such zones of production utilizing energy dissipated in producing from one zone to lift production from another zone.
2. That a reasonable interpretation of all engineering data indicates that the use of the multiple completion choke assembly should permit a definite measurement of production from two separate reservoirs and the resulting proper allocation of both gaseous and/or liquid hydrocarbons.
3. That the use of the multiple completion choke assembly will permit a greater ultimate recovery from the producing zones, thereby preventing waste and increasing the just and equitable share of recoverable hydrocarbons and the resulting greater income to each owner of an interest in said producing zones.
4. That an exception to Statewide Order No. 29-B, and in particular Section X, Paragraph E, sub-paragraph 1, and Section XI, Paragraph B, sub-paragraph 4, should be granted to permit the use of such multiple completion choke assembly in the following wells situated in the Belle Isle Field, St. Mary Parish, Louisiana, to-wit: Belle Isle Unit Wells Nos. 1-56, 1-56-D, 3-5 and 3-5-D.
5. That permission to install and use the multiple completion choke assembly in wells dually completed by Sun Oil Company in the Belle Isle Field, St. Mary Parish, Louisiana, subsequent to this Order can be granted, without the necessity of a public hearing, under the provisions of this Order and applicable provisions of Statewide Order No. 29-D, as amended and supplemented, following proper notice to all parties at interest who were not parties to this hearing.

ORDER

NOW, THEREFORE, IT IS ORDERED THAT:

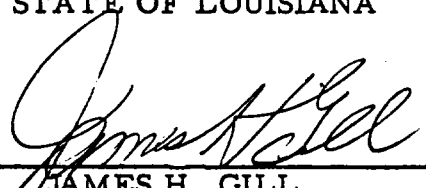
1. The applicant, Sun Oil Company, be and is hereby granted an exception to Statewide Order No. 29-B, and particularly Section X, Paragraph E, sub-paragraph 1, and Section XI, Paragraph B, sub-paragraph 4, to permit the use of the multiple completion choke assembly in their Belle Isle Unit Wells Nos. 1-56, 1-56-D, 3-5 and 3-5-D, Belle Isle Field, St. Mary Parish, Louisiana.

2. The applicant, Sun Oil Company, is hereby granted permission to commingle gaseous and/or liquid hydrocarbons from two separate reservoirs in the same tubing through the use of the multiple completion choke assembly and to subsequently measure such production and properly allocate both gaseous and/or liquid hydrocarbons to each separate reservoir. The rate of production of both gaseous and/or liquid hydrocarbons from each separate reservoir through the use of such multiple completion choke assembly shall be established by the procedure as outlined in Paragraph 3 of Order No. 541-1.

3. The applicant, Sun Oil Company, shall be granted permission, without the necessity of a public hearing, to install and use the multiple completion choke assembly in wells completed from two separate reservoirs in the Belle Isle Field, St. Mary Parish, Louisiana, under the applicable provisions of this order, and compliance with the applicable provisions of Statewide Order No. 29-D, as amended and supplemented, and following proper notice to all parties at interest who were not parties to the hearing for which this order is issued.

This Order shall be effective on and after April 17, 1963.

DEPARTMENT OF CONSERVATION
OF THE STATE OF LOUISIANA



JAMES H. GILL
COMMISSIONER OF CONSERVATION

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STATE OF LOUISIANA
DEPARTMENT OF CONSERVATION
BATON ROUGE, LOUISIANA

January 22, 1964

ORDER NO. 137-11

Order relating to the application of The California Company for exception to Statewide Order 29-B and authority to utilize the dual flow bottom hole choke assembly in its W. A. Colvin No. 1 Well and other wells in the Hico-Knowles Field, Lincoln Parish, Louisiana, as permanent installations.

* * * * *

Pursuant to power delegated under the laws of the State of Louisiana and particularly Title 30 of Louisiana Revised Statutes of 1950, and after a public hearing held under Docket No. 64-32 in Shreveport, Louisiana, on January 15, 1964, upon the application of The California Company, a Division of California Oil Company, following legal publication of notice and notice by mail to all known interested parties in accordance with the rules prescribed by the Commissioner of Conservation as being reasonably necessary to conserve the oil and gas resources of the State, to prevent waste as defined by law, to avoid the drilling of unnecessary wells, and otherwise to carry out the provisions of the laws of this State.

F I N D I N G S

The Commissioner of Conservation finds as follows:

1. That The California Company is the operator of the W. A. Colvin No. 1 Well in Section 32, Township 20 North, Range 3 West, Hico-Knowles Field, Lincoln Parish, Louisiana.

2. That said W. A. Colvin No. 1 Well is dually completed in the "A" Zone and the "E" Zone of the Hosston Sand with the production from each zone being owned by the same persons and/or operators in the same proportions.

3. That by letter dated November 19, 1962, the Department of Conservation approved the installation and testing of a dual flow bottom hole choke assembly in said W. A. Colvin No. 1 Well for a period of six months.

4. That data obtained by tests performed with a dual flow bottom hole choke assembly installed in said W. A. Colvin No. 1 Well, as shown on applicant's Exhibit 4 presented at the public hearing in this Docket, indicates that the use of the choke should permit a definite measurement of production from two separate reservoirs and the resulting proper allocation of the gaseous and accompanying liquid hydrocarbons.

5. That the use of a dual flow bottom hole choke assembly will permit the production of gaseous and its accompanying liquid hydrocarbons from two separate reservoirs simultaneously through the same tubing without communication existing between such zones of production, utilizing energy dissipated in producing from one zone to lift production from another zone.

6. That the use of a dual flow bottom hole choke assembly will permit a more efficient ultimate recovery from the producing zones, thereby preventing waste and increasing the recoverable hydrocarbons and resulting in greater income to each owner of an interest in the producing zones.

7. That exception to Statewide Order 29-B Section X and Section XI should be granted to permit the installation and use of the dual flow bottom hole choke assembly in the W. A. Colvin No. 1 Well as a permanent installation and authority for the installation of such choke assembly in other Hico-Knowles wells should be granted without the necessity of a public hearing, under the provisions of this Order and applicable provisions of Statewide Order 29-D as amended and supplemented, following proper notice to all parties in interest who were not parties to this hearing.

O R D E R

NOW, THEREFORE, IT IS ORDERED THAT:

1. The applicant, The California Company, a Division of California Oil Company, be and is hereby granted exception to Statewide Order 29-B and in particular Section X and Section XI thereof to permit the use of a dual flow bottom hole choke assembly in the W. A. Colvin No. 1 Well, Hico-Knowles Field, as a permanent installation.

2. The applicant be and is further granted permission to commingle gaseous and its accompanying liquid hydrocarbons from two separate reservoirs in the same tubing through the use of the dual flow bottom hole choke assembly and to subsequently measure such production and properly allocate both gaseous and its accompanying liquid hydrocarbons to each separate reservoir. The rate of production of both gaseous and its associated liquid hydrocarbons from each separate reservoir through the use of the dual flow bottom hole choke assembly shall be established by the following procedure:

- A. Pull the orifice head assembly of the dual flow bottom hole choke assembly.
- B. Install a blank choke bean in the orifice head assembly to close off the upper zone.
- C. Rerun the orifice head assembly.
- D. Allow the open formation to flow until the rate of flow is stabilized. Obtain twenty-four hour measurement of gaseous and its accompanying liquid hydrocarbons by means of an acceptable liquid measuring device and an orifice meter.

- E. Pull the orifice head assembly and replace the blank choke bean with a choke bean sized to regulate the production from the zone to its allowed rate. The choke used during the preceding test to control the rate from the lower tested zone remains in the orifice head.
- F. Rerun the orifice head assembly.
- G. Measure the total gaseous and total liquid hydrocarbons using an acceptable liquid measuring device and an orifice meter.
- H. Insure the critical flow phenomena has existed in at least one of the producing zones by interpretation of the production data obtained.
- I. Deduct from the quantities determined by "G" the gaseous and its accompanying liquid hydrocarbons determined by "D". The difference is that produced by the upper zone.

Production tests shall be made and reported to the District Manager in accordance with the provisions of Statewide Order 29-D, Paragraph 4. Applicant shall provide individual separating and measurement facilities for each dual completion.

3. The applicant, The California Company, a Division of California Oil Company, be and is further granted exception to Statewide Order 29-B Section X and Section XI and permission without the necessity of a public hearing to use the dual flow bottom hole choke assembly in wells completed in any two separate reservoirs in the Hico-Knowles Field, Lincoln Parish, Louisiana, under the applicable provisions of this Order and upon compliance with other applicable provisions of Statewide Order 29-D as amended and supplemented, and following proper notice to all parties in interest who were not parties to the hearing for which this Order is issued.

This Order shall be effective on and after February 1, 1964.

DEPARTMENT OF CONSERVATION
OF THE STATE OF LOUISIANA



JAMES H. GILL

COMMISSIONER OF CONSERVATION

H. OWENS -

STATE OF LOUISIANA
DEPARTMENT OF CONSERVATION
BATON ROUGE, LOUISIANA

April 28, 1964

gwh
5-22-64

ORDER NO. 218-1

Order concerning the application of Texaco Inc. to
utilize multiple completion choke assembly equip-
ment in multiply completed wells in the Cote Blanche
Island Field, St. Mary Parish, Louisiana.

Pursuant to power delegated under the laws of the State of Louisiana, and particularly Title 30 of Louisiana Revised Statutes of 1950, and after a public hearing held under Docket No. 64-75 in Baton Rouge, Louisiana, on February 26, 1964, upon the application of Texaco Inc., following legal publication of notice and notice by mail to all known interested parties in accordance with the rules prescribed by the Commissioner of Conservation, the following order is issued and promulgated by the Commissioner of Conservation as being reasonably necessary to conserve the oil and gas resources of the State, to prevent waste as defined by law, to avoid the drilling of unnecessary wells, and otherwise to carry out the provisions of the laws of this State.

F I N D I N G S

The Commissioner of Conservation finds as follows:

1. That a reasonable interpretation of all available engineering data indicates that the use of a multiple completion choke assembly will permit the production of gas and liquid hydrocarbons from two separate zones simultaneously through the same tubing without communication existing between such zones of production.
2. That a reasonable interpretation of all engineering data indicates that the use of the multiple completion choke assembly should permit a definite measurement of production from two separate zones and the resulting proper allocation of the production therefrom.
3. That the use of the multiple completion choke assembly will permit a greater ultimate recovery from the producing zones, thereby preventing waste and increasing the just and equitable share of recoverable hydrocarbons and the resulting greater income to each owner of an interest in said producing zones.
4. That an exception to Statewide Order No. 29-B, and in particular Section II, Paragraph B, should be granted to Texaco Inc. to permit the use of such multiple completion choke assembly in their Cote Blanche Island Nos. 20 and 20-D Wells in the Cote Blanche Island Field, St. Mary Parish, Louisiana.
5. That permission to use the multiple completion choke assembly in other wells dually completed by Texaco Inc. in the Cote Blanche Island Field, St. Mary Parish, Louisiana, subsequent to this Order, should be granted without the necessity of a public hearing, under the provisions of this Order and the applicable provisions of Statewide Order No. 29-D, following proper legal notice and notice to all parties at interest who were not parties to this hearing.

O R D E R

NOW, THEREFORE, IT IS ORDERED THAT:

1. The applicant, Texaco Inc., be and is hereby granted an exception to Statewide Order No. 29-B, and particularly Section II, Paragraph B, to permit, install, and use the multiple completion choke assembly in their multiply completed Cote Blanche Island Nos. 20 and 20-D Wells in the Cote Blanche Island Field, St. Mary Parish, Louisiana.

2. The applicant, Texaco Inc., is hereby granted permission to commingle gas and liquid hydrocarbons from two separate zones in the designated wells, reference Paragraph 1 above, in the same tubing through the use of the multiple completion choke assembly and to be subsequently measure such commingled production and allocate both gas and liquid hydrocarbons to each separate zone in accordance with the procedure adopted and approved herein.

3. The gas and liquid hydrocarbons shall be allocated to the individual zones from which it was produced on the basis of the tubing inlet pressure and the appropriate production distribution curves, such curves being constructed for various tubing inlet pressures, various surface production choke sizes and various choke bean sizes installed in the orifice head of the multiple completion choke assembly, by the following procedure:

- A. Pull the orifice head assembly of the multiple completion choke.
- B. Install a blank choke bean in the orifice head assembly to close in the zone with the lower pressure.
- C. Run the orifice head assembly.
- D. Allow the higher pressure zone to flow until the rate of flow is stabilized. Obtain twenty-four hour measurement of gas and liquid hydrocarbons by means of tank gauges and orifice meter, and concurrently, determine a downhole tubing inlet pressure and surface production choke size.
- E. Pull the orifice head assembly.
- F. Replace the blank choke bean with a choke bean sized to regulate the production from the lower pressure zone to its allowed rate. The choke used during the preceding test to control the rate of production from the higher pressure zone remains in the orifice head and the surface production choke size remains unchanged.
- G. Re-run the orifice head assembly.
- H. Measure the total commingled gas and total commingled liquid hydrocarbons from both zones using tank gauges and orifice meters and concurrently, determine downhole tubing inlet pressure.
- I. From data obtained from Steps D and H above, construct appropriate production distribution curves.

Steps A through H shall be repeated bi-monthly to check downhole chokes and to insure the accuracy of the production allocation method provided for herein, or sooner, if in the opinion of the operator the producing characteristics of the commingled stream indicates a need therefor; it being provided, however, that the Commissioner may, upon proper showing of feasibility, change the frequency of such testing without the necessity of a public hearing.

4. Production tests shall be made and reported to the appropriate District Manager in accordance with the provisions of Statewide Order No. 29-B, Section XI, Paragraph D. Applicant will provide individual separating and measurement facilities for each dual completion equipped with a multiple completion choke assembly.

5. Permission to use the multiple completion choke assembly in other similarly equipped wells dually completed by Texaco Inc. in the Cote Blanche Island Field, subsequent to this Order, may be granted in accordance with the provisions of Finding No. 5 above.

This Order shall be effective on and after May 1, 1964.

DEPARTMENT OF CONSERVATION
OF THE STATE OF LOUISIANA

A handwritten signature in dark ink, appearing to read "James H. Gill", is written over a horizontal line.

JAMES H. GILL
COMMISSIONER OF CONSERVATION

AFPjr/lwh-4/28/64